From: Sinks, Tom
Sent: Fri, 12 Jan 2018 16:50:56 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: any chance you can give me a call today or over the weekend?

404 226 6288
Thomas Sinks, Ph.D.
Director, Office of the Science Advisor
Environmental Protection Agency
1200 Pennsylvania Ave NW
Room 41251 RRB, MC 8105 R
Washington DC, 20460
office: (202) 564-3099 mobile: (404) 226-6288
email: sinks.tom@epa.gov

From: Bandemehr, Angela
Sent: Wed, 17 May 2017 12:47:43 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Bandemehr, Angela wants to share the file World Bank Lead Paint Meeting 5-17-17.docx with you

To view World Bank Lead Paint Meeting 5-17-17.docx, sign in or create an account.

From: U.S. EPA Media Relations
Sent: Tue, 10 Nov 2015 10:59:52 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: bdsfasdfEPA and Partners Announce National Plan to Prevent Lung Cancer Deaths Due to Radon Exposure

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
Christie St. Clair
stclair.christie@epa.gov
202-564-2880

FOR IMMEDIATE RELEASE:
November 10, 2015

EPA and Partners Announce National Plan to Prevent Lung Cancer Deaths Due to Radon Exposure

WASHINGTON — Today, the U.S. Environmental Protection Agency (EPA), American Lung Association, and other partners are announcing a strategy for preventing 3,200 lung cancer deaths annually by 2020 through radon exposure reduction strategies. Exposure to radioactive radon gas is the second leading cause of lung cancer in America. The goal to save these lives will be achieved by reducing high radon levels in five million homes, apartments, schools and childcare centers. The partnership includes three federal departments and agencies, and nine national organizations.

"EPA is very pleased to be a partner in this important life-saving effort to prevent lung cancer caused by radon. Working together creates new opportunities for reducing the risk from radon. Combining our resources will save American lives by magnifying our effectiveness in preventing exposure to radon in homes and schools," said EPA Administrator Gina McCarthy.

The National Radon Action Plan: A Strategy for Saving Lives sets out strategies to drive the changes needed to reduce exposure to radon. Strategies include requiring radon testing and reduction systems as a standard practice in housing finance and insurance programs, and institutionalizing radon risk reduction through building code requirements.

The strategy released today builds on the successes of the 2011 Federal Radon Action Plan, which has led to protections from radon in more than 105,000 multi-family homes financed by HUD, among other actions by the

federal government. Today's plan broadens the scope and reach of the Federal Radon Action Plan by including the health, scientific and technical expertise of the national partners.

The collaborative strategy announced today aligns federal efforts with those of other national organizations dedicated to lowering radon exposure: the American Lung Association (ALA), American Association of Radon Scientists and Technologists (AARST), the American Society of Home Inspectors (ASHI), Cancer Survivors Against Radon (CanSAR), the Children's Environmental Health Network (CEHN), Citizens for Radioactive Radon Reduction, the Conference of Radiation Control Program Directors (CRCPD), the Environmental Law Institute (ELI), and the National Center for Healthy Housing (NCHH). In addition to EPA, the federal partners are the Department of Housing and Urban Development (HUD), and the Department of Health and Human Services (HHS).

Radon is a radioactive gas that comes from the decay of uranium in the ground. Nearly all soils contain some naturally occurring uranium. Radon seeps up from the soil into buildings where it can accumulate to high levels. Since radon is invisible and odorless, dangerous levels can exist indoors without occupants knowing. Testing is the only way to know the radon level in your home or school. Exposure to radon causes an estimated 21,000 lung cancer deaths annually. After smoking, radon is the second-leading cause of lung cancer. However, affordable measures effective in reducing radon indoors are available, and when employed can prevent radon-induced lung cancer and save lives.

The new National Plan can be found at http://www.epa.gov/radon/national-radon-action-plan-strategy-saving-lives.

For more information visit http://www2.epa.gov/radon.

R308

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: Bandemehr, Angela
Sent: Fri, 3 Mar 2017 20:42:50 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Mccann, Ellie;Mance, Cassandra
Subject: Call with the World Bank next week

When is a good time to have a call with the World Bank on the lead paint report next week?

For Ellie and I the following times are good:

- Tuesday at 9 or 1 or 2
- Thursday at 10 or 2
- Friday at 9 or 2 or 3

Please let me know what works for you and I'll notify the Bank on Monday. By the way, Mary Jean will be working on it for the Bank.

Thanks!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Sinks, Tom
Sent: Wed, 25 Apr 2018 12:22:55 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Jackson, Richard J.;Howard Frumkin (frumkin@uw.edu);Chris Portier (cportier@me.com);Burke, Thomas
Cc: Sinks, Tom
Subject: Data access and Regulatory Science
Attachments: Strenthening Transparency in Regulatory Science 04-24-2018.pdf

Former Boss Colleagues:

Yesterday, Administrator Pruitt signed the attached Proposed rule which should appear in the Federal Register shortly. While it was developed as the Administrator's response to a proposed law passed last year by the House but not taken up by the Senate (HONEST ACT), it is not identical. Please feel free to consider it and distribute it to those who would wish to comment.

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 30

[EPA-HQ-OA-2018-0259; FRL-XXXX-XX]

RIN 2080-AA14

Strengthening Transparency in Regulatory Science

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: This document proposes a regulation intended to strengthen the transparency of EPA regulatory science. The proposed regulation provides that when EPA develops regulations, including regulations for which the public is likely to bear the cost of compliance, with regard to those scientific studies that are pivotal to the action being taken, EPA should ensure that the data underlying those are publicly available in a manner sufficient for independent validation. In this notice, EPA solicits comment on this proposal and how it can best be promulgated and implemented in light of existing law and prior Federal policies that already require increasing public access to data and influential scientific information used to inform federal regulation.

DATES: Comments must be received on or before **[insert date 30 days after date of publication in the Federal Register]**.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–HQ–OA-2018-0259, at *https:// www.regulations.gov.* Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a

written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/ commenting-epa-dockets.*

FOR FURTHER INFORMATION, CONTACT: Tom Sinks, Office of the Science Advisor, Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460; (202) 564-0221; email address: *staff_osa@epa.gov*.

SUPPLEMENTARY INFORMATION:

Submitting CBI. Do not submit information that you consider to be CBI electronically through *https://www.regulations.gov* or email. Send or deliver information identified as CBI to only the following address using U.S Postal Service: U.S. Environmental Protection Agency, EPA Docket Center, EPA–HQ–OA-2018-0259, Mail Code 28221T, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. For other methods of delivery, see https://www.epa.gov/dockets/where-send-comments-epa-dockets.

Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that

includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. If you submit a CD-ROM or disk that does not contain CBI, mark the outside of the disk or CD-ROM clearly that it does not contain CBI. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 Code of Federal Regulations (CFR) part 2.

Organization of This Document. The following outline is provided to aid in locating information in this preamble.

I. General Information

A. Does this Action Apply to Me?

B. What action is the Agency taking?

C. What is the Agency's Authority for taking this action?

II. Background

III. Request for Comment

IV. Statutory and Executive Orders

I. General Information

A. Does this action apply to me?

This proposed regulation does not directly regulate any entity outside the federal government. However, any entity interested in EPA's regulations may be interested in this proposal. This proposal may be of particular interest to entities that conduct research and other scientific activity that is likely to be relevant to EPA's regulatory activity.

B. What action is the agency taking?

This notice solicits information and comment from the public on a proposed regulation intended to strengthen the transparency of EPA regulatory science. The proposed regulation provides that, for the science pivotal to its significant regulatory actions, EPA will ensure that the data and models underlying the science is publicly available in a manner sufficient for validation and analysis. In this notice, EPA solicits comment on this proposal and how it can best be implemented in light of existing law and prior statements of policy that have called for increasing public access to data and influential scientific information used to inform federal regulation. EPA has not previously implemented these policies and guidance in a robust and consistent manner. This proposal will help ensure that EPA is pursuing its mission of protecting public health and the environment in a manner that the public can trust and understand.

C. What is the agency's authority for taking this action?

The Agency proposes to take this action under authority of the statutes it administers, including provisions providing general authority to promulgate regulations necessary to carry out the Agency's functions under these statutes and provisions specifically addressing the Agency's conducting of and reliance on scientific activity to inform those functions, including Clean Air Act sections 103, 301(a), 42 U.S.C. 7403, 7601(a); Clean Water Act sections 104, 501, 33 U.S.C. 1254, 1361; Safe Drinking Water Act sections 1442, 1450(a)(1), 42 U.S.C. 300j-1, 300j-9(a)(1); Resource Conservation and Recovery Act sections 2002(a)(1), 7009, 42 U.S.C. 6912(a)(1), 6979; Comprehensive Environmental Response, Compensation, and Liability Act (as delegated to the Administrator via Executive Order 12580) sections 115, 311, 42 U.S.C. 9616, 9660; Emergency Planning and Community Right-To-Know Act section 328, 42 U.S.C. 11048;

Federal Insecticide, Fungicide, and Rodenticide Act sections 25(a)(1), 136r(a), 7 U.S.C. 136r(a), 136w; and Toxic Substances Control Act, as amended, section 10, 15 U.S.C. 2609. This action is also consistent with requirements in the Administrative Procedure Act to ensure public participation in the rulemaking process. As noted in Section III below, EPA solicits comment on whether additional or alternative sources of authority are appropriate bases for this proposed regulation.

II. Background

The best available science must serve as the foundation of EPA's regulatory actions.[1] Enhancing the transparency and validity of the scientific information relied upon by EPA strengthens the integrity of EPA's regulatory actions and its obligation to ensure the Agency is not arbitrary in its conclusions. By better informing the public, the Agency in enhancing the public's ability to understand and meaningfully participate in the regulatory process.[2] In applying the best available science to its regulatory decision-making, EPA must comply with federal transparency and data integrity laws, and must also ensure=that its decision-making is marked by independence, objectivity, transparency, clarity, and reproducibility. Although these standards are important in all scientific endeavors, they are of paramount importance when the government relies on science to inform its significant regulatory decisions that will affect the public. When EPA develops significant regulations using public resources, including regulations for which the public is likely to bear the cost of compliance, EPA should ensure that the data and models

[1] See Exec. Order No. 13563, 76 Fed. Reg. 3821 (Jan. 21, 2011). "Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation. It must be based on the best available science."

[2] See Memorandum for the Heads of Executive Department and Agencies on Scientific Integrity (Mar. 9, 2009). "If scientific and technological information is developed and used by the Federal Government, it should ordinarily be made available to the public. To the extent permitted by law, there should be transparency in the preparation, identification, and use of scientific and technological information in policymaking."

underlying scientific studies that are pivotal to the regulatory action are available to the public. This proposed rule is designed to increase transparency in the preparation, identification, and use of science in policymaking.

This proposed rule is consistent with the principles underlying the Administrative Procedure Act and programmatic statutes that EPA administers to disclose to the public the bases for agency rules and to rationally execute and adequately explain agency actions.[3] This proposed rule is also consistent with Executive Orders 13777[4] and 13783,[5] and the focus on transparency in OMB's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by Federal Agencies*[6] (the Guidelines) and OMB *Memorandum 13-13: Open Data Policy – Managing Information as an Asset.*[7] It builds upon prior EPA actions[8] in response to government-wide data access and sharing policies, as well as the experience of other

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[3] EPA has the authority to establish policies governing its reliance on science in the administration of its regulatory functions. Historically, EPA has not consistently observed the policies underlying this proposal, and courts have at times upheld EPA's use non-public data in support of its regulatory actions. *See Coalition of Battery Recyclers Ass'n v. EPA*, 604 F.3d 613, 623 (D.C. Cir. 2010); *American Trucking Ass'ns v. EPA*, 283 F.3d 355, 372 (D.C. Cir. 2002). EPA is proposing to exercise its discretionary authority to establish a policy that would preclude it from using such data in future regulatory actions.

[4] Exec. Order No. 13777, 82 Fed. Reg. 12285 (Mar. 1, 2017). Regulatory reform efforts shall attempt to identify "those regulations that rely in whole or in part on data, information, or methods that are not publicly available or that are insufficiently transparent to meet the standard for reproducibility."

[5] Exec. Order No. 13783, 82 Fed. Reg. 16093 (Mar. 31, 2017). "It is also the policy of the United States that necessary and appropriate environmental regulations comply with the law, are of greater benefit than cost, when permissible, achieve environmental improvements for the American people, and are developed through transparent processes that employ the best available peer-reviewed science and economics."

[6] February 22, 2002 (67 F.R 8453) *OMB's Guidelines Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information* (2002) https://www.federalregister.gov/documents/2002/02/22/R2-59/guidelines-for-ensuring-and-maximizing-the-quality-objectivity-utility-and-integrity-of-information.

[7] *Memorandum for the Heads of Executive Departments and Agencies on Open Data Policy—Managing Information as an Asset* (https://project-open-data.cio.gov/policy-memo/). "Specifically, this Memorandum requires agencies to collect or create information in a way that supports downstream information processing and dissemination activities. This includes using machine-readable and open formats, data standards, and common core and extensible metadata for all new information creation and collection efforts. It also includes agencies ensuring information stewardship through the use of open licenses and review of information for privacy, confidentiality, security, or other restrictions to release."

[8] Plan to Increase Access to Results of EPA-Funded Scientific Research; EPA Open Government Plan 4.0; Open Data Implementation Plan; EPA's Scientific Integrity Policy; Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency; ;

federal agencies in this space.[9] In particular, this proposal applies concepts and lessons learned from its ongoing implementation of the 2016 Plan to Increase Access to Results of EPA-Funded Scientific Research to significant regulatory decisions. The proposed rule takes into consideration the policies or recommendations of third party organizations who advocated for open science.[10] These policies are informed by the policies recently adopted by some major scientific journals,[11] spurred in some part by the "replication crisis." [12]

Today, EPA is proposing to establish a clear policy for the transparency of the scientific information used for significant regulations: specifically, the dose response data and models that underlie what we are calling "pivotal regulatory science." "Pivotal regulatory science" is the studies, models, and analyses that drive the magnitude of the benefit-cost calculation, the level of a standard, or point-of-departure from which a reference value is calculated. In other words, they are critical to the calculation of a final regulatory standard or level, or to the quantified costs, benefits, risks and other impacts on which a final regulation is based.

With this notice, EPA is soliciting public comment on a proposed regulation designed to provide a mechanism to increase access to dose response data and models underlying pivotal regulatory

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[9] For example, see related policies from the National Science Foundation, National Institute of Science and Technology, the National Institutes of Health; and the US Census Bureau, which provides secure access to data from several agencies in an environment that protects against unauthorized disclosure (https://www.census.gov/fsrdc).

[10] These include policies and recommendations from: the Administrative Conference of the United States' Science in the Administrative Process Project; National Academies' reports on *Improving Access to and Confidentiality of Research Data*, *Expanding Access to Research Data*, and *Access to Research Data in the 21st Century*; the Health Effects Institute; Center for Open Science; members of the Risk Assessment Specialty Section of the Society of Toxicology, the Dose Response Section of the Society for Risk Analysis, and the International Society for Regulatory Toxicology and Pharmacology; and the Bipartisan Policy Center's Science for Policy Project.

[11] For example, see related policies from the *Proceedings of the National Academy of Sciences*, *PLOS ONE*, *Science*, and *Nature*.

[12] See: https://www.nature.com/articles/s41562-016-0021; http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.0020124; http://science.sciencemag.org/content/343/6168/229.long; https://www.economist.com/news/leaders/21588069-scientific-research-has-changed-world-now-it-needs-change-itself-how-science-goes-wrong.; http://stm.sciencemag.org/content/8/341/341ps12.full

science in a manner consistent with statutory requirements for protection of privacy and confidentiality of research participants, protection of proprietary data and confidential business information, and other compelling interests. The proposal takes comment on how to ensure that, over time, more of the data and models underlying the science that informs regulatory decisions (over and above the dose response data and models underlying "pivotal regulatory science") is available to the public for validation[13] in a manner that honors legal and ethical obligations to reduce the risks of unauthorized disclosure and re-identification. As such this proposed regulation is designed to change agency culture and practices regarding data access so that the scientific justification for regulatory actions is truly available for validation and analysis. Regulatory determinations based on science should describe and document any assumptions and methods used, and should address variability and uncertainty. Where available and appropriate, EPA will use peer-reviewed information, standardized test methods, consistent data evaluation procedures, and good laboratory practices to ensure transparent, understandable, and reproducible scientific assessments. EPA's regulatory science should be consistent with the Office of Management and Budget's *Final Information Quality Bulletin for Peer Review*.[14] Robust peer review plays a critical role in independently validating key findings and ensuring that the quality of published information meets the standards of the scientific and technical community.

In addition, this proposed regulation is designed to increase transparency of the assumptions underlying dose response models. As a case in point, there is growing empirical evidence of non-

[13] EPA has not consistently followed previous EPA policy (e.g, EPA's Scientific Integrity Guidance, referenced above) that encouraged the use of non-proprietary data and models.
[14] https://www.whitehouse.gov/wp-content/uploads/2017/11/2005-M-05-03-Issuance-of-OMBs-Final-Information-Quality-Bulletin-for-Peer-Review-December-16-2004.pdf

linearity in the concentration-response function for specific pollutants and health effects. The use of default models, without consideration of alternatives or model uncertainty, can obscure the scientific justification for EPA actions. To be even more transparent about these complex relationships, EPA should give appropriate consideration to high quality studies that explore: a broad class of parametric concentration-response models with a robust set of potential confounding variables; nonparametric models that incorporate fewer assumptions; various threshold models across the exposure range; and spatial heterogeneity. EPA should also incorporate the concept of model uncertainty when needed as a default to optimize low dose risk estimation based on major competing models, including linear, threshold, and U-shaped, J-shaped, and bell-shaped models.

Across EPA programs, much of the science that informs regulatory actions is developed outside the Agency. It is the charge of regulators to ensure that key findings are valid and credible, as required by OMB's Guidelines[15] (which apply to "third party" information - e.g., non-government scientific research – if the agency use of that information provides the appearance of representing agency views). Using scientific information that can be independently validated will lead to better outcomes, and strengthen public confidence in the health and environmental protections underpinning EPA's regulatory actions.

EPA believes that concerns about access to confidential or private information can, in many cases, be addressed through the application of solutions commonly in use across some parts of

[15] February 22, 2002 (67 F.R 8453) *OMB's Guidelines Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information* (2002) https://www.federalregister.gov/documents/2002/02/22/R2-59/guidelines-for-ensuring-and-maximizing-the-quality-objectivity-utility-and-integrity-of-information

the Federal government.[16] Nothing in the proposed rule compels the disclosure of any confidential or private information in a manner that violates applicable legal and ethical protections. Other federal agencies have developed tools and methods to de-identify private information for a variety of disciplines.[17] The National Academies have noted that simple data masking, coding, and de-identification techniques have been developed over the last half century and that "Nothing in the past suggests that increasing access to research data without damage to privacy and confidentiality rights is beyond scientific reach."[18] More recently, both the National Academies and the Bipartisan Commission on Evidence Based Policy[19] have discussed the challenges and opportunities for facilitating to secure access to confidential data for non-government analysts.

Considering the breadth of dose response data and models used in the development of significant EPA regulations, the requirements for availability may differ. These mechanisms may range from deposition in public data repositories, consistent with requirements for many scientific journals,[20] to, for certain types of information, controlled access in federal research data centers that facilitate secondary research use by the public.[21] EPA should collaborate with other federal agencies to identify strategies to protect confidential and private information in any circumstance in which it is making information publicly available. These strategies should be cost-effective

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[16] See examples from the U.S. Department of Health and Human Services, National Institute of Standards and Technology, U.S. Department of Education, and the U.S. Census Bureau.

[17] https://www.hhs.gov/hipaa/for-professionals/privacy/special-topics/de-identification/index.html.

[18] https://www.nap.edu/catalog/11434/expanding-access-to-research-data-reconciling-risks-and-opportunities.

[19] https://www.cep.gov/content/dam/cep/report/cep-final-report.pdf; https://www.nap.edu/catalog/24652/innovations-in-federal-statistics-combining-data-sources-while-protecting-privacy; https://www.nap.edu/catalog/24893/federal-statistics-multiple-data-sources-and-privacy-protection-next-steps.

[20] For example, see policies or recommendations of publishers Taylor & Francis, Elsevier, PLOS, and Springer Nature.

[21] For example: https://osp.od.nih.gov/scientific-sharing/requesting-access-to-controlled-access-data-maintained-in-nih-designated-data-repositories-e-g-dbgap/; https://www.census.gov/fsrdc.

and may also include: requiring applications for access; restricting access to data for the purposes of replication, validation, and sensitivity evaluation; establishing physical controls on data storage; online training for researchers; and nondisclosure agreements.[22]

Implementation of this proposed rule will be consistent with the definition of "research data" in Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, exemptions in P.L. 89-487, and other applicable federal laws.

This proposed regulation is intended to apply prospectively to final regulations that are determined to be "significant regulatory actions" pursuant to E.O. 12866. The Agency's offices should be guided by this policy to the maximum extent practicable during ongoing regulatory action, even where such research has already been generated, solicited, or obtained.

III. Request for Comment

EPA solicits comment on all aspects of the proposed regulation and the bases articulated for it above. Specifically, EPA believes that it has identified appropriate sources of statutory authority for this proposed regulation in Section I(c) above, and solicits public comment on whether additional or alternative sources of authority are appropriate bases for this proposed regulation.

EPA further believes that a generally applicable regulatory provision of the type proposed here is the appropriate vehicle to establish and implement the policies articulated in Section II above, in the interests of consistency, predictability, and transparency across the functions that EPA performs.

EPA solicits comment on whether alternative or additional regulatory or other policy vehicles are appropriate to establish and implement these policies, and whether further regulatory or other

[22]These recommendations are consistent with those of Lutter and Zorn (2016). https://www.mercatus.org/system/files/Mercatus-Lutter-Public-Access-Data-v3.pdf.we re

policy vehicles at the programmatic or statutory level would be appropriate as alternative or additional steps the agency may take to further the policies articulated in Section II above. EPA solicits comment on the effects of this proposed rule on individual EPA programs, including whether certain activities are appropriate to be excepted or if other requirements would affect implementation. EPA also seeks comments on which criteria the Agency should use to base any exceptions, including whether case-by-case exceptions may be appropriate. Although the proposed regulatory text would impose requirements specifically on final regulations determined to be "significant regulatory actions" under E.O. 12866, EPA solicits comment on whether and to what extent these requirements, or other provisions and policies, should apply to other stages of the rulemaking process, including proposed rules, as well as to other types of agency actions and promulgations, such as guidance. EPA also solicits comment on whether a narrower scope of coverage would be appropriate, such as only final regulations that are determined to be "major" under the Congressional Review Act, or "economically significant" under EO 12866. EPA also requests comment on whether certain categories of regulations should be excluded from coverage, such as those that merely reaffirm an existing standard, or some other category. For instance, we request comment on whether the provisions of the proposed rule should apply to individual party adjudications, enforcement activities, or permit proceedings when EPA determines that these provisions are practical and appropriate and that the actions are scientifically or technically novel or likely to have precedent-setting influence on future actions. EPA seeks comment on whether the Agency should apply the provisions of the proposed rule to these actions or to specific types of actions within these categories. The Agency also seeks comment on whether other agency actions, beyond significant

final regulatory actions under EO 12866, should be included, such as site-specific permitting actions or non-binding regulatory determinations.

EPA solicits comment on the definitions of "*pivotal regulatory science*," and "*dose response data and models*" and how to implement such definitions.

EPA also solicits comment on how to incorporate stronger data and model access requirements into the terms and conditions of cooperative agreements and grants. EPA solicits comments on how it can build upon other federal agencies' policies regarding grantee and cooperator requirements for data access and data sharing. EPA also solicits suggestions for a platform that would enable the Agency to implement the provisions of this proposal related to increasing public access to EPA-funded data. EPA also seeks comment on methodologies and technologies designed to provide protected access to identifiable and sensitive data, such as individual health data, and on commenters experience with the use of such methodologies and technologies and their strengths and limitations. Similarly, EPA seeks comment on how to balance appropriate protection for copyrighted or confidential business information, including where protected by law, with requirements for increased transparency of pivotal regulatory science. EPA also requests comment on whether there are other compelling interests besides privacy, confidentiality, national and homeland security that may require special consideration when data is being released.

EPA solicits comment on implementation of the proposed regulation, including which parts of the Agency should be responsible for carrying out these requirements. EPA seeks comment on the effective date of a rule as well as on whether the Agency should seek to phase-in the requirements for certain significant regulatory actions or seek to prioritize specific actions. For regulatory programs, like the National Ambient Air Quality Standards program, in which future

significant regulatory actions may be based on the administrative record from previous reviews - particularly where the governing statute requires repeated review on a fixed, date-certain cycle - EPA seeks comment on the manner in which this proposed rule should apply to that previous record. EPA also solicits comments on whether and how the proposed rule should apply to dose response data and models underlying pivotal regulatory science if those data and models were developed prior to the effective date. In addition, EPA seeks comment on how the prospective or retrospective application of the provisions for dose response data and models or pivotal regulatory science could inadvertently introduce bias regarding the timeliness and quality of the scientific information available. EPA seeks comment on how to address a circumstance in which EPA has a statutory requirement to make a determination for which scientific information publicly available in a manner sufficient for independent validation does not exist. EPA also seeks comment on any additional implementation challenges not discussed in this notice that commenters may be aware of as well as suggestions for addressing them.

The proposed rule includes a provision allowing the Administrator to exempt significant regulatory decisions on a case-by-case basis if he or she determines that compliance is impracticable because it is not feasible to ensure that all dose response data and models underlying pivotal regulatory science are publicly available in a fashion that is consistent with law, protects privacy and confidentiality, and is sensitive to national and homeland security, or in instances where OMB's Information Quality Bulletin for Peer Review provides for an exemption (Section IX). The agency requests comment on whether these exemptions are appropriate, and on whether there are other situations in which specific significant regulatory actions, or specific categories of significant regulatory actions should be exempted.

EPA also requests comment on whether the disclosure requirements applicable to dose response data and models in the proposed rule should be expanded to cover other types of data and information, such as for example economic and environmental impact data and models that are designed to predict the costs, benefits, market impacts and/or environmental effects of specific regulatory interventions on complex economic or environmental systems.

IV. Statutory and Executive Orders Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket.

EPA believes the benefits of this proposed rule justify the costs. The benefits of EPA ensuring that dose response data and models underlying pivotal regulatory science are publicly available in a manner sufficient for independent validation are that it will improve the data and scientific quality of the Agency's actions and facilitate expanded data sharing and exploration of key data sets; this is consistent with the conclusions of the National Academies[23] This action should be implemented in a cost-effective way and is consistent with recent activities of the scientific community and other federal agencies, which will help to lower costs of implementation. The proposed rule directs EPA to make all reasonable efforts to explore methodologies, technologies, and institutional arrangements for making dose response models and data underlying pivotal regulatory science used in significant regulatory decisions available to the public in a manner sufficient for independent validation, consistent with law and protection of privacy,

[23] https://www.nap.edu/catalog/11434/expanding-access-to-research-data-reconciling-risks-and-opportunities.

confidentiality, and national and homeland security. However, it does not compel the Agency to make that information available where it concludes after all such reasonable efforts that doing so in way that complies with the law and appropriate protections is not possible.

By limiting the proposed rule to pivotal regulatory science for final significant regulatory actions pursuant to EO 12866, the proposed rule ensures that this standard for transparency affects a smaller subset of regulations which are economically significant, create inconsistency for other federal agencies, alter budgetary impacts, or raise novel legal or policy issues. One recent analysis found that: "Improvements in reproducibility can be thought of as increasing the net benefits of regulation because they would avoid situations in which costs or benefits are wrongly estimated to occur or in which regulatory costs are imposed without corresponding benefits. …" They concluded that "an increase in existing net benefits from greater reproducibility, which, if it occurred, would cover the costs of obtaining the data and making the data available."[24]

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs

This action is not expected to be an Executive Order 13771 regulatory action because it relates to "agency organization, management or personnel."

C. Paperwork Reduction Act (PRA)

This action does not contain any information collection activities and therefore does not impose an information collection burden under the PRA.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities.

[24] https://www.mercatus.org/system/files/Mercatus-Lutter-Public-Access-Data-v3.pdf.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or tribal governments or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action.

H. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution or use of energy.

J. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes that this action is not subject to Executive Order 12898 (59 FR 7629, February 16, 1994) because it does not establish an environmental health or safety standard.

List of Subjects in 40 CFR Part 30

Environmental protection, Administrative practice and procedure, Reporting and recordkeeping requirements.

Dated: APR 24 2018.

E. Scott Pruitt,

Administrator

For the reasons set forth in the preamble, EPA proposes to add 40 CFR part 30 as follows:

PART 30—Transparency in Regulatory Decisionmaking

1. Add part 30 to read as follows:

PART 30—Transparency in Regulatory Decisionmaking

Sec.

30.1 What is the purpose of this subpart?

30.2 What definitions apply to this subpart?

30.3 How do the provisions of this subpart apply?

30.4 What requirements apply to EPA's use of studies in taking final action?

30.5 What requirements apply to EPA's use of dose response data and models underlying pivotal regulatory science?

30.6 What additional requirements pertain to the use of dose response data and models underlying pivotal regulatory science?

30.7 What role does independent peer review play in this section?

30.8 How is EPA to account for cost under this subpart?

30.9 May the EPA Administrator grant exemptions to this subpart?

30.10 What other requirements apply under this subpart?

Authority: Clean Air Act §§ 103, 301(a), 42 U.S.C. §§ 7403, 7601(a); Clean Water Act §§ 104, 501, 33 U.S.C. §§ 1254, 1361; Safe Drinking Water Act §§ 1442, 1450(a)(1), 42 U.S.C. §§ 300j-1, 300j-9(a)(1); Resource Conservation and Recovery Act §§ 2002(a)(1), 7009, 42 U.S.C. §§ 6912(a)(1), 6979; Comprehensive Environmental Response, Compensation, and Liability Act (as delegated to the Administrator via Executive Order 12580) §§ 115, 311, 42 U.S.C. §§ 9616, 9660; Emergency Planning and Community Right-To-Know Act § 328, 42 U.S.C. § 11048; Federal Insecticide, Fungicide, and Rodenticide Act §§ 25(a)(1), 136r(a), 7 U.S.C. §§ 136r(a), 136w; and Toxic Substances Control Act, as amended, § 10, 15 U.S.C. § 2609.

§30.1 What is the purpose of this subpart?

This subpart directs EPA to ensure that the regulatory science underlying its actions is publicly available in a manner sufficient for independent validation.

§30.2 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A; and the following terms shall have the specific meanings given them.

Dose response data and models means the data and models used to characterize the quantitative relationship between the amount of dose or exposure to a pollutant, contaminant, or substance and the magnitude of a predicted health or environmental impact. Such functions

typically underlie pivotal regulatory science that drives the size of benefit-cost calculations, the level of a standard, and/or the points of departure from which reference values (reference doses or reference concentrations) are calculated.

Pivotal regulatory science means the specific scientific studies or analyses that drive the requirements and/or quantitative analysis of EPA final significant regulatory decisions.

Regulatory decisions mean final regulations determined to be "significant regulatory actions" by the Office of Management and Budget pursuant to Executive Order 12866.

Regulatory science means scientific information, including assessments, models, criteria documents, and regulatory impact analyses, that provide the basis for EPA final significant regulatory decisions.

Research data means "research data" as that term is defined in Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

§30.3 How do the provisions of this subpart apply?

The provisions of this subpart apply to *dose response data and models* underlying *pivotal regulatory science* that are used to justify significant *regulatory decisions* regardless of the source of funding or identity of the party conducting the regulatory science. The provisions of

this section do not apply to physical objects (like laboratory samples), drafts, and preliminary analyses. Except where explicitly stated otherwise, the provisions of this subpart do not apply to any other type of agency action, including individual party adjudications, enforcement activities, or permit proceedings.

§30.4 What requirements apply to EPA's use of studies in taking final action?

EPA shall clearly identify all studies (or other regulatory science) relied upon when it takes any final agency action. EPA should make all such studies available to the public to the extent practicable.

§30.5 What requirements apply to EPA's use of dose response data and models underlying pivotal regulatory science?

When promulgating significant regulatory actions, the Agency shall ensure that *dose response data and models* underlying *pivotal regulatory science* are publicly available in a manner sufficient for independent validation. Where the Agency is making data or models publicly available, it shall do so in a fashion that is consistent with law, protects privacy, confidentiality, confidential business information, and is sensitive to national and homeland security. Information is considered "publicly available in a manner sufficient for independent validation" when it includes the information necessary for the public to understand, assess, and replicate findings. This may include, for example:

(a) Data (where necessary, data would be made available subject to access and use restrictions).

(b) Associated protocols necessary to understand, assess, and extend conclusions;

(c) Computer codes and models involved in the creation and analysis of such information;

(d) Recorded factual materials; and

(e) Detailed descriptions of how to access and use such information.

The provisions of this section apply to dose response data and models underlying pivotal regulatory science regardless of who funded or conducted the underlying data, models, or other regulatory science. The agency shall make all reasonable efforts to explore methodologies, technologies, and institutional arrangements for making such data available before it concludes that doing so in a manner consistent with law and protection of privacy, confidentiality, national and homeland security is not possible. Where data is controlled by third parties, EPA shall work with those parties to endeavor to make the data available in a manner that complies with this section.

§30.6 What additional requirements pertain to the use of dose response data and models underlying pivotal regulatory science?

EPA shall describe and document any assumptions and methods used, and should describe variability and uncertainty. EPA shall evaluate the appropriateness of using default

assumptions, including assumptions of a linear, no-threshold dose response, on a case-by-case basis. EPA shall clearly explain the scientific basis for each model assumption used and present analyses showing the sensitivity of the modeled results to alternative assumptions. When available, EPA shall give explicit consideration to high quality studies that explore: a broad class of parametric dose-response or concentration-response models; a robust set of potential confounding variables; nonparametric models that incorporate fewer assumptions; various threshold models across the dose or exposure range; and models that investigate factors that might account for spatial heterogeneity.

§30.7 What role does independent peer review in this section?

EPA shall conduct independent peer review on all *pivotal regulatory science* used to justify *regulatory decisions,* consistent with the requirements of the OMB Final Information Quality Bulletin for Peer Review (70 FR 2664) and the exemptions described therein.

Because transparency in regulatory science includes addressing issues associated with assumptions used in models, EPA shall ask peer reviewers to articulate the strengths and weaknesses of EPA's justification for the assumptions applied and the implications of those assumptions for the results.

§30.8 How is EPA to account for cost under this subpart?

EPA shall implement the provisions of this subpart in a manner that minimizes costs.

§30.9 May the EPA Administrator grant exemptions to this subpart?

Yes. The Administrator may grant an exemption to this subpart on a case-by-case basis if he or she determines that compliance is impracticable because:

(a) It is not feasible to ensure that all dose response data and models underlying pivotal regulatory science is publicly available in a manner sufficient for independent validation, in a fashion that is consistent with law, protects privacy, confidentiality, confidential business information, and is sensitive to national and homeland security; or

(b) It is not feasible to conduct independent peer review on all pivotal regulatory science used to justify regulatory decisions for reasons outlined in OMB Final Information Quality Bulletin for Peer Review (70 FR 2664), Section IX.

§30.10 What other requirements apply under this subpart?

EPA shall implement the provisions of this section consistent with the definition of "research data" in Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, exemptions in P.L. 89-487, and other applicable federal laws.

Where appropriate, data sharing agreements and state-of-the-art data-masking techniques may be employed to facilitate access to information.

From: Marzouk, Evonne
Sent: Thu, 17 Aug 2017 21:10:22 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie;Bandemehr, Angela
Subject: Discussion of lead and crime information

Hi Henry and Helen,
I know that you came across information about the correlation between lead and crime in the World Bank report. This topic has been of particular interest to Walker, and so we've done some research and developed a powerpoint summary on the information found. Angela and I were discussing this today, and we'd like to set up a time to discuss this with you and to get your impressions about whether and how this information might be used.

It's not urgent but since it's important to Walker we suspect it might come up in the lead-up to UNEA3, and so we'd like to keep the conversation moving. Can you tell us your availability in September, perhaps the first week or two of September?

Thanks,
Evonne

Evonne Marzouk
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Office of Global Affairs and Policy
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
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Follow us on Twitter! @EPAAllNations

From: U.S. EPA Media Relations
Sent: Tue, 26 Jul 2016 16:00:39 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA and NIEHS Award $28 Million to Fund Children's Centers at Five Universities across the U.S.

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

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Cathy Milbourn
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202-564-7849

FOR IMMEDIATE RELEASE
July 26, 2016

EPA and NIEHS Award $28 Million to Fund Children's Centers at Five Universities across the United States

Researchers at the centers will examine how to better protect children from environmental threats

WASHINGTON – Today, the U.S. Environmental Protection Agency (EPA) is announcing almost $28 million in joint funding with the National Institute of Environmental Health Sciences (NIEHS) to five Children's Environmental Health and Disease Prevention Research Centers to promote health and well-being in communities where children live, learn and play.

"These centers have helped establish the foundation of children's environmental health research in the United States," said Dr. James H. Johnson, Director of EPA's National Center for Environmental Research. "The funding announced today will add to this legacy by providing cutting-edge research and greater awareness in understanding how a range of environmental factors can affect our nation's children."

Since 1998, EPA and NIEHS have jointly funded children's centers, which combine community engagement with scientific research. Through the children's centers, EPA has developed a national network of researchers, health care professionals and parents groups. The centers at Northeastern University and Emory University are new additions to the network and will bring their unique contributions to the important mission of protecting the health of children and adolescents.

The following institutions each received joint funding for their research:

- The Columbia Center for Children's Environmental Health at Columbia University, New York, N.Y. to further investigate the impact of polycyclic aromatic hydrocarbons (PAHs) on adolescent cognitive, emotional, behavioral and adiposity, or body fat, health outcomes during vulnerable life stages.

- The Center for Children's Health, the Environment, Microbiome and Metabolomics at Emory University, Atlanta, Ga. to investigate the interrelationships of components of the prenatal and

postnatal environment to better understand the effects of environmental contaminants on the microbiome and subsequent effects on neurodevelopment.

- The Johns Hopkins Center for the Study of Childhood Asthma in the Urban Environment, Baltimore, Md. to investigate obesity as a susceptibility factor among asthmatics to translate findings into interventions to improve pediatric asthma health in those with the highest risks.

- The Center for Research on Early Childhood Exposure and Development in Puerto Rico at Northeastern University, Boston, Mass. to investigate the combined effects of exposure within the uterus and during early childhood to multiple pollutants on children's health and development, how psychosocial factors modify the effects of environmental chemical exposures, and the development of biomarkers that capture exposures.

- The Center for Integrative Research on Childhood Leukemia and the Environment at the University of California, Berkeley, Berkeley, Calif. for research to identify the causes of childhood acute lymphoblastic leukemia (ALL) in an ethnically diverse population to significantly improve our understanding of the effect of environmental exposures on the development of childhood leukemia.

More about the Children's Environmental Health and Disease Prevention Research Centers Program awards: https://www.epa.gov/research-grants/niehsepa-childrens-environmental-health-and-disease-prevention-research-centers

Email notifications for EPA's research funding opportunities are available at: http://www.epa.gov/research-grants/research-grants-fellowship-and-sbir-listserv

R123

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: U.S. EPA Media Relations
Sent: Tue, 3 May 2016 12:23:22 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Celebrates Programs, Tools to Prevent Asthma Attacks

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT
Christie St. Clair
stclair.christie@epa.gov
202-564-2880

FOR IMMEDIATE RELEASE
May 3, 2016

EPA Celebrates Programs, Tools to Prevent Asthma Attacks

(WASHINGTON) – May is Asthma Awareness Month, when the U.S. Environmental Protection Agency (EPA) spotlights ways people can take simple steps to help prevent asthma attacks. EPA also honors local asthma management programs for their leadership in improving the lives of people living with asthma, especially those in underserved communities.

"Asthma is fundamentally connected to the health of our environment – whether it's the air outside, or in our homes," said Administrator Gina McCarthy. "By working together across the environmental, housing, social, and medical sectors, we can do even more to raise awareness about this critical public health issue and protect those who are most vulnerable, including the more than 6 million children in the U.S. with asthma."

On May 12, EPA will honor the winners of the agency's National Environmental Leadership Award in Asthma Management. Each winner is an outstanding national model for comprehensive asthma care. These four winners are: AmeriHealth Caritas of Philadelphia; Urban Health Plan of Bronx, N.Y.; New England Asthma Innovation Collaborative of Boston; and Public Health – Seattle and King County of Seattle. For more information on these winners, go to www.epa.gov/asthma/national-environmental-leadership-award-asthma-management.

Asthma is a respiratory disease that makes breathing difficult. Asthma affects nearly 24 million Americans, including more than six million children—with poor and minority children affected disproportionately. The economic impacts of asthma amount to more than $50 billion per year from direct and indirect costs, such as medical bills and missed school and work days. EPA's comprehensive asthma program helps those with asthma through environmental

research and education, as well as through community-focused outreach that aims to increase sustainable access to home visits.

Asthma sufferers can take some important actions to help control their symptoms and still maintain active lifestyles with three simple steps: Identify and avoid environmental asthma triggers; create an Asthma Action Plan with help from your doctor; and pay attention to your local air quality conditions through the http://airnow.gov website and Air Quality Index app for your smart phone.

To learn more about preventing asthma attacks, go to www.epa.gov/asthma.

R081

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: U.S. EPA Media Relations
Sent: Mon, 25 Jul 2016 11:18:23 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Determines that Aircraft Emissions Contribute to Climate Change

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
Christie St. Clair, stclair.christie@epa.gov, 202-564-2880

FOR IMMEDIATE RELEASE:
July 25, 2016

EPA Determines that Aircraft Emissions Contribute to Climate Change Endangering Public Health and the Environment

(WASHINGTON) – The U.S. Environmental Protection Agency (EPA) today finalized a determination under the Clean Air Act that greenhouse gas (GHG) emissions from certain types of aircraft engines contribute to the pollution that causes climate change and endangers Americans' health and the environment. The findings are for carbon dioxide (CO2), methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6), all of which contribute to GHG pollution that represents the largest driver of human-caused climate change. These particular GHGs come primarily from engines used on large commercial jets.

"Addressing pollution from aircraft is an important element of U.S. efforts to address climate change. Aircraft are the third largest contributor to GHG emissions in the U.S. transportation sector, and these emissions are expected to increase in the future," said Janet McCabe, EPA's Acting Assistant Administrator for Air and Radiation. "EPA has already set effective GHG standards for cars and trucks and any future aircraft engine standards will also provide important climate and public health benefits."

The agency is not issuing emissions standards for aircraft engines in this action. The final endangerment and contribution findings for aircraft engine GHG emissions are an important step that EPA must take prior to adopting domestic GHG engine standards. EPA anticipates that the International Civil Aviation Organization (ICAO) will formally adopt its environmental committee's February 2016 agreement on international aircraft CO2 standards in March 2017. EPA anticipates moving forward on standards that would be at least as stringent as ICAO's standards.

The rulemaking process for aircraft GHG emissions will provide opportunities for industry, NGOs and other interested parties to provide their input through public review and comment.

In 2009, EPA issued similar findings regarding GHG emissions from new cars and light trucks. The agency determined that those vehicles contribute to GHG pollution that threatens Americans' health and welfare by leading to long-lasting changes in our climate that can have a range of negative effects today and in the future. Since then, the science on human-induced climate change has strengthened, further supporting today's final determination.

Today's findings support the goals of the President's Climate Action Plan to reduce emissions from large sources of carbon pollution. U.S. aircraft emit roughly 12 percent of GHG emissions from the U.S. transportation sector and 29 percent of GHG emissions from all aircraft globally. Under the Clean Air Act, EPA consults with the Federal Aviation Administration as it develops aircraft engine emissions standards. By law, any standards EPA sets must not cause a significant increase in noise or adversely affect safety.

Today's findings do not apply to small piston-engine planes (the type of plane often used for recreational purposes), or to military aircraft.

For more information on the final aircraft endangerment and cause or contribute findings, visit http://epa.gov/otaq/aviation.htm.

R122

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: EPA Media Relations
Sent: Wed, 23 Nov 2016 10:43:31 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Finalizes Increase in Renewable Fuel Volumes

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
press@epa.gov

FOR IMMEDIATE RELEASE
November 23, 2016

EPA Finalizes Increase in Renewable Fuel Volumes

WASHINGTON - The U.S. Environmental Protection Agency (EPA) today finalized increases in renewable fuel volume requirements across all categories of biofuels under the Renewable Fuel Standard (RFS) program. In a required annual rulemaking, today's action finalizes the volume requirements and associated percentage standards for cellulosic biofuel, advanced biofuel, and total renewable fuel for 2017, and for biomass-based diesel for 2018.

"Renewable fuel volumes continue to increase across the board compared to 2016 levels," said Janet McCabe, the agency's acting assistant administrator for the Office of Air and Radiation. "These final standards will boost production, providing for ambitious yet achievable growth of biofuels in the transportation sector. By implementing the program enacted by Congress, we are expanding the nation's renewable fuels sector while reducing our reliance on imported oil."

Some key elements of today's action:

- Non-advanced or "conventional" renewable fuel increases in 2017, meeting the 15 billion-gallon congressional target for conventional fuels.

- The standard for biomass-based biodiesel – which must achieve at least 50 percent lifecycle greenhouse gas emission reductions compared to petroleum-based diesel – grows by 100 million gallons. The required volume of biomass-based diesel for 2017 is twice that of the minimum congressional target.

- Cellulosic biofuel – which must achieve at least 60 percent lifecycle greenhouse gas emissions reductions – grows 35 percent over the 2016 standard.

- The advanced biofuel standard – comprised of biomass-based diesel, cellulosic biofuel, and other biofuel that achieves at least 50 percent lifecycle greenhouse gas emissions reductions – increases 19 percent over the 2016 standard.

- Total renewable fuel volumes grow 1.2 billion gallons from 2016 to 2017, a 6 percent increase.

Renewable Fuel Volume Requirements for 2014-2018

	2014	**2015**	**2016**	**2017**	**2018**
Cellulosic biofuel (million gallons)	33	123	230	311	n/a
Biomass-based diesel (billion gallons)	1.63	1.73	1.9	2.0	2.1
Advanced biofuel (billion gallons)	2.67	2.88	3.61	4.28	n/a
Renewable fuel (billion gallons)	**16.28**	**16.93**	**18.11**	**19.28**	**n/a**

The Clean Air Act requires EPA to set annual RFS volume requirements for four categories of biofuels. By displacing fossil fuels, biofuels are part of the nation's overall strategy to enhance energy security and address climate change. EPA is using the tools provided by Congress to adjust the standards below the statutory targets, but the steadily increasing volumes in the final rule continue to support Congress's intent to grow the volumes. EPA implements the RFS program in consultation with the U.S. Department of Agriculture and the U.S. Department of Energy.

For more information on today's announcement, go to: https://www.epa.gov/renewable-fuel-standard-program/final-renewable-fuel-standards-2017-and-biomass-based-diesel-volume

R180

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: US Environmental Protection Agency
Sent: Fri, 22 Sep 2017 19:09:06 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Hurricane Maria Update for September 22, 2017

U.S. ENVIRONMENTAL PROTECTION AGENCY

NEWS RELEASE

WWW.EPA.GOV/NEWSROOM

CONTACT: press@epa.gov

EPA Hurricane Maria Update for September 22, 2017

WASHINGTON (September 22, 2017) – U.S. Environmental Protection Agency (EPA) continues to coordinate closely with federal, commonwealth, territory and local partners as the Agency responds to the impact of Hurricane Maria. EPA is supporting the Federal Emergency Management Agency (FEMA) through its assistance to the governments of Puerto Rico and the U.S. Virgin Islands. EPA is focused on environmental impacts and potential threats to people's health caused by Hurricane Maria, as well as the safety of those in the affected areas.

About 80 personnel are currently involved in hurricane efforts. The following EPA teams of On Scene Coordinators, scientists, technical assistance professionals and other first responders are deploying to Puerto Rico and the U.S. Virgin Islands this weekend, once conditions are safe to travel, to assess conditions in the aftermath of Hurricane Maria:

- Water Sampling
- Hazardous Materials Assessment
- Drinking Water and Wastewater Facilities Assessment
- Regulated Facility Assessment

EPA has important resources available online in English and Spanish about floodwaters, hazardous debris, household hazardous waste, and other hurricane impacts. EPA will continue to provide regular updates about EPA's response to Hurricane Maria. For information and updates, visit: www.epa.gov/hurricane-maria.

EPA Region 2 On Scene Coordinator assesses jet fuel depot in St. Croix, U.S. Virgin Islands Airport on September 21, 2017

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If you would rather not receive future communications from U.S. EPA, Region 1, let us know by clicking here.
U.S. EPA, Region 1, 5 Post Office Square, Suite 100, Boston, MA 02109-3912 United States

From: US Environmental Protection Agency
Sent: Fri, 22 Sep 2017 18:02:50 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Hurricane Maria Update for September 22, 2017

U.S. ENVIRONMENTAL PROTECTION AGENCY

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CONTACT: press@epa.gov

EPA Hurricane Maria Update for September 22, 2017

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- Hazardous Materials Assessment
- Drinking Water and Wastewater Facilities Assessment
- Regulated Facility Assessment

EPA has important resources available online in English and Spanish about floodwaters, hazardous debris, household hazardous waste, and other hurricane impacts. EPA will continue to provide regular updates about EPA's response to Hurricane Maria. For information and updates, visit: www.epa.gov/hurricane-maria.

EPA Region 2 On Scene Coordinator assesses jet fuel depot in St. Croix, U.S. Virgin Islands Airport on September 21, 2017

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If you would rather not receive future communications from U.S. EPA, Region 1, let us know by clicking here.
U.S. EPA, Region 1, 5 Post Office Square, Suite 100, Boston, MA 02109-3912 United States

From: US EPA Media Relations
Sent: Wed, 27 Jul 2016 13:15:01 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Issues Final Rule to Protect the Public from Exposure to Formaldehyde

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
Cathy Milbourn
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(202) 564-7849

FOR IMMEDIATE RELEASE
July 27, 2016

EPA Issues Final Rule to Protect the Public from Exposure to Formaldehyde

Agency implements congressionally enacted formaldehyde emission standards

WASHINGTON--The U.S. Environmental Protection Agency (EPA) today moves to reduce exposure to formaldehyde vapors from certain wood products produced domestically or imported into the United States. The agency worked with the California Air Resources Board to help ensure the final national rule is consistent with California requirements for composite wood products.

"We are carrying out important measures laid out by Congress to protect the public from harmful exposure of this widely used chemical found in homes and workplaces", said Jim Jones, EPA's assistant administrator for the Office of Chemical Safety and Pollution Prevention. "We have worked with the state of California as a partner to help ensure consistency in our requirements. The new rule will level the playing field for domestic manufacturers who have a high rate of compliance with the California standard and will ensure that imported products not subject to California's requirements will meet the new standard and thus, not contain dangerous formaldehyde vapors."

The Formaldehyde Emission Standards for Composite Wood Products Act of 2010 established emission standards for formaldehyde from composite wood products and directed EPA to finalize a rule on implementing and enforcing a number of provisions covering composite wood products.

One year after the rule is published, composite wood products that are sold, supplied, offered for sale, manufactured, or imported in the United States will need to be labeled as TSCA Title VI compliant. These products include: hardwood plywood, medium-density fiberboard, particleboard as well as household and other finished goods containing these products.

EPA is also setting testing requirements to ensure that products comply with those standards, establishing eligibility requirements for third-party certifiers, and establishing eligibility requirements for accreditation bodies to be recognized by EPA that will accredit the third-party certifiers. The new rule

includes certain exemptions for products made with ultra-low formaldehyde or no-added formaldehyde resins and new requirements for product labeling, recordkeeping, and enforcement provisions.

Formaldehyde is used as an adhesive in a wide range of wood products, such as some furniture, flooring, cabinets, bookcases and building materials including plywood and wood panels. Exposure to formaldehyde can cause adverse health effects including eye, nose and throat irritation, other respiratory symptoms and cancer.

For more information visit: https://www.epa.gov/formaldehyde/formaldehyde-emission-standards-composite-wood-products-0

R124

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: EPA Media Relations
Sent: Tue, 29 Nov 2016 12:46:18 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Names First Chemicals for Review Under New TSCA Legislation/Agency moves on chemical reform

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WWW.EPA.GOV/NEWSROOM

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FOR IMMEDIATE RELEASE

November 29, 2016

EPA Names First Chemicals for Review Under New TSCA Legislation

Agency answers call to move forward on chemical reform, naming asbestos among first to undergo risk evaluation

WASHINGTON - Today, EPA is announcing the first ten chemicals it will evaluate for potential risks to human health and the environment under TSCA reform.

"Under the new law, we now have the power to require safety reviews of all chemicals in the marketplace." said Jim Jones, assistant administrator of the of Office of Chemical Safety and Pollution Prevention. "We can ensure the public that we will deliver on the promise to better protect public health and the environment."

The first ten chemicals to be evaluated are:

- 1,4-Dioxane
- 1-Bromopropane
- Asbestos
- Carbon Tetrachloride
- Cyclic Aliphatic Bromide Cluster
- Methylene Chloride
- N-methylpyrrolidone
- Pigment Violet 29
- Tetrachloroethylene, also known as perchloroethylene
- Trichloroethylene

Toxic Substances Control Act (TSCA) as amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act, requires EPA to publish this list by December 19, 2016. These chemicals were drawn

from EPA's 2014 TSCA Work Plan, a list of 90 chemicals selected based on their potential for high hazard and exposure as well as other considerations.

When the list is published in the Federal Register it will trigger a statutory deadline to complete risk evaluations for these chemicals within three years. This evaluation will determine whether the chemicals present an unreasonable risk to humans and the environment. If it is determined that a chemical presents an unreasonable risk, EPA must mitigate that risk within two years.

Under the newly amended law, EPA must release a scoping document within six months for each chemical. This will include the hazard(s), exposure(s), conditions of use, and the potentially exposed or susceptible subpopulation(s) the agency plans to consider for the evaluation.

Additional chemicals will be designated for evaluation, and all of the remaining Work Plan chemicals will be reviewed for their potential hazard and exposure. For each risk evaluation that EPA completes, TSCA requires that EPA begin another. By the end of 2019, EPA must have at least 20 chemical risk valuations ongoing at any given time.

For more on the chemicals listed and additional information: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/evaluating-risk-existing-chemicals-under-tsca

R182

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: EPA Media Relations
Sent: Wed, 6 Apr 2016 13:31:58 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Provides $8.5 Million to Protect Air Quality in a Changing Climate

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

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FOR IMMEDIATE RELEASE
April 6, 2016

EPA Provides $8.5 Million to Protect Air Quality in a Changing Climate

WASHINGTON – Today, the U.S. Environmental Protection Agency (EPA) announced $8.5 million in research funding to 12 universities to protect air quality from the current and future challenges associated with the impacts of climate change.

"The research funded by these grants will improve our understanding of how climate change is impacting our air and our health," said Thomas A. Burke, EPA science advisor and deputy assistant administrator of EPA's Office of Research and Development. "By examining the relationship between air quality and climate change this research will help better protect human health and the environment."

Research has shown that climate change can affect air quality and impact public health. With the funding, researchers will expand investigations to understand:

- Health impacts from smoke due to a rise in wildfires that are increasing as a result of climate change;
- Atmospheric changes in air pollution chemistry that are occurring due to climate change;
- Potential consequences of increased levels of dust from particle pollution on human health and visibility;
- Drought and land-use changes in the western U.S. that may impact the incidence of dust storms; and
- Impacts to air quality from increased nitrogen-based fertilizer use.

The grants, funded through the agency's Science to Achieve Results (STAR) program, are being awarded to the following institutions:

- University of California, Davis, Davis, Calif. for Optimal Energy Portfolios to Sustain Economic Advantage, Achieve GHG Targets and Minimize PM2.5.

- University of California, Irvine, Irvine, Calif. for Effects of Ammonia on Secondary Organic Aerosol Formation in a Changing Climate.

- University of Colorado, Boulder, Boulder, Colo. for Rethinking the Formation of Secondary Organic Aerosols (SOA) under Changing Climate by Incorporating Mechanistic and Field Constraints.

- Colorado State University, Fort Collins, Colo. for Planning for an Unknown Future: Incorporating Meteorological Uncertainty into Predictions of the Impact of Fires and Dust on Particulate Matter.

- Columbia University, New York, N.Y. for Quantifying Risks from Changing U.S. PM2.5 Distributions Due to Climate Variability and Warming with Large Multi-model Ensembles and High-Resolution Downscaling.

- Emory University, Atlanta, Ga. for Wildfires in the Rocky Mountains Region: Current and Future Impacts on PM2.5, Health and Policy.

- Georgia Institute of Technology, Atlanta, Ga. for Integrated Analysis of Land Use Based Policies for Improving Air and Water Quality: A Focus on Agricultural Reactive Nitrogen and Wildland Fire Emissions as Climate, Land Use and Anthropogenic Emissions Change.

- Georgia Institute of Technology, Atlanta, Ga. for The Effect of Ammonia on Organic Aerosols in a Changing Climate.

- Harvard University, Cambridge, Mass. for Effects of Changes in Climate and Land Use on U.S. Dust and Wildfire Particulate Matter.

- University of Maryland, College Park, College Park, Md. for Particulate Matter Prediction and Source Attribution for U.S. Air Quality Management in a Changing World.

- University of New Mexico, Albuquerque, N.M. for Evaluating the Timeline of Particulate Matter Exposure from Urban Transportation and Land-Use Greenhouse Gas Mitigation Strategies Using a Novel Modeling Framework.

- Washington State University, Pullman, Wash. for Ensemble Analysis of Global Change Projections for U.S. Air Quality Using a Novel Combination of Lagrangian and Gridded Air Quality Models.

- University of Wyoming, Laramie, Wyo. for Interplay Between Black and Brown Carbon from Biomass Burning and Climate.

To learn more about these awards, visit:
https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/recipients.display/rfa_id/594/records_per_page/ALL

To learn more about EPA's air research, visit: http://www2.epa.gov/air-research

R066

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: U.S. EPA Media Relations
Sent: Tue, 13 Dec 2016 10:48:01 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Releases Final Report on Impacts from Hydraulic Fracturing Activities on Drinking Water

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WWW.EPA.GOV/NEWSROOM

CONTACT:
press@epa.gov (**News media only**)

FOR IMMEDIATE RELEASE
December 13, 2016

U.S. EPA Releases Final Report on Impacts from Hydraulic Fracturing Activities on Drinking Water Resources

EPA's report concludes that hydraulic fracturing activities can impact drinking water resources under some circumstances and identifies factors that influence these impacts

WASHINGTON - The U.S. Environmental Protection Agency (EPA) is releasing its scientific report on the impacts from hydraulic fracturing activities on drinking water resources, which provides states and others the scientific foundation to better protect drinking water resources in areas where hydraulic fracturing is occurring or being considered. The report, done at the request of Congress, provides scientific evidence that hydraulic fracturing activities can impact drinking water resources in the United States under some circumstances. As part of the report, EPA identified conditions under which impacts from hydraulic fracturing activities can be more frequent or severe. The report also identifies uncertainties and data gaps. These uncertainties and data gaps limited EPA's ability to fully assess impacts to drinking water resources both locally and nationally. These final conclusions are based upon review of over 1,200 cited scientific sources; feedback from an independent peer review conducted by EPA's Science Advisory Board; input from engaged stakeholders; and new research conducted as part of the study.

"The value of high quality science has never been more important in helping to guide decisions around our nation's fragile water resources. EPA's assessment provides the scientific foundation for local decision makers, industry, and communities that are looking to protect public health and drinking water resources and make more informed decisions about hydraulic fracturing activities," said Dr. Thomas A. Burke, EPA's Science Advisor and Deputy Assistant Administrator of EPA's Office of Research and Development. "This assessment is the most complete compilation to date of national scientific data on the relationship of drinking water resources and hydraulic fracturing."

The report is organized around activities in the hydraulic fracturing water cycle and their potential to impact drinking water resources. The stages include: (1) acquiring water to be used for hydraulic fracturing (Water Acquisition), (2) mixing the water with chemical additives to make hydraulic fracturing fluids (Chemical Mixing), (3) injecting hydraulic fracturing fluids into the production well to create and grow fractures in the targeted production zone (Well Injection), (4) collecting the wastewater that returns through the well after injection (Produced Water Handling), and (5) managing the wastewater through disposal or reuse methods (Wastewater Disposal and Reuse).

EPA identified cases of impacts on drinking water at each stage in the hydraulic fracturing water cycle. Impacts cited in the report generally occurred near hydraulically fractured oil and gas production wells and ranged in severity, from temporary changes in water quality, to contamination that made private drinking water wells unusable.

As part of the report, EPA identified certain conditions under which impacts from hydraulic fracturing activities can be more frequent or severe, including:

- Water withdrawals for hydraulic fracturing in times or areas of low water availability, particularly in areas with limited or declining groundwater resources;
- Spills during the management of hydraulic fracturing fluids and chemicals or produced water that result in large volumes or high concentrations of chemicals reaching groundwater resources;
- Injection of hydraulic fracturing fluids into wells with inadequate mechanical integrity, allowing gases or liquids to move to groundwater resources;
- Injection of hydraulic fracturing fluids directly into groundwater resources;
- Discharge of inadequately treated hydraulic fracturing wastewater to surface water resources; and
- Disposal or storage of hydraulic fracturing wastewater in unlined pits, resulting in contamination of groundwater resources.

The report provides valuable information about potential vulnerabilities to drinking water resources, but was not designed to be a list of documented impacts.

Data gaps and uncertainties limited EPA's ability to fully assess the potential impacts on drinking water resources both locally and nationally. Generally, comprehensive information on the location of activities in the hydraulic fracturing water cycle is lacking, either because it is not collected, not publicly available, or prohibitively difficult to aggregate. In places where we know activities in the hydraulic fracturing water cycle have occurred, data that could be used to characterize hydraulic fracturing-related chemicals in the environment before, during, and after hydraulic fracturing were scarce. Because of these data gaps and uncertainties, as well as others described in the assessment, it was not possible to fully characterize the severity of impacts, nor was it possible to calculate or estimate the national frequency of impacts on drinking water resources from activities in the hydraulic fracturing water cycle.

EPA's final assessment benefited from extensive stakeholder engagement with states, tribes, industry, non-governmental organizations, the scientific community, and the public. This broad engagement helped to ensure that the final assessment report reflects current practices in hydraulic fracturing and uses all data and information available to the agency. This report advances the science. The understanding of the potential impacts from hydraulic fracturing on drinking water resources will continue to improve over time as new information becomes available.

For a copy of the study, visit www.epa.gov/hfstudy.

R199

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: EPA Media Relations
Sent: Fri, 19 Feb 2016 11:24:27 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Releases Online Mapping Tool to Help Protect Drinking Water Sources

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WWW.EPA.GOV/NEWSROOM

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FOR IMMEDIATE RELEASE
February 19, 2016

EPA Releases Online Mapping Tool to Help Protect Drinking Water Sources

WASHINGTON – The U.S. Environmental Protection Agency today released DWMAPS – the Drinking Water Mapping Application to Protect Source Waters. This robust, online mapping tool provides the public, water system operators, state programs, and federal agencies with critical information to help them safeguard the sources of America's drinking water.

DWMAPS allows users to learn about their watershed and understand more about their water supplier. DWMAPS also lets users see if sources of their drinking water are polluted and if there are possible sources of pollution that could affect their communities' water supply. DWMAPS can even guide users to ways they can get involved in protecting drinking water sources in their community.

"A key part of having safe drinking water is protecting the sources – the streams, rivers, and lakes where utilities withdraw water," said EPA Administrator Gina McCarthy. "DWMAPS is the latest example of how EPA is using technology and digital tools to better protect public health and the environment.

Utilities and state drinking water program managers can also use DWMAPS with their own state and local data. It allows them to identify potential sources of contamination in their locations, find data to support source water assessments and plans to manage potential sources of contamination and evaluate accidental spills and releases. DWMAPS also integrates drinking water protection activities with other environmental programs at the federal, state, and local levels.

DWMAPS can provide users with information to update source water assessments and prioritize source water protection in any location or watershed in the country. Specifically, DWMAPS helps users to:

- **Identify potential sources of contamination** in locations defined by users;

- **Find data to support source water assessments and plans** to manage potential sources of contamination;
- **Evaluate accidental spills and releases**, identifying where emergency response resources for accidental releases must be readily available; and
- **Promote integration of drinking water protection activities** with other environmental programs at the EPA, state, and local levels.

The mapping system will not display the locations of Public Water System facility intakes, but it does contain a wide variety of data useful to the protection of drinking water sources. EPA developed DWMAPS in consultation with EPA regional drinking water programs, state drinking water regulators, and public water systems.

Visit www.epa.gov/sourcewaterprotection/dwmaps

R025

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: U.S. EPA Media Relations
Sent: Thu, 12 Jan 2017 12:18:14 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Report Shows Air Emissions of Toxic Chemicals from Industrial Facilities Down More Than Half Sin

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FOR IMMEDIATE RELEASE
January 12, 2017

EPA Report Shows Air Emissions of Toxic Chemicals from Industrial Facilities Down More Than Half Since 2005

Reductions provide important public health benefits for communities across the nation

WASHINGTON — The U.S. Environmental Protection Agency today released its annual Toxics Release Inventory (TRI) National Analysis, which shows releases of toxic chemicals into the air fell 56% from 2005-2015 at industrial facilities submitting data to the TRI program.

"Today's report shows action by EPA, state and tribal regulators and the regulated community has helped dramatically lower toxic air emissions over the past 10 years," said Jim Jones, EPA Assistant Administrator for the Office of Chemical Safety and Pollution Prevention. "The TRI report provides citizens access to information about what toxic chemicals are being released in their neighborhoods and what companies are doing to prevent pollution."

The report shows an 8% decrease from 2014 to 2015 at facilities reporting to the program contributed to this ten-year decline. Hydrochloric acid, sulfuric acid, toluene and mercury were among chemicals with significantly lower air releases at TRI-covered facilities. Medical professionals have associated these toxic air pollutants with health effects that include damage to developing nervous systems and respiratory irritation.

Combined hydrochloric acid and sulfuric acid air releases fell more than 566 million pounds, mercury more than 76,000 pounds, and toluene more than 32 million pounds at TRI-covered facilities. Coal- and oil-fired electric utilities accounted for more than 90% of nationwide reductions in air releases of hydrochloric acid, sulfuric acid and mercury from 2005 to 2015 in facilities reporting to the program. This trend is helping protect millions of families and children from these harmful pollutants. Reasons for these reductions include a shift from coal to other fuel sources, the installation of control technologies, and

implementation of environmental regulations.

In 2015, of the nearly 26 billion pounds of total chemical waste managed at TRI-covered industrial facilities (excluding metal mines), approximately 92% was not released into the environment due to the use of preferred waste management practices such as recycling, energy recovery, and treatment. This calculation does not include the metal mining sector, which presents only limited opportunities for pollution prevention. The TRI Pollution Prevention (P2) Search Tool has more information about how individual facilities and parent companies are managing waste and reducing pollution at the source.

EPA, states, and tribes receive TRI data annually from facilities in industry sectors such as manufacturing, metal mining, electric utilities, and commercial hazardous waste management. Under the Emergency Planning and Community Right-to-Know Act (EPCRA), facilities must report their toxic chemical releases for the prior calendar year to EPA by July 1 of each year. The Pollution Prevention Act also requires facilities to submit information on pollution prevention and other waste management activities of TRI chemicals. Nearly 22,000 facilities submitted TRI data for calendar year 2015.

This year's report also includes a section highlighting the new Frank R. Lautenberg Chemical Safety for the 21st Century Act. This section focuses on the overlap between TRI chemicals and chemicals designated as Work Plan chemicals by EPA's Office of Chemical Safety and Pollution Prevention under the Toxic Substances Control Act (TSCA).

The TRI National Analysis website includes new interactive features such as an automated "flipbook" [https://www.epa.gov/trinationalanalysis/30-year-anniversary-tri-program-slideshow] depicting how the TRI Program has evolved over the past 30 years, and a new embedded dashboard that allows users to build customized visualizations of TRI data by a chemical or a sector. These features are intended to promote more user engagement and exploration of TRI data.

To access the 2015 TRI National Analysis, including local data and analyses, visit www.epa.gov/trinationalanalysis

Information on facility efforts to reduce toxic chemical releases is available at www.epa.gov/tri/p2.

R011

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: U.S. EPA Media Relations
Sent: Mon, 12 Dec 2016 14:15:01 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Requires Stronger Standards for Applying the Riskiest Pesticides

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FOR IMMEDIATE RELEASE
December 12, 2016

EPA Requires Stronger Standards for Applying the Riskiest Pesticides

Improved training and minimum age requirements will help protect people and the environment.

WASHINGTON--Today, the U.S. Environmental Protection Agency (EPA) is finalizing standards for applicators who apply restricted-use pesticides that are not available for purchase by the general public, and require special handling.

"We are committed to keeping our communities safe, protecting our environment and protecting workers and their families," said Jim Jones, EPA Assistant Administrator for the Office of Chemical Safety and Pollution Prevention. "By improving training and certification, those who apply these restricted use pesticides will have better knowledge and ability to use these pesticides safely."

Today's action will reduce the likelihood of harm from the misapplication because the pesticides may only be applied by a certified applicator or someone working under their direct supervision. EPA's stricter standards would require all people who are certified to apply restricted use pesticides to be at least 18 years of age. These certifications must be renewed every five years.

EPA is requiring specialized licensing for certain methods such as fumigation and aerial application that can pose greater risks if not conducted properly. For further protection, those working under the supervision of certified applicators will now receive training to use pesticides safely and to protect their families from "take-home" pesticide exposure.

EPA expects the benefits of this rule to include fewer acute pesticide incidents to people, reduced chronic exposure and reduced incidents of ecological harm from pesticide use.

States and Tribes may issue licenses to pesticide applicators with an EPA-approved program who can demonstrate the ability to use these products safely. The final action also updates requirements for state

programs and for applicators obtaining licenses. Many states already have in place some of the stronger requirements of today's action.

The final rule includes flexibility for states to continue portions of their existing programs that are equivalent to the revised rule. EPA will work with states to review and approve updated certification plans.

Learn more: https://www.epa.gov/pesticide-worker-safety/revised-certification-standards-pesticide-applicators

R197

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: EPA Tools
Sent: Fri, 19 Feb 2016 20:01:07 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA Tools & Resources Webinar - Healthy Heart Program Follow-Up

ollow-up for the EPA Tools and Resources *'ealthy Heart Program* webinar

: appreciate your interest in registering for the EPA Tools and Resources *Healthy Heart ogram* webinar. The presentation slides are now available with the recording to soon follo

p://www.epa.gov/research/epa-tools-and-resources-webinar-series/

ou were unable to attend, we hope you find the webinar slides informative and useful. ase register for the next EPA Tools and Resources webinar on March 16, 2016 3pm ET, ich will focus on wildfire smoke and public health with the link below:

ps://epawebconferencing.acms.com/toolsandresourceswebinar_wildfires/event/event_info

ou have further questions about registration, please contact Amy Scheuer at: heuer.Amy@epa.gov

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From: EPA Media Relations
Sent: Tue, 9 Feb 2016 14:23:51 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: EPA's FY 2017 Budget Request Increases Support for Communities to Deliver Core Environmental and Hea

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FOR IMMEDIATE RELEASE
February 9, 2016

EPA's FY 2017 Budget Request Increases Support for Communities to Deliver Core Environmental and Health Protections

WASHINGTON – The Obama Administration's Fiscal Year 2017 budget announced today for the U.S. Environmental Protection Agency (EPA) lays out a strategy to ensure that steady progress is made in addressing known environmental problems and ensuring the agency and its partners in environmental protection, states and tribes, are positioned to meet the challenges of the future. EPA's FY 2017 budget request of $8.267 billion provides resources vital to that overarching vision. The request is $127 million above the agency's enacted level for FY 2016.

"For 45 years, EPA's investments to protect public health and the environment have consistently paid off," said EPA Administrator Gina McCarthy. "The proposed budget reflects an understanding that a strong economy depends on a healthy environment. The Administration is committed to continuing crucial work to curb climate change while improving air quality, protecting our water, conducting rigorous scientific research, maintaining an effective compliance and enforcement program, and making sure the public is safe from toxic chemicals."

Fiscal Year 2017 Budget Highlights Include:

Making a Visible Difference in Communities Across the Country

Helping all communities connect with the information and resources they need to address local environmental concerns and issues remains a key element of EPA's community-focused efforts. Coordination with other federal agencies, states, tribes, and stakeholders will help to focus the work of diverse programs at the community level. In response to feedback from across the country, this budget proposes a multifaceted effort to enable communities of all sizes, rural and urban, to find needed

assistance and support for capacity building, planning, and implementation of environmental protection programs. For example, in addition to the $17 million provided for the Alaska Native Villages infrastructure assistance program, and an additional $2.9 million is provided to these communities to conduct resiliency planning exercises and capacity-building efforts. This will build upon previous collaborative efforts with FEMA, NOAA and HUD.

In addition to existing cross-program efforts, including Community Resource Coordinators, $2 million is requested for non-EPA Circuit Riders who will help communities across the Nation connect with information and environmental programs that address their local concerns. In order to help overburdened and vulnerable communities address local environmental and public health issues, $5 million dollars will be available to provide financial assistance to eligible organizations working on these issues. The budget includes $90 million in Brownfields Project grants to local communities, an increase of $10 million. These funds will help to return contaminated sites to productive reuse by increasing investment in technical assistance and community grants for assessment and cleanup. These efforts include helping communities adopt green infrastructure, providing technical assistance for building resilience and adapting to climate change, and helping communities to reduce environmental impacts through advanced monitoring technology and decision making tools.

Addressing Climate Change and Improving Air Quality

The FY 2017 budget prioritizes actions to reduce the impacts of climate change, one of the most significant challenges for this and future generations, and supports the President's Climate Action Plan. EPA's FY 2017 Budget includes $235 million for efforts to cut carbon pollution and other greenhouse gases through common sense standards, guidelines, and voluntary programs. EPA's Clean Power Plan, which establishes carbon pollution reduction standards for existing power plants, is a top priority for the agency and will help spur innovation and economic growth while creating a clean energy economy. Implementing these plans will involve innovative approaches and flexibility for achieving solutions, as well as extensive and unprecedented work with states, tribes, and territories, which is why this budget includes an increase of $25 million in grants to help states implement their Clean Power Plan strategies.

As part of the President's 21st Century Clean Transportation Plan, the President proposes to establish a new mandatory fund at EPA. The existing fleet of cars, trucks, and buses is aging, contributing to climate change and putting our children's health at risk. To protect the health of the most vulnerable populations and reduce childhood exposure to harmful exhaust, EPA will provide a total of $1.65 billion through the Fund over the course of 10 years to retrofit, replace, or repower diesel equipment. The proposed funding, which is separate from the Agency's discretionary funding request, will provide up to $300 million in FY 2017 to renew and increase funding for the Diesel Emissions Reduction Grant Program, which is set to expire in 2016.

Working with the National Highway Transportation Safety Administration, EPA will continue to address greenhouse gas and fuel efficiency standards for mobile sources. These standards will represent significant savings at the pump, reduce carbon pollution, and reduce fuel costs for businesses, which is anticipated to lower prices for consumers. An additional $1 million is included in the President's request for this work. The budget also includes a $4.2M increase to enhance vehicle, engine and fuel compliance programs, including critical testing capabilities, to ensure compliance with emission standards.

Protecting the Nation's Waters

Protecting America's water resources is a critical part of EPA's mission. In FY 2017, the agency will continue to build upon decades of work to ensure our waterways are clean and our drinking water is safe. There are far reaching effects when rivers, lakes, and oceans become polluted. Polluted waters can endanger wildlife, make our drinking water unsafe and threaten the waters where we swim and fish.

Building on the strong funding level of $2.0 billion provided through the Clean Water and Drinking Water State Revolving Funds, $42 million is included for loan financing, technical assistance, training, and other efforts to enhance the capacity of communities and states to plan and finance drinking water and

wastewater infrastructure improvements. Twenty million dollars and 12 staff will support the Water Infrastructure Finance and Innovation Act (WIFIA) program. WIFIA will expand water and wastewater infrastructure work by making loans for large innovative projects of regional or national significance. The WIFIA program will also work to support investments in small communities and promote public-private collaboration. The $15 million increase in the budget is the beginning of funding for WIFIA projects and the program is designed to highly leverage these funds. The Budget also provides $7.1 million for the Water Infrastructure and Resiliency Finance Center to continue helping communities across the country focus on financial planning for future public infrastructure investments, expanding work with states to identify financing opportunities for rural communities, and enhancing partnership and collaboration with the U.S. Department of Agriculture on training, technical assistance, and funding opportunities in rural areas. The Center is part of the Build America investment initiative, a government-wide effort to increase infrastructure investment and promote economic growth by creating opportunities for state and local governments and the private sector to collaborate on infrastructure development.

Taking Steps to Improve Chemical Facility Safety

In support of the White House Executive Order on Improving Chemical Facility Safety and Security, EPA is requesting $23.7 million for the State and Local Prevention and Preparedness program, an increase of $8.4 million above the FY 2016 enacted level. This increase will allow EPA to continue to improve the safety and security of chemical facilities and reduce the risks of hazardous chemicals to facility workers and operators, communities, and responders. These efforts represent a shared commitment among those with a stake in chemical facility safety and security: facility owners and operators; federal, state, local, tribal, and territorial governments; regional entities; nonprofit organizations; facility workers; first responders; environmental justice and local environmental organizations; and communities. In FY 2017, EPA will develop, initiate and deliver training to aid with expansive outreach and planning for local communities, emergency planners, and responders. This will assist local emergency planners and first responders in using the risk information available to them, educating the public about what to do if an accident occurs; and working effectively with facilities to reduce the risks associated with the chemicals that are stored, used, or produced on site.

Protecting Our Land

EPA strives to protect and restore land to create a safer environment for all Americans by cleaning up hazardous and non-hazardous wastes that can migrate to air, groundwater and surface water, contaminating drinking water supplies, causing acute illnesses and chronic diseases, and threatening healthy ecosystems. We preserve, restore, and protect our land, for both current and future generations by cleaning up contaminated sites and returning them to communities for reuse. Our funds will assist communities in using existing infrastructure and planning for more efficient and livable communities, and encouraging the minimization of environmental impacts throughout the full life cycle of materials.

In FY 2017, we will increase the Superfund Remedial program by $20 million to accelerate the pace of cleanups and fund additional construction projects, supporting states, local communities, and tribes in their efforts to assess and cleanup sites and return them to productive reuse, and encourage renewable energy development on formerly hazardous sites when appropriate. We also will expand the successful Brownfields program, providing grants, and supporting area-wide planning and technical assistance to maximize the benefits to the communities. In FY 2017, EPA is investing $90 million in funding for Brownfields Project grants to local communities, increasing the number of grants for assessment and cleanup of contaminated sites. The investment in Brownfields builds on the program's successful community-driven approach to revitalizing contaminated land and further supports the agency's efforts to make a visible difference in communities.

Ensuring the Safety of Chemicals and Preventing Pollution

EPA's chemical safety programs are integral to efforts to advance a sustainable future. In FY 2017, we are requesting a total of $679.6 million, an increase of $56.4 million over the FY 2016 Enacted Budget. EPA will work to expand the usage of computational tools, and increase and enhance the quality,

accessibility, and usefulness of information about commercial chemicals and pesticides, thereby strengthening the capability of EPA, other regulators, and the public to assess chemical hazards and potential exposures, identify potential risks to human health and the environment and take appropriate risk management action. EPA will work aggressively to complete additional risk assessments from the TSCA Work Plan list of existing chemicals and meet its requirement to review all current pesticide registrations by 2022.

In FY 2017, $5.9 million is requested to increase support for accelerated risk reduction work on TSCA Work Plan Chemicals where completed assessments have identified risks. The request supports efforts to address formaldehyde in pressed wood products and public concerns associated with the presence of PCBs in building materials in schools. In FY 2017, EPA's Office of Pesticide Programs will continue the important work initiated by the Presidential Memorandum Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators to reverse pollinator losses and help restore populations to healthy levels. EPA is committing $500,000 in funding to states to draft pollinator protection plans.

Continuing EPA's Commitment to Innovative Research & Development

Environmental issues in the 21st century are complex because of the interplay between air quality, climate change, water quality, healthy communities, and chemical safety. They require different thinking and solutions than those used in the past. In FY 2017, we will continue to strengthen the agency's ability to develop solutions by providing $512 million to evaluate and predict potential environmental and human health impacts for decision makers at all levels of government. Activities in the FY 2017 Budget include providing support tools for community health, investigating the unique properties of emerging materials, such as nanomaterials, and research to support the nation's range of growing water-use and ecological requirements.

Supporting State and Tribal Partners

Effective environmental protection is a joint effort of EPA, states and our tribal partners. In FY 2017, we are requesting an increase of $77 million in funding for State and Tribal Assistance categorical grants – for a total of $3.28 billion. Recognizing the value of aligning and leveraging our efforts, we are pursuing opportunities for closer collaboration with states and tribes, including targeted joint planning and governance processes. One example is our commitment to work collaboratively to streamline, reform, and integrate our shared business processes and related systems through the E-Enterprise approach. Joint State-EPA-Tribal governance serves to organize the E-Enterprise partnership and elevate its visibility, boost coordination capacity, and ensure the inclusiveness and effectiveness of shared process and management improvements. This has been successful and will continue to yield the benefits of increased transparency, efficiency, and burden reduction for communities, businesses, and government agencies.

Maintaining a Forward-Looking and Adaptive EPA

EPA has strategically evaluated its workforce and facility needs over the last several years. We will continue the comprehensive effort to optimize and update our physical footprint in FY 2017 and prioritize efforts to save taxpayer dollars through space optimization and essential renovations. These efforts will include important laboratory buildings across the country but without sacrificing high quality of research. Since FY 2012, EPA has released over 250 thousand square feet of office space nationwide, resulting in a cumulative annual rent avoidance of nearly $9.2 million across all appropriations. Additional planned consolidations and moves could release another 336 thousand square feet of office space. The agency will continue on-going work to improve processes and advance the E-Enterprise effort. The goals are leveraging technology, streamlining workflow, and improving data quality, and increasing data sharing and transparency. The agency also is making necessary investments to improve internal IT services to support productivity and address the issue of cybersecurity

Reducing and Eliminating Programs

EPA continues to examine its programs to find those that have served their purpose and accomplished

their mission. The FY 2017 President's Budget also eliminates a number of programs totaling $85 million. Details are found in the EPA FY 2017 Congressional Justification.

For more information on EPA's FY 2017 proposed budget, please visit:
http://www.epa.gov/planandbudget/fy2017

R019

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: US EPA Media Relations
Sent: Fri, 13 Jan 2017 12:55:12 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: First Time in 40 Years EPA to Put in Place a Process to Evaluate Chemicals that May Pose Risk

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
Cathy Milbourn (News Media Only)
Milbourn.cathy@epa.gov
(202) 564-7849

FOR IMMEDIATE RELEASE
January 13, 2017

For the First Time in 40 Years EPA to Put in Place a Process to Evaluate Chemicals that May Pose Risk

New chemical law requires the agency to look at chemicals that were grandfathered in under old law

WASHINGTON--The Environmental Protection Agency (EPA) is moving swiftly to propose how it will prioritize and evaluate chemicals, given that the final processes must be in place within the first year of the new law's enactment, or before June 22, 2017.

"After 40 years we can finally address chemicals currently in the marketplace," said Jim Jones, EPA's Assistant Administrator for the Office of Chemical Safety and Pollution Prevention. "Today's action will set into motion a process to quickly evaluate chemicals and meet deadlines required under, and essential to, implementing the new law."

When the Toxic Substances Control Act (TSCA) was enacted in 1976, it grandfathered in thousands of unevaluated chemicals that were in commerce at the time. The old law failed to provide EPA with the tools to evaluate chemicals and to require companies to generate and provide data on chemicals they produced.

EPA is proposing three rules to help administer the new process. They are:

Inventory rule. There are currently over 85,000 chemicals on EPA's Inventory, many of these are no longer actively produced. The rule will require manufacturers, including importers, to notify EPA and the public on the number of chemicals still being produced.

Prioritization rule. This will establish how EPA will prioritize chemicals for evaluation. EPA will use a risk-based screening process and criteria to identify whether a particular chemical is either high or low priority. A chemical designated as high-priority must undergo evaluation. Chemicals designated as low-

priority are not required to undergo evaluation.

Risk Evaluation rule. This will establish how EPA will evaluate the risk of existing chemicals. The agency will identify steps for the risk evaluation process, including publishing the scope of the assessment. Chemical hazards and exposures will be assessed along with characterizing and determining risks. This rule also outlines how the agency intends to seek public comment on chemical evaluations.

These three rules incorporate comments received from a series of public meetings held in August 2016.

If EPA identifies unreasonable risk in the evaluation, it is required to eliminate that risk through regulations. Under TSCA the agency must have at least 20 ongoing risk evaluations by the end of 2019.

Comments on the proposed rules must be received 60 days after date of publication in the Federal Register. At that time, go to the dockets at: https://www.regulations.gov/ and search for: HQ-OPPT-2016-0426 for the inventory rule; HQ-OPPT-2016-0636 for the prioritization rule; and HQ-OPPT-2016-0654 for the risk evaluation rule.

Learn more about today's proposals: https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/frank-r-lautenberg-chemical-safety-21st-century-act-5

Learn more about the Frank R. Lautenberg Chemical Safety for the 21st Century Act. https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/frank-r-lautenberg-chemical-safety-21st-century-act.

R015

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: Bandemehr, Angela
Sent: Thu, 22 Sep 2016 16:57:37 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: FW: desk report
Attachments: desk report Ch 2.docx, desk report outline 9-8-2016.docx

Did Mary Jean share these with you?

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: mary jean brown [mailto:(b) (6) [redacted]
Sent: Wednesday, September 14, 2016 10:32 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: desk report

Hi,
I have expanded and recast the first 2 chapters of the desk report. Henry started to review but then a new granddaughter came into his life and so he's out of the picture for a few days. If you can please take a look especially to see if I've left anything out. Then I can revise with your comments, anyone else at EPA who might have some suggestions and Henry's before we send over to Ernesto. Any more going on with him?
Best, Mary Jean

Chapter 2: Lead in Paint

Extent of the Problem

a. The World Bank describes lead as the most important metal pollutant for health globally given its widespread distribution at concentrations that may damage health *and* ranks lead exposure as fifth in environmental health risks in developing countries in terms of premature deaths. (Environmental and Natural Resources Global Practice Discussion #3 'Clean Air and Healthy Lungs')

b. In countries with widespread use of lead paint but that no longer use leaded petrol, contaminated dust may be the main source of exposure for infants and young children. The weathering, peeling or chipping of lead-based paints plays a role in children's exposure, especially as some young children eat the fragments or lick dust-laden fingers. (WHO, 2010) The rising middle class and very rapid growth of paint sales for home uses in most developing countries, will cause exposure from lead paints to grow unless meaningful control measures are taken. (WHO) Thus, for countries where the use of lead paint is not widespread, should the use of lead paint increase, it can be expected to replace leaded gasoline as the source of lead in a significant number lead poisoned children.

c. In countries which have historically used lead paint in housing an estimated 74% of these houses have lead paint hazards or soil and dust hazards that arise from lead paint. Children living in these houses are 4 times more likely to have a high blood lead level than children living in houses not painted with lead paint. (Swartz) In these countries lead paint is estimated to cause 66% of elevated blood lead levels. (See – map of where lead paint is sold: to be updated)

d. An international pooled analysis estimated the relationship between children's blood lead level and exposure to lead in settled house dust and soil in areas where lead gasoline had been eliminated. These two media were found to be the strongest predictors of childhood blood lead level (water lead and lead paint condition were also significant). The pooled analysis showed that, holding soil lead and other variables constant at a national average, an increase in floor dust lead from 1 $\mu g/ft$ to 100 $\mu g/ft^2$ increases geometric mean blood lead levels in children from 2.8 $\mu g/dL$ to 7.3 $\mu g/dL$. Holding interior floor dust lead constant at 5 $\mu g/ft^2$, an increase in soil and exterior dust lead from 10 ppm to 1,000 ppm, a concentration not uncommon in soil adjacent to houses with lead painted exterior, increases blood lead levels from 3.2 to 5.3 $\mu g/dL$. (Lanphear)

Global Prevalence of Lead Paint

a. In studies conducted in 21 countries in South American, the Pacific Rim, South and Southeast Asia, and Africa between 2009 and 2013, the average lead concentration of tested paint ranged from 5,870-61,900 ppm 20 countries. In these studies, concentrations above 10,000 were not uncommon and most paints tested had concentrations of lead ≥ 90 ppm, indicating that lead had been added to the product. In only one of the 21 one countries, Uruguay, was the lead content low averaging 9.8 ppm. Nonetheless in many of these countries non-leaded paints were also available. (IPEN, 2014)

Commented [mjb1]: Is it possible to get the table in Slide 15 of Sheila Logan's presentation in New Delhi?

b. In another study where 95 samples were taken from cans labelled 'lead free', 19 samples had lead concentrations ranging from 230-56,000 ppm, indicating that lead had been deliberately added to the product. (IPEN, 2014)

c. In recent studies conducted by UNEP, in a total of 128 countries lead paint was easily available in most parts of the countries. (Kessler, 2014)

d. Distribution of leaded paint by US companies should be discussed.

e. 'Leakage' of industrial paints into residential market.

Improving Children's Futures through the Global Elimination of Lead Paint

Proposed Outline for Review and Comments

September 14, 2016

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Organization of this draft: following discussion with EPA, CDC and Bank staff this draft builds on the previous 2 drafts.

Chapter 1 will focus on using international estimates of prevalence, costs and benefits where ever possible and extrapolate from the US experience only when necessary. (CDC lead subject matter expert)

Chapter 2 will use data from IPEN report and others to estimate the prevalence of lead paint internationally and case studies prepared by the Global Alliance to Eliminate Lead Paint. (CDC/EPA lead subject matter experts)

Chapter 3 renamed "National Regulatory Frameworks to Eliminate Lead in Paint" will describe the inadequacy of some solutions to eliminate lead based paint namely increasing its cost and voluntary standards (this based on both the India and US experience) and the limitations of labelling. Case studies from the Philippines, Uruguay and other countries who have successfully developed regulatory platforms will be presented. Recommendations/suggestions/considerations/models of laws and will be described. (EPA lead subject matter expert)

Chapter 4 is a proposed new chapter that will describe a menu of policy options available for the short, mid and long-term as well as the tools available to the World Bank and for regional development banks to advance the elimination of lead paint globally will be presented. (World Bank lead subject matter expert)

Chapter 1: Status of Childhood Lead Poisoning Globally

a. Health Effects of Childhood Lead Exposure

a. Lead exposure is estimated to account for 143,000 deaths per year, 4% of the global burden of ischemic heart disease, and 5% of the global burden of stroke. This significant health burden is highest in developing regions. According to the World Health Organization (WHO), lead exposure is estimated to contribute to about 600,000 new cases of children developing intellectual disabilities every year. WHO lists lead poisoning among the 10 diseases with the largest environmental contribution and the only one with a wholly environmental cause. Notably these estimates do not include the acute outbreaks of lead poisoning that have occurred in China, Senegal, Zambia and Nigeria. Nor do they project future increases in disease and disabilities as the use of lead increases.

b. A substantial and compelling body of scientific evidence has established that lead has a profound negative effect on fetal, infant and child development. No 'safe' blood lead level

in children has been identified. Even at blood lead levels that are low by historic standards, lead can directly affect children's life performance through its impact on IQ, attention span, impulse control and, perhaps most notably, executive function. This can be a staggering loss to individual children and their families. (See Figure 1 – test tube indicating health effects corresponding to levels of lead in blood).

c. Although the effects if blood lead levels in the range of 5-15 ug/dL, may not predict the later academic performance or life success of an individual child, the population-wide effects of lead are not only predictive but extensive. Shifting the mean IQ of a population by as little as 5 points results in increasing by >50% the number of children with IQs < 75, which is often used to define individuals as intellectually disabled or mildly mentally retarded. This causes staggering losses to communities and countries. In the developing world, these losses of IQ at the population level will limit economic development and growth in economies increasingly requiring highly skilled workers. (See Figure 2).

d. Lead effects both cognitive ability and behavior. Although the data from the United States has been most the extensive, the IQ loss, historic trends in such disparate indicators as height and teen pregnancy and correlation between ambient lead contamination and violent crime and incarceration rates have also been demonstrated in Columbia, Brazil, Mexico, Venezuela, Britain, Australia, Canada and New Zealand.

e. Ambient lead contamination both from gasoline emissions and from the use of residential lead paint has been also been well studied in the US. Using these data it is possible to estimate the future impact of the use of residential lead paint in countries where there is an emerging demand for decorative paints, if we are unsuccessful in removing lead paint from commerce. For example, Nevin found that the US homicide rates from 1900-1998 was correlated with the rise and fall of per capita use of lead in paint and gasoline from 1879-1987, with preschool lead exposure affecting the homicide rate with a 21-year lag. The US homicide rate fell by 52% from 1991 to 2014 following the 1978 ban on residential lead paint. This includes a 26% decline from 1998-2014. (Nevin, 2000)

B. Exposure

a. Young children, because of their frequent hand to mouth behaviors, immature blood-brain barrier, rapidly developing nervous system and more efficient absorption of lead through the gastrointestinal track, are at much higher risk for lead exposure than adults and older children in the general population. Once children are exposed most of the lead they absorb is sequestered in bone where it can remain for years to decades. The lead stored in bone is mobilized during periods of high calcium demand such as pregnancy, lactation, adolescent

growth spurt and senescence. Mobilization of bone stores during pregnancy can result in transfer of lead from the mother to the developing fetus thus harming another generation. In a study in Lima, Peru in 2013, researchers found that in 16% of newborns, the blood lead levels were ≥ 5μg/dl.

b. The sources of lead exposure vary among and within countries depending on past and current uses. Sources of lead may be from historic contamination, recycling old lead products or from the manufacture of new products. In all countries that have banned leaded gasoline, average population BLLs declined rapidly. In many developing countries where leaded gasoline is no longer used, large numbers of children and workers are exposed to fugitive emissions and mining wastes. Unexpected lead threats continue to emerge, such as improper disposal of electronics and children's toys contaminated with lead. As the use of leaded gasoline is banned in most countries, lead in paint has become a dominate, emerging and highly concentrated source of lead. Young children are particularly vulnerable to exposure to lead paint as it weathers and is incorporated into house dust and exterior soils, when paint chips are present in the home environment and can easily be ingested and when renovation and repair projects release toxic lead dust into the environment.

C. Costs and Benefits of Preventing Lead Poisoning in Children

a. The economic burden associated with childhood lead exposure was estimated as 1.20% of world GDP. Low- and middle-income countries disproportionately carry this burden. The total estimated global economic lost was calculated as US $977 billion mainly suffered by poor and medium income countries (Figure 14). The major lost suffered by Asia amounting to $699.9 billion (1.88% of GDP), for Africa equivalent to $134.7 billion (4.03% of GDP) and for Latin America and the Caribbean $142.3 billion (2.04% of GDP) (Attina and Trasande 2013, 1097) For comparison, in the United States and Europe lead-attributable economic costs have been estimated at $50.9 and $55 billion, respectively, suggesting that the largest burden of lead exposure is now borne by low- and middle-income countries (Attina and Trasande 2013, 1097), (UNEP 2013, 28) The estimated total financial loss lies between $728.6 - 1162.5 billion (Attina and Trasande 2013, 1097).

b. In addition, a recent study estimated that the population-wide loss of IQ points resulting from lead exposure costs low- and middle-income countries $977 billion annually in decreased productivity, with each IQ point lost costing a child an estimated 2% of their lifetime earning potential.[49] At the individual level a 2% loss of earning potential may not seem significant. At the population level the impact is enormous.

c. In Africa, Egypt and South Africa have experienced the greatest losses in economic productivity estimated at $17.8 and 17.7 billion respectively or 4% of the African purchasing power parity adjusted gross domestic product (PPP GPD). Eastern and Southeast Asia suffered the most productivity within Asia with loses estimated at $227 and $236 billion in China and India respectively. In South America, Latin American and the Caribbean are where the greatest losses have been experience with an estimated loss of $33 billion in Brazil alone.

d. As overwhelming as the IQ and related productivity losses are, the behavioral effects of lead exposure, in particular its effects on impulse control and executive function and the associated increase in delinquency and criminal behavior, are perhaps more costly. Little data for the effects and costs of criminality are available for the developing world. Extrapolation from estimates of these costs in the developed world introduces a degree of uncertainty. Nonetheless, from the existing data and the historical record we can expect that continued exposure to lead, especially in countries with maturing economies will produce effects similar that seen in the developed world over the last century. For example, in 2015 Venezuela had second highest murder rate in South America. Since leaded gasoline was not banned in that country until 2005, the full effects of reducing lead exposure in early childhood has not yet been realized in Venezuela. While lead paint exposure is and, most likely will not be as pervasive as exposure to gasoline emissions, as the US experience in urban centers demonstrates, the effects of lead paint will be extensive and enduring. In the European region it has been estimated that 66% of the adverse health effects of exposure to lead are due to lead based paint, lead paint contaminated house dust and soil and lead in water. No country specific estimates are available for countries with developing economies. However, in the US it has been estimated that controlling or eliminating lead based paint hazards in the 24 million existing homes will cost $ 20 billion. (Presidential Task Force on Environmental Health Risks to Children, 2000)

e. Despite the enormous cost of making US housing lead free, the estimated related benefits for avoiding future costs are even higher. These include $11-53 billion in saving for health care costs, $30-146 billion in special education, $165-233 billion in future earnings, an increase in tax revenues of $25-35 billion, $267 million in avoided cases of attention deficit disorder and $1.7 billion in costs to the criminal justice system for each cohort of children 0-6 years of age for whom lead exposure is prevented. (Gould, 2009) Countries which move quickly to ensure that the use of lead paint does not become widespread can expect to reap all of these benefits without incurring the costs described above.

Childhood lead poisoning is completely preventable through control or elimination of sources of lead in children's environments. Preventing lead exposure in young children

makes economic sense. Preventing lead exposure in young children build strong families and communities.

Citations for Chapter 1: Section A

Commented [A1]: I will add to this

The health effects of lead have been well summarized in the following documents:

i. NTP Monograph on Health Effects of Low-Level Lead National Toxicology Program-National Institute of Environmental Health Sciences; National Institutes of Health 2012. *Summarizes effects of blood lead levels considered low by historical standards.*

ii. CDC Educational Interventions for Children Affected by Lead; CDC Atlanta GA April 2015.-*Summarizes the evidence of poor academic performance in US children with high blood lead levels.*

iii. CDC Guidelines for the Identification and Management of Lead Exposure in Pregnant and Lactating Women. US Department of Health and Human Services Nov. 2010.-*Summarizes health effects of prenatal lead exposure on fetal and infant development.*

iv. Lanphear et al. 2005 Low-level environmental lead exposure and children's intellectual functioning; an international pooled analysis, Environ Health Perspect 113:894-899 -*Meta-analysis using data from studies in several countries to estimate the impact of high blood lead levels on IQ.*

The sources of lead in children's environments have been well described in the following:

i. Environmental Health Perspective. Lead in Decorative Paint. 2122;4 April 2014. *A country by country description of the availability and dangers of lead paint.*

ii. Amitai Y, Brown MJ, Graef J, Cosgrove, E. Effects of Deleading on the Blood Lead Levels of Lead Poisoned Children. Pediatrics 1991; 88: 893-897.

iii. Meyer P, Brown MJ, Falk H. Global approaches to reducing lead exposure and poisoning. Mutation Research-Reviews in Mutation Research. 2008;659:166-175. *Description of the many and varied sources of lead worldwide and recommendations on their control or elimination.*

iv. Levin R, Brown MJ, Kashtock ME, Jacobs DE, Whelan EA, Rodman J, Schock MR, Padilla A, Sinks T. 2008. US Children's Lead Exposures, 2008: Implications for Prevention. Environ Health Perspect 2008;116:1285-1293.

The sources and impact of various lead sources on blood lead levels in US children.

v. UNEP Lead in Enamel Decorative Paints *A nine country study of the availability of lead paint in countries with developing economies*

vi. WHO Environmental Burden of Disease Associated with Inadequate Housing *Ch. 3 Health effects of lead in housing.*

The costs and burdens of lead have been well described in the following:

i. Fewtrell L, Kaufmann R, Prüss-Üstün A. Lead: assessing the environmental burden of disease at national and local level. Geneva, World Health Organization, 2003 (WHO Environmental Burden of Disease Series, No. 2). *Estimates the impact of elevated blood lead levels internationally*

ii. Attina and Trasande 2013, Economic costs of childhood lead exposure in low and middle income countries; Environ Health Perspect 121:1097-1102. *Estimates the costs of economic losses related to lead worldwide by region.*

WHO Childhood Lead Poisoning 2009.

iii. Gould E. 2009 Childhood lead poisoning: Conservative estimates of the social and economic benefits of lead hazard control; Environ Health Perspect 117:1162-1167.

From: Bandemehr, Angela
Sent: Fri, 25 May 2018 11:47:31 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Henry Falk
Cc: Marzouk, Evonne;Mccann, Ellie
Subject: Fw: Examples of false "lead-free" labeling
Attachments: False lead free labels.pptx

Hi Henry!
In addition to all the information Evonne sent you, here is something we just received this morning from Sara at IPEN, an Alliance partner. She pulled together all the references to mis-labelling from the IPEN studies. These are based on the IPEN market studies conducted in developing countries. IPEN designs the study to specifically seek out paint with lead in it that is on store shelves to raise awareness about lead paint.
I thought this information might be good background to back up our statement that labelling does not work well.
Best,
Angela
Angela Bandemehr, MSEE
International Program Manager
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US Environmental Protection Agency
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Washington, DC 20460
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From: Sara Brosché <sarabrosche@ipen.org>
Sent: Friday, May 25, 2018 5:49 AM
To: Bandemehr, Angela
Cc: Mccann, Ellie; Huber, Patrick; Sellars, Shayna; Harrington, Glenn; Cappuccilli, Eva; Wolfson, Steve
Subject: Examples of false "lead-free" labeling

Hi Angela,
Attached is a PP with examples of paints with lead-free type labeling that contained high levels of lead. Labeling on cans is typically very sparse with no production date, website for the manufacturer or similar. We have a few examples of paints warning about the lead content but they are very rare.
There are some regional differences where paints in the EurAsian region seem to have less labeling in general. We have too few studies in Latin America to draw any conclusions, but false labeling is very common both in Africa and Asia.
Just let me know if you have questions and enjoy your long weekend!
Best,

Sara

Sara Brosché, PhD
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African examples

- Cameroon (2017): A paint with “lead below 90 ppm” contained 26,000 ppm lead http://ipen.org/documents/lead-solvent-based-paints-home-use-cameroonKenya (2017): 2 “lead-free” paints contained 2,300 and 160,000 ppm of lead http://ipen.org/documents/lead-solvent-based-paints-home-use-kenyaMorocco (2017): 57,000 ppm lead in an “unleaded paint” paint http://ipen.org/morocco-lead-paint

Asian examples

- Malaysia (2016): Three paints labeled “no added lead” contained 2,500, 12,000 and 58,000 ppm lead http://ipen.org/documents/lead-new-enamel-household-paints-malaysiaPakistan (2017): ten paints labelled “lead free” contained concentrations between 1,200 ppm and 110,000 ppm lead http://ipen.org/pakistan-lead-paintThailand (2015): six paints labeled “lead-free” contained lead above 90 ppm, four of them levels ranging from 26,000-59,000 ppm lead http://ipen.org/documents/national-report-lead-

Latin America examples

- Argentina (2017): A paint labeled “no added lead” contained 9,900 ppm lead http://ipen.org/documents/argentina-lead-paintColombia (2017): A paint labeled “lead-free” contained 570 ppm lead http://ipen.org/documents/lead-solvent-based-paints-home-use-colombia

EurAsia examples

- Armenia (2016): A paint labeled “no added lead” contained 1,100 ppm lead http://ipen.org/documents/lead-solvent-based-paints-home-use-armeniaKazakhstan (2016): A paint labeled “no added lead” contained 660 ppm lead http://ipen.org/documents/lead-solvent-based-paints-home-use-kazakhstanKyrgyzstan (2016): Two paints labeled "Environmentally friendly clean product” contained 1,100 and 1,800 ppm lead and two paints labeled “No toxic materials” contained 2,500 and 11,000 ppm lead http://ipen.org/documents/lead-solvent-based-paints-home-use-kyrgyzstan

From: Bandemehr, Angela
Sent: Tue, 6 Sep 2016 14:11:10 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Fw: Follow up to call on Interagency Coordination - EPA-CDC
Attachments: Lead Paint Law Model Language EPA draft 08 10 16.docx, Draft EPA WB SOI May 16 2016 for WB review.docx

If you have not already, you may want to send this to Helen. I am having internet problems and can't find her email right now.
Thanks,
Angela

Angela Bandemehr, MSEE
International Program Manager
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Website: http://www.epa.gov/international

From: Bandemehr, Angela
Sent: Tuesday, August 16, 2016 12:51 PM
To: pjb7@cdc.gov; dfs4@cdc.gov
Cc: Mccann, Ellie; Sims, JaniceHQ; Smith, Walker; buo1@cdc.gov; Huber, Patrick; dbk2@cdc.gov; Henry Falk (hxf1@cdc.gov)
Subject: Follow up to call on Interagency Coordination - EPA-CDC

Hi Pat and Donna:
Thanks for the great call today and for your ongoing support for working with EPA on the Lead Paint Alliance. We look forward to getting to know the CDC staff person that will be working with us on this, in addition to Henry.

I have written up the issues we discussed and made some suggestions for follow up action items for EPA and CDC that we think would be helpful at this time. Please let me know if this is along the lines of what you were envisioning.

(b) (5) [redacted]

(b) (5)

If you have any further questions or comments, please do not hesitate to contact me. We are looking forward to our continued cooperation.
All the best,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

EPA draft 8-10-16

Annotated Model Language for Developing Laws to Limit Lead in Paint

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[World Bank Logo Here]

DRAFT 5-13-16
Statement of Intent between the
U.S. Environmental Protection Agency and the World Bank Group

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From: Bandemehr, Angela
Sent: Wed, 7 Sep 2016 12:22:51 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie
Subject: FW: Ideas for TORs for lead paint desk brief

FYI for todays pm call.

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Thursday, September 01, 2016 9:12 AM
To: 'Ernesto Sanchez-Triana' <esancheztriana@worldbank.org>; Shafick Hoossein <shoossein@worldbank.org>
Cc: Ellie McCann <Mccann.Ellie@epa.gov>; Henry Falk (hxf1@cdc.gov) <hxf1@cdc.gov>; Sims, JaniceHQ <Sims.JaniceHQ@epa.gov>
Subject: Ideas for TORs for lead paint desk brief

Hi Ernesto and Shafick:
Please find below some ideas for the contractor TORs. I discussed these with CDC. We based our discussion specifically on how to finalize the report chapters. You may want to reorganize the tasks in different categories. But this is what we recommend needs to be done.

Chapter 1: Health

- Make changes to the chapter based on the comments provided by CDC (CDC will provide an outline for how to restructure the chapter)
- Conduct analysis to estimate health care costs in developing countries that may result from exposure to lead in paint in homes (based on US data)

Chapter 2: Sources and actions

- Update the chapter to reflect the latest status of actions and knowledge about best practices, such as of Lead Paint Alliance activities (EPA to provide some edits)
- Review text, especially use of references (some references are secondary) and rewrite accordingly

Chapter 3: Recommendations for policy actions

- Revise chapter, including Incorporating comments by EPA

Chapter 4:

- Develop recommendations for World Bank actions – e.g., through conducting meetings with World Bank staff, research on World Bank actions, etc.
- Revise and write text

General tasks

- Coordinate input to the report (e.g, from World Bank staff, EPA, other reviewers)
- Develop drafts
    - First draft
    - Final draft
- Develop final report
    - Print ready
    - Edited
    - Online version?

I hope you find this useful.

Best,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Leonard, Darlene
Sent: Fri, 9 Sep 2016 19:24:33 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Cappuccilli, Eva;McKissick, Stephane Z, (CDC/ONDIEH/NCEH) (CTR)
Subject: FW: Insert Page for Protect Your family
Attachments: Protect Your Family Update#2_9 6 16.docx

Henry Falk,
Your email came back undeliverable because I had cdd instead of cdc in the email address. My apologies for the delay!

Darlene Leonard
US Environmental Protection Agency
Office of Chemical Safety and Pollution Prevention
1200 Pennsylvania Avenue, NW
Washington, DC 20460
202-566-0516

From: Leonard, Darlene
Sent: Friday, September 09, 2016 12:31 PM
To: 'Friedman, Warren' <Warren.Friedman@hud.gov>; 'KHatlelid@cpsc.gov' <KHatlelid@cpsc.gov>; 'hxf1@cdd.gov' <hxf1@cdd.gov>; 'hhs0@cdc.gov' <hhs0@cdc.gov>
Cc: Cappuccilli, Eva <cappuccilli.eva@epa.gov>
Subject: RE: Insert Page for Protect Your family

Please see the attachment which contains expanded language developed by our EPA Office of Groundwater & Drinking Water that will replace the existing language about lead in water in our Protect Your Family document. Please indicate concur (hopefully everyone will!) or if you have any edits **on or before Friday September 23, 2016.**
I thank you in advance for your prompt response.

Darlene Leonard
US Environmental Protection Agency
Office of Chemical Safety and Pollution Prevention
1200 Pennsylvania Avenue, NW
Washington, DC 20460
202-566-0516

From: Leonard, Darlene
Sent: Thursday, June 23, 2016 3:21 PM
To: Mary Jean Brown <mjb5@cdc.gov>; Friedman, Warren <Warren.Friedman@hud.gov>; 'KHatlelid@cpsc.gov' <KHatlelid@cpsc.gov>
Cc: Shannon, Julie <Shannon.Julie@EPA.GOV>; Cappuccilli, Eva <cappuccilli.eva@epa.gov>
Subject: Insert Page for Protect Your family

Hello Federal Family,
Just wanted to let CDC, CPSC, and HUD know that we are preparing an insert sheet on lead in drinking water for the Protect Your Family pamphlet. After the Flint, MI crisis and similar situations in other cities, we recognized that we needed to provide the public with a little more information on lead in drinking water in our most widely distributed document that speaks to lead in general. We are not revising the document at this time since there's so many copies already in printed form. This is simply a supplement sheet. I'll share the sheet with you once it is developed. But for right now, just wanted to give you a "heads-up." Stay tuned…

Darlene Leonard
US Environmental Protection Agency
Office of Chemical Safety and Pollution Prevention
1200 Pennsylvania Avenue, NW
Washington, DC 20460
202-566-0516

PROTECT YOUR FAMILY UPDATE

Proposed Text for Page 13 of Protect Your Family document:

Lead in Drinking Water

The most common sources of lead in drinking water are lead pipes, faucets and fixtures.

Lead pipes are more likely to be found in older cities and homes built before 1986.

You can't smell or taste lead in drinking water.

- The only way to know if you have lead in your drinking water is to call your water company or have your water tested.
- If you own a private well, determine if you have lead pipes.

Steps You Can Take to Reduce Lead in Drinking Water

- Only use cold water for drinking, cooking and making baby formula. Remember, boiling water DOES NOT remove lead from water.
- Run water for 30 seconds to 2 minutes before drinking it, especially if you have not used your water for a few hours.
- Regularly clean your faucet's screen (also known as an aerator).
- Consider using a filter certified to remove lead.
    - Don't forget to read the directions to learn when to change the cartridge.
    - Using a filter after it has expired can make it less effective at removing lead.
- Determine if the pipe that connects your home to the water main (e.g. lead service line) is made from lead by contacting your water company.
    - You can find out who your water company is by looking at your latest water bill.

For more information about lead in drinking water please contact EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Call your local health department or water company to find out about testing your water, or visit epa.gov/safewater for EPA's lead in drinking water information. Some states or utilities offer programs to pay for water testing for residents. Contact your state or local water company to learn more.

Current Language in Protect Your Family document:

While paint, dust, and soil are the most common sources of lead, other lead sources also exist:

- **Drinking water.** Your home might have plumbing with lead or lead solder. You cannot see, smell, or taste lead, and boiling your water will not get rid of lead. If you think your plumbing might contain lead:
    - Use only cold water for drinking and cooking.
    - Run water for 15 to 30 seconds before drinking it, especially if you have not used your water for a few hours.

Call your local health department or water supplier to find out about testing your water, or visit epa.gov/lead for EPA's lead in drinking water information.

From: Bandemehr, Angela
Sent: Wed, 21 Mar 2018 17:33:11 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: FW: Lead exposures
Attachments: Lead exposure pathways and impact - an expect opinion in five countries March 12 2018 FINAL RF.docx, Lead Risk Estimate for select countries FINALV4.xlsx

Hi Henry:
Here is the Pure Earth paper, which is being sent around to UNEP and to the World Bank and we are working to provide an update to explain the lead paint piece.

Would appreciate any information you can find out from Phil about the methodology used to reach the conclusions in this paper and why they are saying that lead paint has been solved.

Appreciate this being close hold.

Thanks!
Angela

From: Smith, Walker
Sent: Friday, March 16, 2018 5:14 PM
To: Jacob Duer <jacob.duer@un.org>; Ernesto Sanchez-Triana <esancheztriana@worldbank.org>
Cc: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: FW: Lead exposures

Dear Jacob and Ernesto,

I wanted to let you know that we are developing a paper that addresses the question of why lead paint is a major pathway for lead exposure in the developing world. We think this is important because some of the assertions in this report are incorrect and "paint" an inaccurate picture about the problem of lead paint exposure. This paper will be important messaging for the Lead Paint Alliance, and won't be responding to the Pure Earth paper but will explain the importance of addressing lead paint. In the meantime, please let Angela or I know if you have any questions.

Best regards,

Walker

Walker B. Smith
Director
Office of Global Affairs and Policy
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
202.564.4044

From: Richard Fuller [mailto:fuller@pureearth.org]
Sent: Tuesday, March 13, 2018 6:15 PM
To: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Jacob Duer <Jacob.DUER@unep.org>; Smith, Walker <Smith.Walker@epa.gov>
Cc: Rachael Vinyard <rachael@pureearth.org>; Bret Ericson <bret@pureearth.org>
Subject: Fwd: Lead exposures

All

Forgive me if you already received this- I am working off an iPad in Melbourne.

Jack and his local counterparts made professional estimates of likely exposures to lead from various sources, in five countries where we have extensive experience.

It is the starting point for a proper source apportionment study, and extremely interesting in its own right. And when taken together with the new Lanphear study on mortality, frankly quite frightening.

Best

RF

PURE EARTH
BLACKSMITH INSTITUTE

A Review of Exposure Pathways to Lead in Low and Middle-Income Countries

Jack Caravanos, Clinical Professor NYU and Director of Research, Pure Earth.
jack@nyu.edu
March 2018

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From: Bandemehr, Angela
Sent: Fri, 1 Jun 2018 18:23:23 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Marzouk, Evonne
Subject: FW: Roundtable on Eliminating Lead in Paints
Attachments: EPA LPA Presentation for UNEA3 Science Forum.pptx

Hi Henry!
Note that I think we provided the same slides I sent you to the embassy as well (my fault, I was not paying attention). So you may not have to give as much of this background.

Wanted you to know in advance. Sorry for any potential confusion.

Angela

From: Marzouk, Evonne
Sent: Wednesday, May 30, 2018 6:19 PM
To: Mercurio, Cristina <Mercurio.Cristina@epa.gov>; Ashley, Chuck H <AshleyCH@state.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Hill-Macon, Cam <Hill-Macon.Cam@epa.gov>
Cc: Howell, Deborah J <HowellDJ@state.gov>
Subject: RE: Roundtable on Eliminating Lead in Paints

Thank you, Chuck! It is wonderful to hear that this is coming together.

I have attached a presentation delivered by Walker Smith, EPA Office Director for Global Affairs and Policy, at UNEA3 about lead paint and the Alliance.

I may be able to share additional information tomorrow, but wanted to get this to you as soon as possible.

Best wishes
Evonne

From: Mercurio, Cristina
Sent: Wednesday, May 30, 2018 11:55 AM
To: Ashley, Chuck H <AshleyCH@state.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Hill-Macon, Cam <Hill-Macon.Cam@epa.gov>
Cc: Howell, Deborah J <HowellDJ@state.gov>
Subject: RE: Roundtable on Eliminating Lead in Paints

Hi Chuck,

This is very exciting and thanks so much for setting this up.

I'm sure Evonne and others will have slides they can provide on EPA's involvement in the Alliance and the support of Alliance partners in assisting countries to get to lead-free paint.

Please let us know if there's anything else we can provide and I look forward to hearing how it all goes.

All the best.

Cristina

Cristina Mercurio
Middle East and North Africa Program Manager / Brazil Program Manager
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
Tel. 1-202-564-6481
E-mail: mercurio.cristina@epa.gov

From: Ashley, Chuck H [mailto:AshleyCH@state.gov]
Sent: Wednesday, May 30, 2018 9:36 AM
To: Mercurio, Cristina <Mercurio.Cristina@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Hill-Macon, Cam <Hill-Macon.Cam@epa.gov>
Cc: Howell, Deborah J <HowellDJ@state.gov>
Subject: Roundtable on Eliminating Lead in Paints

Dear EPA colleagues,

In cooperation with Tamar Berman at MOH, I've lined up a roundtable event on eliminating lead in paints at the American Center in Jerusalem on June 5 at 10:00 Israeli time. Dr. Henry Falk will be our featured expert speaker.

As the host and the non-scientist, I plan to give welcoming remarks, explains the genesis of the roundtable, briefly outline the Global Alliance to Eliminate Lead Paints, and emphasize EPA's support for the alliance and its cooperation with partners to achieve the goals of the alliance. If oyu have any slides that you can share with me or any info I should have other than what's on the EPA web site, please send it my way.

Thank you very much for your assistance in making this happen. I plan to take notes and send you a readout of the discussion.

Cheers,

Chuck Ashley

Environment, Science & Technology, and Health Affairs Officer
U.S. Embassy Jerusalem – Branch Office Tel Aviv
Mobile: +972-50-574-9837
Office: +972-3-519-7478
E-mail: ashleych@state.gov
Internet: http://israel.usembassy.gov/

Official
UNCLASSIFIED

Global Alliance to Eliminate Lead Paint

Eliminating Childhood Exposure to Lead Paint

Overview of the Global Alliance to Eliminate Lead Paint

Walker B. Smith
Director, Office of Global Affairs and Policy, US Environmental Protection Agency
Chair of the Lead Paint Alliance

Lead is Poisonous

- Lead is harmful to health, especially for childrenLife-long consequences in children including serious and irreversible neurological damage and behavioral problemsGlobally lead in paint is the major source of childhood exposure There is no safe level of exposure to lead

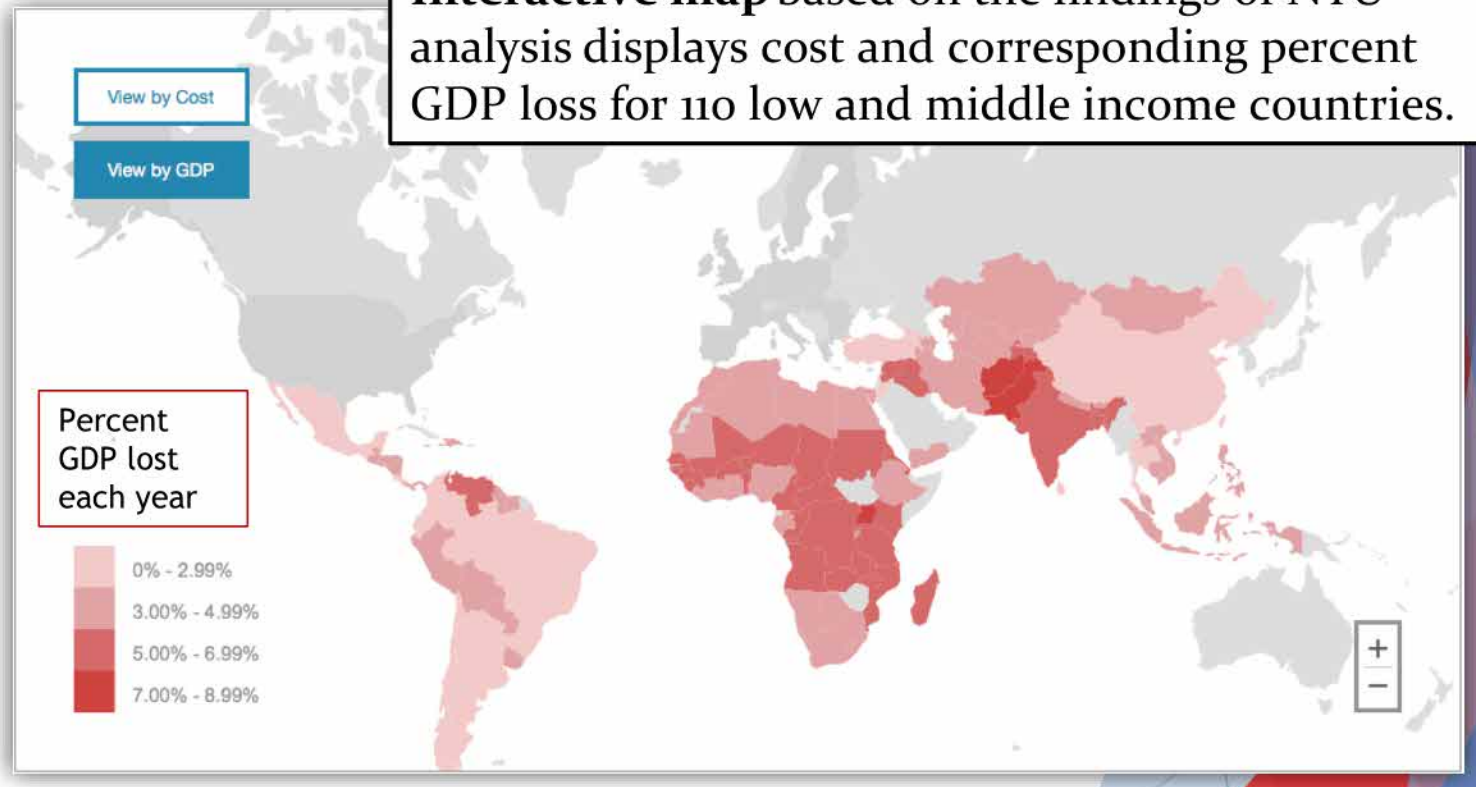
Lead Poisoning's Health and Economic Costs

Exposure to lead has permanent negative impacts to children's developing brains.Lifelong consequences are borne by the affected children, their families, and societies at large. One key impact: reduction in intelligence quotient (IQ), which can be correlated with decreases in lifetime earning potential.

High Cost of Lead Poisoning

Children's exposure to lead from all sources has staggering economic costs for countries.$977 billion cost for low and middle-income countries from children's lost IQ.

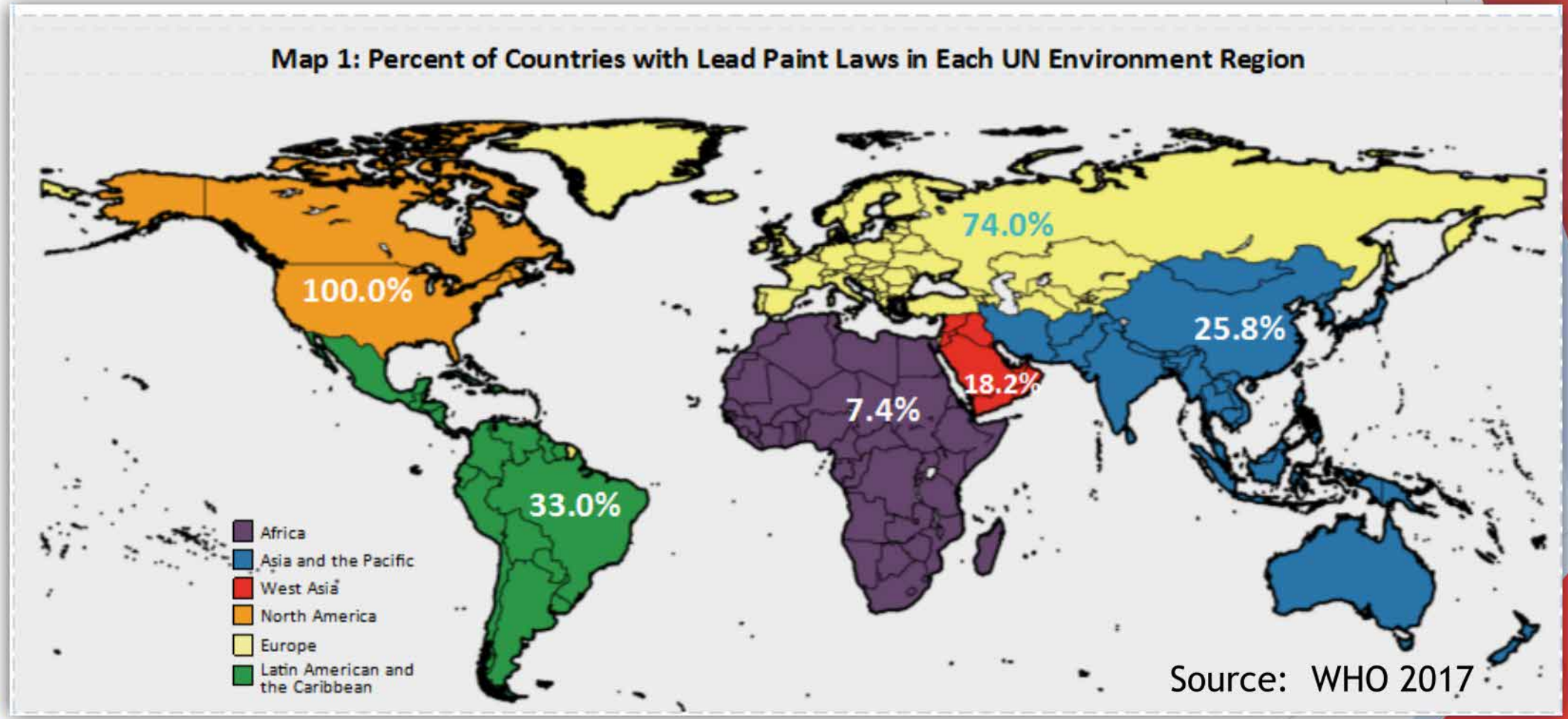
Interactive map based on the findings of NYU analysis displays cost and corresponding percent GDP loss for 110 low and middle income countries.



Source:
http://www.med.nyu.edu/pediatrics/research/environmentalpediatrics/leadexposure

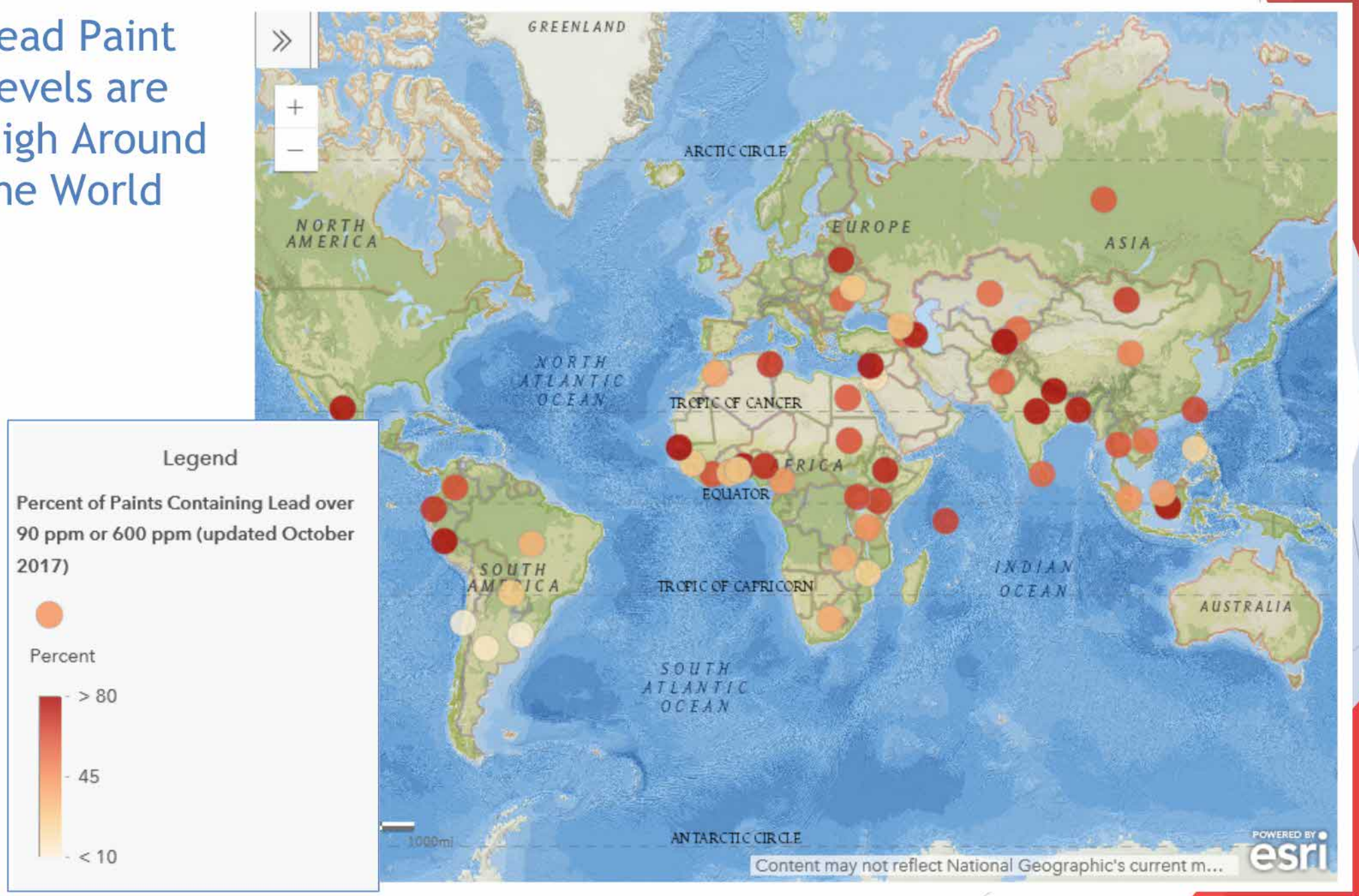
NYU School of Medicine
NYU LANGONE MEDICAL CENTER

Only 30% of countries have laws



Source: WHO 2017

Lead Paint Levels are High Around the World



About the Global Alliance to Eliminate Lead Paint

Lead Paint Alliance is a voluntary global partnershipLaunched by SAICM resolution in 2009Secretariat: UNEP and WHOChair of Advisory Council: US EPA Partners: Governments, NGOs and IndustryAlliance is modeled on successful Partnership for Clean Fuels and Vehicles efforts to eliminate lead in gasoline globally

Global Citizens
Earth Day 2015

Goal: Establish laws globally

Action Needed on Lead Paint Laws

- Countries in the developed world banned lead in paint in 1970s and ‘80s.However, in most of the developing world, lead paint is still legal.Lead compounds are added to paints to improve drying time and color brightness.Alternative paints without added lead are affordable and widely available.Voluntary labeling of paints is not a solution.Industry and governments agree: Solution is enacting lead paint laws in countries worldwide – 90 ppm limit (US Law).

Key Activities of Lead Paint Alliance

The Alliance developed an Action Plan for 2017-2018Main goal is to encourage countries to establish and enforce lead paint lawsAlso encourages industry activities, awareness raising and increasing the number of Alliance partnersProviding information and tools:Model Law and Guidance on Regulating Lead PaintRegulatory toolkit, which includes information about health and economic impacts, alternatives to lead paint, paint testing methods

Recent Momentum on Lead Paint

Model Law and GuidanceUNEP 2017 Global Status Update on LawsWHO Global Map on Status of Lead Paint LawsOther Materials and ToolsUNEA3 Commitment model languageWorld Health Assembly Roadmap Chemicals Roadmap (May 2017) – calls for action on lead paintNYU Map of Economic Impacts of Childhood Lead Poisoning (NYU School of Medicine)IPEN Global Map of Lead Paint Testing DataAmerican Bar Association Resolution on Lead Paint

Model Law and Guidance for Regulating Lead Paint

Governments requested guidance on a model for developing lead paint lawsIndustry and NGOs also supported the development of the model lawUN Environment developed the law with help from WHO, EPA and other Lead Paint Alliance partnersKey Features Low concentration limit for lead in paint (90 ppm total lead)Applies to all types of paints (consumer and industrial uses)Provisions for effective compliance and enforcementSimple to implement

Key Ongoing and Future Activities

EPA training of Environment, Science, Technology and Health officers in US Embassies by region (ongoing)Annual International Lead Poisoning Prevention Week of Action (since 2013)UNEA3 Science Forum Session on Lead PaintGovernment, NGO, industry UNEA3 commitments USG Resolution on lead paint (Argentina co-sponsoring)World Bank Report (March 2018 TBC)Current regional effortsWest Africa – draft regional waste strategy includes lead paintCaribbean - UN Environment / EPA / ABA Launch of Model Law in JamaicaCentral and Eastern Europe – US Department of Commerce Standards Officials Project and Eurasian Economic Union lead paint technical regulationGlobal Environment Facility Project on Lead Paint (2018-2020)

International Lead Paint ResourcesLead Paint Alliance: http://web.unep.org/chemicalsandwaste/what-we-do/technology-and-metals/lead/global-alliance-eliminate-lead-paint USEPA Lead Paint Alliance site: https://www.epa.gov/international-cooperation/epa-leadership-lead-paint-alliance WHO Map of Lead Paint Laws: http://www.who.int/gho/phe/chemical_safety/lead_paint_regulations/en/ World Health Assembly Chemicals Roadmap: http://www.who.int/ipcs/saicm/roadmap/e

From: Sinks, Tom
Sent: Mon, 23 Jan 2017 16:15:23 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: FW: Stan

Stan's contact information

From: Gentry, Nathan
Sent: Monday, January 23, 2017 11:15 AM
To: Sinks, Tom <Sinks.Tom@epa.gov>
Subject: Stan

stanmeiburg@gmail.com
404-409-6639

Additional info for Tom Burke: taquinasburke@gmail.com, 410-979-9270

Nathan Gentry
Scheduler for Bob Kavlock, Chris Robbins and Bruce Rodan
Assistant Deputy Ethics Official
EPA Office of Research and Development
Phone: 202-564-9084
Fax: 202-565-2430

From: Marzouk, Evonne
Sent: Mon, 7 May 2018 19:47:27 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Bandemehr, Angela
Subject: FW: USEPA Feedback from Call with Israeli MOH on Lead in Paint and Children's Products
Attachments: Lead in Paint in Israel_STOTEN_26791.pdf, MOH answers to EPA questions on lead in paint standard.docx

Hi Henry,
We're looking forward to speaking to you tomorrow! Please find attached some additional information shared by Tamar today, for our discussion.

Best wishes
Evonne

From: tamar.berman@MOH.GOV.IL [mailto:tamar.berman@MOH.GOV.IL]
Sent: Monday, May 07, 2018 6:24 AM
To: Mercurio, Cristina <Mercurio.Cristina@epa.gov>; Ashley, Chuck H <AshleyCH@state.gov>
Cc: Marzouk, Evonne <Marzouk.Evonne@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Leonard, Darlene <Leonard.Darlene@epa.gov>
Subject: RE: USEPA Feedback from Call with Israeli MOH on Lead in Paint and Children's Products

Cristina,

Thank you for your additions to my notes from the call and thank you for all the additional material. I forwarded the information on the recalled product from Israel to the Standards Institution and the Ministry of Economy.

Please see attached my answers to the questions, the third question is tricky and I will have to consult our international affairs department and get back to you with a full answer.

Please see attached our accepted manuscript (proofs, still has some errors!) on results of our pilot study on lead in painted surfaces and in spray paint.

Warm Regards, Tamar

State of Israel
Ministry of Health
משרד הבריאות, ישראל

Dr. Tamar Berman
Chief Toxicologist, Environmental Health
Ministry of Health, Israel

972-2-5080428
972-506243273

From: Mercurio, Cristina [mailto:Mercurio.Cristina@epa.gov]
Sent: Friday, May 04, 2018 4:16 PM
To: Ashley, Chuck H; תמר ברמן
Cc: Marzouk, Evonne; Bandemehr, Angela; Mccann, Ellie; Leonard, Darlene
Subject: USEPA Feedback from Call with Israeli MOH on Lead in Paint and Children's Products

Hello Tamar and Chuck,

Thanks for such a productive discussion last week and your helpful notes, Tamar.

Attached are a number of documents which include:

- EPA's feedback on Tamar's notes from the call. These comments are not redlined so if there's any confusion about EPA's additions please let us know.
- Some additional questions for MOH (at the end of the above notes)
- 2 CPSC recalls
- IPPIC policy statement
- News article about Philippines' lead paint testing
- 3 research studies by Lanphear

We hope this information is helpful and please let us now if you have any questions.

Though I will still be very much involved in this exchange as things proceed, I want to identify Evonne Marzouk, my colleague here in the Office of International and Tribal Affairs in our Office of Global Affairs and Policy, as the lead for communications on these issues with you. Evonne will be reaching out to arrange our follow-up discussion and looking forward to talking with you then.

Thanks and all the best.

Cristina

Cristina Mercurio
Middle East and North Africa Program Manager / Brazil Program Manager
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
Tel. 1-202-564-6481
E-mail: mercurio.cristina@epa.gov

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journal homepage: www.elsevier.com

Lead in spray paint and painted surfaces in playgrounds and public areas in Israel: Results of a pilot study

Tamar Berman[a, 1], Zohar Barnett-Itzhaki[a, b, *, 1], Shay Reicher[a], Ruti Ardi[c], Yaniv Shammai[c], Lior Aruas[c], Maya Negev[d]

[a] Ministry of Health, Jeremiya Street 39, Jerusalem 9446724, Israel
[b] Bioinformatics Department, School of Life and Health Science, Jerusalem College of Technology, Jerusalem, Israel
[c] Standards Institution of Israel, Tel Aviv, Israel
[d] School of Public Health, University of Haifa, Mt. Carmel 3498838, Israel

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MOH answers to EPA questions on lead in paint standard

EPA question 1:
EPA would like to understand more about the draft lead standard for paint that MOH is working on, and whether you would like to see it strengthened, for example, to incorporate industrial paints. Would you like feedback from EPA on the draft? What additional support do you need to adopt a strong standard, and what is the next step?

MOH response to question 1:
The standard was developed by the Standards Institution of Israel, by a stakeholder committee including the Ministry of Health, industry including manufacturers and importers, and consumer protection groups. The standard includes the following requirements regarding lead in paint (these are summarized in Table 3 in the attached manuscript).

All paints except those labeled for industrial use will have less than 90ppm. Spray paints not exempt. Paints containing more than 90 ppm will be labeled "Warning: Contains Lead. Do Not Apply to Surfaces Accessible to Children and Pregnant Women."

MOH would like to see the standard strengthened in the long term, either so that the 90ppm limit will apply to ALL paints; or that we will have restrictions on SALES on these paints to consumers (for example they can only be sold directly to manufacturers of heavy equipment). The draft standard still allows for sales of industrial paints with lead; but these paints will have to be labeled.

This was the result of a compromise with industry representatives. We are meeting with industry representatives aside from the stakeholder meetings on the standard, to encourage voluntary steps to phase out lead in all paints.

The next steps:

- There is a lengthy bureaucratic procedure where the Standards Institution and the Ministry of Economy approve the draft – this could take up to a year
- Even after the draft is approved, it will enter into force a year after that

I would appreciate EPA feedback on this issue (the standard itself is in Hebrew and mostly details with requirements not concerning lead so I am not attaching a translation). Are the requirements (All paints except those labeled for industrial use will have less than 90ppm. Spray paints not exempt. Paints containing more than 90 ppm will be labeled "Warning: Contains Lead. Do Not Apply to Surfaces Accessible to Children and Pregnant Women) sufficient? Would you recommend strengthening the standard to restrict lead in all paints? What timeframe is reasonable for phasing out lead in all paints?

EPA question 2:

What type of stakeholders will be most helpful in establishing a stronger standard or law in Israel? Is it industry, the medical community, NGOs, parents, etc.? We can provide materials, guidance and/or scientific information that may assist with any of these stakeholders, but it would be helpful to strategize and prioritize regarding the most important audiences. Who do you need to convince to establish a strong standard?

MOH response to question 2:

The Ministry of Health does not have regulatory authority over consumer products. Rather the Ministry of Economy has this authority and standards are developed in stakeholder committees including industry representatives.

Therefore, I think the most important stakeholder is industry (including both manufacturers and importers).

The manufacturers we have met seemed to understand the public health importance of getting lead out of public areas but needed technical help in finding replacements and perhaps guidance from companies which have succeeded in phasing out lead out of all paints. Industry representatives we met with talked about the beneficial properties of lead in paints in certain uses for example heavy equipment.

EPA question 3:
If Israel could be a leader on this topic in the region, what would regional cooperation look like? What are the pre-existing relationships and barriers that we should understand before proceeding? What are the easiest ways for Israel to lead?

MOH response to question 3:

Cooperation with the Palestinian Authority would probably be most complicated (because of contested borders and issues related to control of borders and transfer of goods) so perhaps it is preferable to focus on cooperation with Jordan, Turkey, and Egypt.

I will check with our international affairs department regarding pre-existing relationships and other health related collaboration with the Palestinian Authority, Jordan, Turkey, and Egypt.

I suggest Israel could lead by

- Sharing strategy for regulating and enforcing restrictions on lead in toys
- Sharing technical experience in testing lead in paints and surfaces (this would require Standards Institution of Israel cooperation and funding)
- Working with neighboring countries to prevent trade of lead containing paints, perhaps including industry engagement?

I will check with colleagues and our international affairs department and send a full answer

From: Bandemehr, Angela
Sent: Tue, 17 Apr 2018 18:10:24 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: FW: World Bank update

Sorry, Henry! Sent this to Mary Jean's old email by accident!

From: Bandemehr, Angela
Sent: Monday, April 16, 2018 3:28 PM
To: hhs0@cdc.gov; Sharunda Buchanan <sdb4@cdc.gov>; Steve Wolfson <Wolfson.Steve@epa.gov>
Cc: Ellie McCann <mccann.ellie@epa.gov>
Subject: World Bank update

Hi All!
I had a call with the Bank today, which had been rescheduled several times, due to the Bank's schedule. So it is understandable if this may not have worked for you. I apologize for that. But the call was short and the update is relatively simple.

Shafick has committed to getting us a draft of the report containing chapters 1-5 ASAP. He is in the process of confirming the draft with Ernesto, who had overseen the latest efforts on this. We will have a chance to comment, during which we will add our new Chapter 4 and will update the existing Chapter 3 on the Lead Paint Alliance, along with any other additional comments we may have on other parts.

The Bank is going to write chapters 6-8 (via consultants). I have sent Shafick information for Chapter 6 (industry best practices). Chapter 7 is a summary of what governments can do and Chapter 8 is the conclusion section. I'm not sure when we'll see those. I doubt they will be ready in the short-term.

Ernesto has suggested a list of reviewers of the report, see below. I'd be curious to know if you know any of these people and if you think they will provide a good review of the report.

Finally, Shafick will be in the country only one day for the rest of this month and that is Thursday, April 26. He has asked that we have a follow up call at 11 am on that day. I'll send an invite out to you.

He is very apologetic about the delay and very focused on getting this report done.

Let me know if you have any questions. I will be out after tomorrow for the rest of the week, but will be checking emails.

Best,
Angela

From: Shafick Hoossein [mailto:shoossein@worldbank.org]
Sent: Monday, April 16, 2018 3:12 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: lead reviewers

fyi

From: Ernesto Sanchez-Triana
Sent: Wednesday, April 04, 2018 7:10 PM
To: Shafick Hoossein <shoossein@worldbank.org>
Subject: Water Quality

George Tchobanoglous <gtchobanoglous@ucdavis.edu>
Thomas Harter Tharter@ucdavis.edu
Perry Mccarthy pmccarty@stanford.edu
Jenna Davis jennadavis@stanford.edu
Richard Luthy luthy@stanford.edu

From: Etzel, Ruth
Sent: Thu, 20 Jul 2017 16:00:51 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Herb Needleman

A giant of pediatric environmental health has passed:

http://www.legacy.com/obituaries/postgazette/obituary.aspx?page=lifestory&pid=186139501

From: Marzouk, Evonne
Sent: Thu, 24 May 2018 20:57:33 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (b)(6)
Cc: Bandemehr, Angela;Mccann, Ellie
Subject: Information for your talk
Attachments: 2013-12-16.News.Stunning loss for Pb paint makers in CA Lawsuit.docx, 2016-04-21.News.PPG Industries will phase out lead from all paints by 2020.docx, ABA Report and Resolution on Lead Paint ADOPTED 8-14-17.docx, CDC polcyslide.EMedits.May2016.pptx, CPSC 2016 recall.Toy from Israel for lead paint violation.docx, INDIA.lead in paints notification.final law 2016.pdf, IPPIC Policy Statement Supporting Lead Paint Alliance.2018.docx, Module A Lead Paint FINAL.pdf, Module Bi Health Impacts FINAL.pdf, Module D Industry Perspective FINAL.pdf, Module E Lead alternatives_FINAL.pdf, UNE Lead Paint Model Law.English.12-1-17.pdf, EPA LPA Presentation for UNEA3 Science Forum.pptx, 12_Group_4_South_Africa.pdf

Hello Henry,
We've taken you at your word and are providing quite a bit of information to help you prepare for your upcoming talk in Israel. See below a list of major messages you could use to formulate a talk addressing the various needs, and a description of the attachments provided. If we can provide further information, please let us know. Thank you for doing this!

Best wishes
Evonne

-
Major Messages:

1. Health impacts from lead (Henry has this covered)
2. Corporate responsibility: Protecting children, adults and workers from exposure to lead in paint is the right thing to do.
3. Liability of paint manufacturers for future health impacts from lead exposure:
    - Consumer exposure from use of lead-containing paint (recent law suits in U.S.);
    - Worker exposure in manufacturing facilities and from industrial use (e.g. on bridges).
4. The International Paint and Printing Ink Council (IPPIC) supports the establishment and enforcement of laws to limit lead content of all types of paints, because:
    - It will create a "level playing field" for all paint producers;
    - Alternatives to lead additives are available for all types of paints.
5. UN Environment published new *Model Law and Guidance for Regulating Lead Paint* in 2017. IPPIC now supports the UNE Model Law.
    - Model Law recommends total lead limit of 90 ppm for all paints: architectural and industrial.

- In many countries without strong consumer laws, children can be exposed to lead from industrial paint because it is often used on playground equipment, toys, and the interior and exterior walls of homes and schools.
    - Tamar's study of lead in paint on playground equipment in Israel
    - CPSC's recall in 2016 of toy from Israel because of lead paint

6. Globally, countries are moving to limit lead in paint to 90 ppm, either in new laws or revisions to existing laws.
    - 9 countries have 90 ppm lead limit: Cameroon, Canada, China, India, Iraq, Kenya, Nepal, Philippines, United States.
    - 40 countries ban lead additives in paint through their implementation of EU REACH.
    - 24 countries have paint limits for lead set between 100-600 ppm
    - Brazil and Argentina are currently revising their laws to reduce lead limit from 600 to 90 ppm.
    - Ukraine is currently drafting a new 90 ppm law.
7. Complying with a 90 ppm lead limit requires avoiding the use of lead-containing ingredients, especially pigments and driers. If any lead additives are used, the paint will exceed the 90 ppm lead limit. Therefore, paints that comply with a 90 ppm lead limit will also be in compliance with EU REACH limits on specific lead ingredients.

<u>Background materials for Henry to review:</u>

1. ABA resolution and report (2017)
2. UNE's *Model Law and Guidance for Regulating Lead Paint* (2017)
3. IPPIC current statement on its website (2018)
4. CPSC recall of toy from Israel due to lead in paint (2016)
5. Toolkit Module A: The problem with lead paint (WHO)
6. Toolkit Module B: Health impacts (WHO) – includes slides with dropping BLLs in US
7. CDC slide on BBLs & policies/law in the US (please use this slide, not the one in Module B).
8. Toolkit Module D: Industry perspective (IPPIC) (2015) – a bit out of date, but still ok (but see IPPIC's 2018 statement, #3, for their updated position)
9. Toolkit Module E: Alternatives to lead in paint (IPEN) – includes a lot of detail about how to reformulate paint without lead
10. News article about law suit in US (2013)
11. News article about PPG commitment to eliminate lead in industrial paints by 2020.

12. South Africa case study – presentation from industry
13. Overview presentation on the Lead Paint Alliance (as delivered at UNEA3)
14. India's lead paint law

December 16, 2013
FairWarning Reports, www.fairwarning.org

Stunning Loss for Lead Paint Makers in Lawsuit by California Cities and Counties

Posted By Lilly Fowler and Myron Levin

Lead paint makers suffered a landmark defeat Monday when a state court judge in San Jose, Calif., ordered the industry to create a $1.1 billion fund to eliminate lead hazards to children in hundreds of thousands of homes in the state.

The decision broke the industry's perfect record of defending suits by public agencies seeking to extract money for removal of flaking lead paint from older homes and apartments. It marked a huge victory for 10 California municipalities — including Los Angeles County, and the cities of San Francisco and San Diego — that will be able to draw on the fund for home inspections and repairs if the ruling holds up.

In the 114-page decision, Santa Clara Superior Court Judge James P. Kleinberg found three companies—Sherwin-Williams Co., NL Industries, Inc., and ConAgra Grocery Products Co.—guilty of creating a public nuisance by manufacturing and selling lead paint long after learning of its dangers. Kleinberg dismissed claims against two other defendants, ARCO and DuPont, finding there was insufficient evidence that they had sold lead paint for use in California homes.

The ruling drew a scathing response from Sherwin-Williams, NL and ConAgra. "The decision violates the federal and state constitutions," said spokeswoman Bonnie J. Campbell in a prepared statement. "It rewards scofflaw landlords who are responsible for the risk to children from poorly maintained lead paint." Campbell said the companies will ask Kleinberg to change his ruling and, if necessary, will file an appeal.

But Fidelma L. Fitzpatrick, an attorney with Motley Rice, which represented the cities and counties, said she was "thrilled for all the kids who are actually going to have a shot to have a safe home environment."

"It's a great lesson in responsibility and accountability," Fitzpatrick said. "You make a mess, you have to clean it up."

The ruling calls for the three companies to deposit $1.1 billion with the California Childhood Lead Poisoning Prevention Branch, part of the state health department, within 60 days of a final judgment. The 10 cities and counties will be able to draw on the fund to carry out lead inspections, removal and repairs. Each will have an allotment based on estimates of homes with potential lead hazards.

As reported by FairWarning, the lawsuit was filed 13 years ago, and has gone on so long that Kleinberg became the third judge to handle the case. It took five years just to resolve the side issue of whether it was proper for private contingency fee lawyers to represent public agencies (The final decision was yes.) The nonjury trial began July 15 and ended September 23.

Lead paint makers over the last 24 years had fended off about 50 other lawsuits by states and municipalities. Their one previous loss–in Rhode Island in 2006–was erased on appeal.

The industry's success had come despite evidence that company officials knew decades ago that lead is hazardous but promoted lead paint as healthy. A Sherwin-Williams newsletter from 1900, for example, described lead as a "deadly cumulative poison." Yet a 1924 ad by a company subsidiary boasted: "Cousin Susie says her health improved instantly" after her home was covered with lead paint.

Lead has been found in drinking water and in children's jewelry, and has many industrial uses, but authorities say the biggest public health threat comes from lead-laden paint. Lead pigments were mixed into paint for decades, not merely for color, but also because they made the paint more durable and washable. The federal government outlawed lead paint for household use in 1978, however, due to its health hazards.

The paint is still found on the walls of old houses and apartments, where children sometimes ingest it when it chips off walls and turns into dust.

Recent research has found that even small amounts of the metal can be harmful, which prompted federal authorities this year to raise their estimate of the number of children with potentially dangerous levels of lead in their blood to 535,000. Young children with elevated lead levels in their blood are at risk of lower IQ, attention disorders and other health problems.

The defendants "certainly knew or should reasonably have known that exposure to lead at high levels, including exposure to lead paint, was fatal or at least detrimental to children's health," Kleinberg wrote in his decision. "That knowledge alone should have caused each Defendant to cease its promotion and sale of lead pigment and/or lead paint for home use. Instead, after becoming aware of the hazards associated with lead paint, they continued to sell it."

He acknowledged that there are other sources of lead exposure, but said that ''does not change the fact that lead paint is the primary source of lead poisoning for children'' living in homes built prior to the lead paint ban.

Kleinberg also acknowledged that there have been significant reductions in blood lead levels in children, thanks to the lead paint ban and government programs. But he said that ''Existing programs at all government levels lack the resources to effectively deal with the problem…The Court is convinced there are thousands of California children…whose lives can be improved, if not saved, through a lead abatement plan."

The court order states that the cities and counties will be entitled to receive up to the following amounts: Alameda County, $99 million; Los Angeles County, $605 million; Monterey County, $22 million; San Mateo County, $55 million; Santa Clara County, $99 million; City of San Diego, $77 million; City of San Francisco, $77 million; Solano County, $22 million; Ventura County, $44 million.

Article printed from FairWarning: http://www.fairwarning.org

URL to article: http://www.fairwarning.org/2013/12/stunning-loss-for-lead-paint-makers-in-lawsuit-by-california-cities-and-counties/

April 21, 2016
Pittsburgh Post-Gazette
http://www.post-gazette.com/business/pittsburgh-company-news/2016/04/21/PPG-income-rises-while-sales-remain-flat-pittsburgh/stories/201604210165

PPG Industries will phase out lead from all paints by 2020

By Joyce Gannon / Pittsburgh Post-Gazette

PPG Industries today said it will phase out lead from all of its paints by 2020.

Michael McGarry, president and chief executive of the Downtown-based coatings and glass company, told shareholders at the company's annual meeting that PPG's sustainability committee adopted the new policy to reduce and eventually eliminate lead from its industrial paints that are used for automobiles, heavy equipment, bridges, airplanes and other applications.

Exposure to lead-based paint is known to cause severe health issues in children and adults including damage to body organs, behavioral problems, and impairments to mental and physical development.

PPG eliminated lead from its household paints several years ago.

During the annual meeting at the Fairmont Hotel, Downtown, Perry Gottesfeld, executive director of a San Francisco, Calif.-based activist organization, Occupational Knowledge International, asked the company to stop making and distributing lead paint and presented a petition signed by more than 5,700 people.

The same petition was delivered to coatings giant Sherwin-Williams which is based in Cleveland, Ohio. In it, petitioners asked the companies to eliminate all lead compounds in their products, recall all lead paint and dispose of it through environmentally safe methods.

Mr. Gottesfeld noted that Dutch paints maker AkzoNobel stopped using lead additives in 2011.

In a new sustainability report posted on its company web site today at www.ppg.com, PPG said it has no plans to develop new products that contain lead and has developed plans to eliminate lead from products that become part of its portfolio through acquisitions.

Mr. McGarry said PPG is working with existing customers that use its industrial paints to reformulate products for their specifications.

"This is a big reversal," said Mr. Gottesfeld, who noted that his organization had made several earlier attempts to push PPG to make lead-free products. "I think it's an excellent move."

Earlier today, PPG said first-quarter net income rose nearly 8 percent to $347 million, or $1.29 per share, boosted by income from six acquisitions in 2015 and cost-cutting initiatives.

Sales were flat compared with a year ago at $3.7 billion.

Adjusted net income, excluding after-tax transaction charges, was $351 million, or $1.31 per share, beating Wall Street analysts' average estimate of $1.30 per share.

Adjusted earnings were up 11 percent over first-quarter 2015.

"We realized this improvement despite ongoing, but moderating, unfavorable foreign currency translation," said Mr. McGarry.

He said sales volumes improved in Europe, China and Mexico while U.S. and Canadian sales were flat.

Within its business segments, PPG said sales of performance coatings -- which includes consumer paints -- fell less than 1 percent. Industrial coatings rose by about 2 percent.

Glass sales declined by 2 percent in part because of the sale of a glass manufacturing plant.

Company officials were scheduled to discuss the quarterly results in a conference call this afternoon.

Joyce Gannon: jgannon@post-gazette.com or 412-263-1580.

RESOLUTION

RESOLVED, That the American Bar Association urges national governments worldwide to adopt laws to phase out the manufacture, import, and sale of lead paint;

FURTHER RESOLVED, That the American Bar Association supports efforts of the international community, governments, industry, and non-governmental organizations to promote the phase-out of lead paint by no later than 2020 ; and

FURTHER RESOLVED, That the American Bar Association urges lawyers, law firms, bar associations, and other professional and nonprofit organizations to support adoption and implementation of laws to phase out and eliminate lead paint through pro bono support, educational initiatives, and other appropriate means.

EXECUTIVE SUMMARY

1. Summary of the Resolution

   The resolution urges national governments to adopt measures to control the risks of lead paint by phasing out its manufacture, import, and sale, and voices support for efforts to achieve worldwide adoption of such measures by 2020. The language of the resolution is formulated to track the aims of the "Lead Paint Alliance," a voluntary initiative led by the World Health Organization and the United Nations Environmental Programme, which includes representatives from the paint and coatings industry, NGOs, and the U.S. government. The resolution also aims to mobilize ABA members, ABA components, and other affiliates to support adoption of lead paint laws through awareness-raising and educational activities and pro-bono technical support.

2. Summary of the Issue that the Resolution Addresses

   Lead exposure causes severe harm to human health and development, particularly to children. Although exposure to lead in paint remains a leading source of exposure globally, only one third of countries in the world have adopted laws to address lead in paint. Primarily low- and middle-income countries lack such laws. The consequences of lead exposure are tremendous – in some regions the neurodevelopmental impacts alone amount to two to four percent of GDP. Adopting legislation or regulation to phase out lead paint in a form that is clear, readily implemented and enforceable would mark a substantial step toward eliminating the harms of lead exposure, particularly to children.

3. Please Explain How the Proposed Policy Position Will Address the Issue

   This resolution enables the ABA to urge national governments to adopt laws to phase out lead paint, and helps to focus the resources of ABA components to support governments' and other stakeholders' efforts to achieve global adoption of such measures by 2020.

4. Summary of Minority Views or Opposition Internal and/or External to the ABA Which Have Been Identified

The Rules and Calendar Committee met May 20-21, 2017 and recommended certain changes to the resolution. These changes were adopted as proposed, with one exception. The Committee recommended deleting the term "national" in the first clause of the resolution. ("That the American Bar Association urges *national* governments worldwide to adopt laws to phase out the manufacture, import, and sale of lead paint;") We decline to adopt this recommendation in order to clarify that the ABA is urging only "national," rather than sub-national governments such as states, provinces, municipalities, etc., to adopt measures to address lead paint. National governments are the governmental body best-placed to regulate lead paint hazards through restrictions on manufacture, import, and sale. Restrictions on trade by sub-nationals is sub-optimal for a number of reasons, including lack of adequate expertise and implementation/enforcement authority among sub-national authorities and increased economic costs due to patchwork regulation.

AMERICAN BAR ASSOCIATION
SECTION OF INTERNATIONAL LAW
REPORT TO THE HOUSE OF DELEGATES

I. EXPLANATION OF RECOMMENDATION

Exposure to lead causes severe harm to human health and development, posing risks of permanent damage to the brain and nervous system, decreased IQ and behavioral problems, and harm to kidney function and blood and reproductive systems. Children are especially vulnerable. There is no known level of lead exposure that is considered safe for children. Globally, lead exposure imposes a tremendous burden in terms of impacts on human health and communities. The Institute for Health Metrics and Evaluation (IHME) estimates that in 2015 lead exposure worldwide accounted for 495,550 deaths due to long-term effects on health, with the highest burden in low and middle income countries. IHME also estimates that lead exposure in 2015 accounted for 12.4% of the global burden of idiopathic intellectual disability (i.e., disability other than that from known causes such as genetic factors), 2.5% of the global burden of ischemic heart disease (i.e., coronary artery disease), and 2.4% of the global burden of stroke.[1] Taking into account the neurodevelopmental impacts alone, the global cost of childhood lead exposure in low- and middle-income countries reaches $977 billion dollars a year, equivalent to about 2 to 4% of GDP depending on the region.[2]

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[1] *Institute For Health Metrics And Evaluation GBD Compare*, UNIVERSITY OF WASHINGTON (2016), <http://vizhub.healthdata.org/gbd-compare> as reported by the WORLD HEALTH ORGANIZATION in the Lead Paint Alliance Regulatory Toolkit, Module Bi, *Health Hazards of Lead* (updated February 2017).

[2] M. Attina and Leonardo Trasande, *Economic Costs of Childhood Lead Exposure in Low- and Middle-Income Countries*, ENVIRONMENTAL HEALTH PERSPECTIVES (2013). Additional information available at:

Lead in paint remains a leading source of lead exposure risk globally. Although cost-effective alternatives exist and the paint and coating industry is broadly supportive of its phase-out, lead in paint is regulated in only one third of countries around the world.[3] It is primarily lower- and middle- income countries that do not have laws.[4] Laws and regulations banning lead in paint are the most effective means to control this exposure risk.[5]The United States has banned lead paint since 1978; the European Union similarly instituted a ban on lead compounds in paint to control lead exposure risk. Adopting legislation or regulation to phase out lead paint in a form that is clear, readily implemented and enforceable would mark a substantial step toward eliminating the harms of lead exposure, particularly to children. The ABA, with its objective to work for just laws in order to advance rule of law, has a clear role to play. Getting the law right is an essential component of the global solution to lead paint.

By urging national governments to adopt measures to phase out lead paint, the resolution advances rule of law, recognizing the critical role of law to respond to the global problem of lead exposure.. The resolution joins the ABA in support of continuing efforts by the international community, including the Global Alliance to Eliminate Lead Paint ("Lead Paint Alliance"), a voluntary initiative led by the World Health Organization and the United Nations Environment Programme. The Lead Paint Alliance has established a goal that by 2020 all countries will have adopted laws to eliminate lead paint. The resolution is also a call to action to lawyers and bar associations to support global efforts to phase out lead paint, including through pro bono activities. ABA support for efforts to advance better legal frameworks to address the harms of lead exposure is a natural extension of its work to advance rule of law in countries around the globe –many of which likely lack adequate lead paint laws.

Further, the resolution is aligned with and advances the implementation of a 2003 resolution (readopted in 2013) supporting the concept of sustainable development, which resolved, *inter alia*, that the ABA recognizes that "good governance and the rule of law are essential to achieving sustainable development" and that the ABA "should consider and promote

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NYU SCHOOL OF MEDICINE, SECTION ON ENVIRONMENTAL PEDIATRICS, <http://www.med.nyu.edu/pediatrics/research/environmentalpediatrics/leadexposure>.

[3] World Health Organization tracking of lead regulation indicates that only 65 countries have legally-binding restrictions of lead as of February 2017. This tracker does not account for whether the restrictions are adequately stringent. <http://www.who.int/gho/phe/chemical_safety/lead_paint_regulations/en/>

[4] *Global Report on the Status of Legal Limits on Lead in Paint,* United Nations Environment Program (2016), <http://web.unep.org/chemicalsandwaste/sites/unep.org.chemicalsandwaste/files/Status%20of%20Limits-Lead-Paint-2016%20Report-Final.pdf>

[5] *Lead In Enamel Decorative Paints National Paint Testing Results: A Nine Country Study,* UNITED NATIONS ENVIRONMENT PROGRAMME AND INTERNATIONAL POPS ELIMINATION NETWORK (2013), <http://www.unep.org/hazardoussubstances/Portals/9/Mercury/Documents/publications/Lead_in_Enamel_decorative_paints.pdf>.

sustainable development principles in the work of its entities."[6] ABA support for laws to phase out lead paint promotes sustainable development in furtherance of existing ABA policy.

II. BACKGROUND: Impacts of and Measures to Control Lead Exposure

Lead is present in a number of man-made products, including paints with added lead compounds. Lead is intentionally added to paint as a pigment, a drying agent, or an anti-corrosive. Globally, lead paint is a major remaining source of lead exposure for children, particularly in developing countries.[7] In some countries, lead exposure from paint is estimated to account for 90% of childhood lead poisoning.[8]Human health problems, societal costs, environmental contamination, and broader social and environmental justice impacts result from lead paint use.

a. Human Health Effects:

Lead is a toxic metal that has the potential to harm physical and mental development. Lead paint can result in exposure to lead for many years after it has been applied to a surface, due to paint weathering, chipping or peeling that releases lead into dust and soil in and around homes, schools and other locations.[9]

Studies have shown that exposure to lead raises an individual's susceptibility to kidney disease, cardiovascular and reproductive problems, and causes dramatic neurological damage. The effects of lead exposure can range from high blood pressure to mental incapacitation and even death, depending on the age of the individual, amount of exposure and other factors. Young children can suffer profound and permanent adverse health effects from exposure to lead, particularly affecting the development of the brain and nervous system, and pregnant women have a high risk of experiencing a complicated pregnancy and damage to the developing fetus.[10] Widespread production or use of lead paint also creates occupational safety issues for adults who work in paint production factories or in building, renovation, and demolition activities.

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[6] *American Bar Association Report and Resolution on Sustainable Development, Adopted By The House Of Delegates*, AMERICAN BAR ASSOCIATION (2003), *reaffirmed by American Bar Association Report and Resolution* No. 105 (Aug 12-13, 2013) (Res. No. 91A10B).

[7] Elise Gould, *Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control*, 117 ENVIRONMENTAL HEALTH PERSPECTIVES 1162 (2009).

[8] P. Glorennec et al., *Identifying Sources of Lead Exposure for Children, with Lead Concentrations and Isotope Ratios*, working draft to be published in 7 JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL HYGIENE 253 (2010).

[9] Shilu Tong et al., *Environmental Lead Exposure: A Public Health Problem of Global Dimensions*, WORLD HEALTH ORGANIZATION, <http://www.who.int/bulletin/archives/78(9)1068.pdf>.

[10] *Lead poisoning and health*, fact sheet, WORLD HEALTH ORGANIZATION (September 2016),

Lead paint has the greatest potential for toxic effects on children.[11] Global and U.S. studies have determined that young children are more vulnerable to lead poisoning than adults, and are particularly vulnerable to lead paint exposure for several reasons: 1) children's proximity to the ground and hand-to-mouth activity increases their contact with lead paint dust particles, which are easily ingestible; 2) children accumulate higher doses of lead relative to their lower body weights; and 3) a child's developing system is highly sensitive to lead toxicity.[12] In addition, lead paint tastes sweet, thus encouraging children to put lead paint chips and toys covered with lead paint or lead dust into their mouths.[13]

The United States Centers for Disease Control and Prevention has concluded that there is **no known level of lead exposure that is considered safe.**[14] Even when children are exposed to small amounts of lead, there can be a wide range of effects on their brain and neurological systems, causing children to appear hyperactive or irritable. Both long and short term exposure to lead will put children at risk for developmental and learning deficiencies, delayed growth, and sensory failure. These effects are often permanent.[15]

b. Harm to Communities

Beyond the public health impacts, lead exposure takes a serious toll on communities. Lead paint exposure also imposes socio-economic burdens, reducing economic growth and driving up crime and other forms of conflict.[16] Multiple studies indicate that there is a causal link between lead exposure and increased violent crime rates.[17] A 2010 study links lead exposure to aggressive neurobehavioral performance,

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[11] P. Glorennec et al.,*supra*, note 7.

[12] *Health Hazards of Lead*, WORLD HEALTH ORGANIZATION, (updated February 2017), from the Lead Paint Alliance Regulatory Toolkit, Module Bi: <http://web.unep.org/sites/all/themes/noleadpaint/docs/Module%20Bi%20Health%20Impacts%20FINAL.pdf>; *Lead poisoning and health*, fact sheet, WORLD HEALTH ORGANIZATION (September 2016), <http://www.who.int/mediacentre/factsheets/fs379/en/>; and *Protecting Children from Lead Poisoning and Building Healthy Communities*, 89 AMERICAN JOURNAL OF PUBLIC HEALTH (1999). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1508654/pdf/amjph00006-0020.pdf>.

[13] *Lead paint*, Wikipedia (March 18, 2017).

[14] CDC Response to Advisory Committee on Childhood Lead Poisoning Prevention. Recommendations in "*Low Level Lead Exposure Harms Children: A Renewed Call of Primary Prevention.*" <https://www.cdc.gov/nceh/lead/acclpp/cdc_response_lead_exposure_recs.pdf>

[14] *Childhood Lead Poisoning*, WORLD HEALTH ORGANIZATION (2010),

[15] *Childhood Lead Poisoning*, WORLD HEALTH ORGANIZATION (2010), <http://www.who.int/ceh/publications/leadguidance.pdf>.

[16] *Summaries & Evaluations: Inorganic And Organic Lead Compounds*, INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) MONOGRAPHS FOR THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS, VOL. 87, <http://www.inchem.org/documents/iarc/vol87/volume87.pdf>.

[17] *See, e.g.,* John Paul Wright et al., *Association of Prenatal and Childhood Blood Lead Concentrations with Criminal Arrests in Early Adulthood*, 5 PUBLIC LIBRARY OF SCIENCE

while initial data from an ongoing study indicates that lead exposure may damage a portion of the brain aligned with aggression control. [18] The increased aggressive behavior, in turn, is linked to an increase in crime and economic losses for the community.[19]

Lead exposure both impairs intelligence and slows or halts certain cognitive capabilities.[20] Cognitive ability affects school performance, academic attainment, and entry into the labor market. Reduction in cognitive ability from exposure to lead paint reduces economic productivity, profits and tax revenues, and increases crime rates.[21]

In the United States, the legacy of lead paint used for housing prior to a ban in 1978 has fallen most heavily upon poor and minority communities, particularly those in areas with old deteriorating housing stock.[22] The American Bar Association has previously recognized that lead paint exposure poses an environmental justice concern in the U.S.[23] [24] In the absence of effective regulation, lead paint is also a significant environmental justice issue in middle- and low-income countries, with the devastating effects of lead exposure falling disproportionately on communities that are already vulnerable and that lack the resources to manage its effects.

MEDICINE E101 (2008); James J. Feigenbaum and Christopher Muller, *Lead Exposure and Violent Crime in the Early Twentieth Century*, EXPLORATIONS IN ECONOMIC HISTORY, ELSEVIER BV (2016); Mielke, H.W. and S. Zahran, *The Urban Rise And Fall Of Air Lead (Pb) and the Latent Surge And Retreat Of Societal Violence*. ENVIRONMENT INTERNATIONAL (2012).

[18] *See* Alexandra Katsiri, *Levels of Lead in Children's Blood*, European Environment and Health Information Center, WORLD HEALTH ORGANIZATION EUROPE (2010). In an ongoing United States study, researchers are investigating the association between actual measurements of prenatal and childhood blood lead concentrations and criminal arrests in early adulthood to get a clear idea about whether early lead exposure is associated with subsequent violent behavior; the interim data from this study has shown that lead exposure damages a portion of the brain aligned with aggression control.John Paul Wright et al., *Association of Prenatal and Childhood Blood Lead Concentrations with Criminal Arrests in Early Adulthood*, 5 PUBLIC LIBRARY OF SCIENCE MEDICINE E101 (2008).

[19] *See supra* note 17. Similar studies have been completed in Europe and Australia, all resulting in the same conclusion that lead exposure during adolescence is likely to result in aggressive criminal behavior during adulthood.Mark Patrick Taylor et al., *The Relationship between Atmospheric Lead Emissions and Aggressive Crime: An Ecological Study*, 15 ENVIRONMENTAL HEALTH SPRINGER SCIENCE + BUSINESS MEDIA (2016).

[20] Kim M. Cecil et al., *Decreased Brain Volume in Adults with Childhood Lead Exposure*, 5 PUBLIC LIBRARY OF SCIENCE (PLOS) MEDICINE E112 (2008).

[21] Alexandra Katsiri, *Levels of Lead in Children's Blood*, European Environment and Health Information Center, WORLD HEALTH ORGANIZATION EUROPE (2010).

[22] *Blood Lead Levels In Children Aged 1–5 Years — United States, 1999–2010*, Morbidity and Mortality Weekly Report, CENTERS FOR DISEASE CONTROL AND PREVENTION (Apr. 5, 2013), <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6213a3.htm>.

c. Environmental Contamination

Over time lead paint can chip and peel and contaminate dust and soil. These lead-contaminated dust and soil particles can move through ecosystems and cause contamination of vegetation, groundwater, surface water and air. Lead contamination imposes stress on ecosystems, destroying microorganisms and slowing decomposition of soil material and harming certain plants and invertebrates.[25][26]

d. The Benefits of Measures to Control Lead Content in New Paints Far Outweigh their Costs

Lead poisoning is often preventable through lead control measures, which have significantly reduced population-level blood lead concentrations in the U.S. and other countries where such measures are in place. The benefits of government action to limit the lead content in new paints include the avoidance of future costs due to new cases of lead poisoning, resulting in increased health care costs, decreased productivity and increased crime rates, as well as the avoidance of future costs to safely remove old lead paint after its application in order to prevent new or continuing lead exposure from that source.

The cost for manufacturers to switch to using non-lead additives is relatively low, especially for decorative paint for use on houses and public buildings. Non-lead alternatives to some lead pigments have been available for many decades, including common compounds such as titanium dioxide and zinc oxide. Lead-containing additives used as paint pigments, driers, and anti-corrosive agents are a small component of paint, and contribute relatively little to its cost, making lead-free paint generally cost-competitive.[27] Numerous paint testing studies conducted in 46 middle- and low-income

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[23] Environmental Law Report No. 109 discusses the harms of lead paint in the context of environmental justice. American Bar Association Recommendation, Adopted By the House of Delegates, *Environmental Law (Report No. 109)*, AMERICAN BAR ASSOCIATION (1993), <http://www.americanbar.org/content/dam/aba/directories/policy/1993_am_109.authcheckdam.pdf>.

[24] A Report and Recommendation on the inadequacy of health care for American Indians recognizes the consequences lead-based paint has on children's cognitive health. American Bar Association Section Of Individual Rights And Responsibilities, AMERICAN BAR ASSOCIATION (2004), <http://www.americanbar.org/content/dam/aba/directories/policy/2004_my_103c.authcheckdam.pdf>.

[25] Deni Greene, *Effects of Lead on the Environment*, LEAD ACTION NEWS (1993), <https://www.lead.org.au/lanv1n2/lanv1n2-8.html>.

[26] *Final Review of Scientific Information on Lead*, UNITED NATIONS ENVIRONMENT PROGRAMME, CHEMICALS BRANCH, DTIE (2010), <http://www.unep.org/hazardoussubstances/Portals/9/Lead_Cadmium/docs/Interim_reviews/UNEP_GC26_INF_11_Add_1_Final_UNEP_Lead_review_and_apppendix_Dec_2010.pdf>.

[27] *Alternatives to Lead in Paint* INTERNATIONAL POPS ELIMINATION NETWORK (2016). Presentation based on the Lead Paint Alliance Regulatory Toolkit, Module E.

countries around the globe found that at least a few local paint companies are producing lead-free paint in every country, demonstrating that alternatives to lead paint are currently available.[28]

On the other side of the ledger, the costs of lead exposure are monumental. A 2009 study estimated that the economic cost of lead poisoning in children in the United States from existing old, or "legacy," lead paint in housing can be broken down into the following categories: health care ($11-$53 billion), lifetime earnings ($165-$233 billion), tax revenue ($25-$35 billion), special education ($30-$146 million), and attention deficit–hyperactivity disorder ($267 million).[29] [30] Studies of the global costs of lead paint tend to consider only a subset of these costs. A recent study, analyzing only the costs of lost IQ points, found the global cost of childhood lead exposure from all sources in low- and middle-income countries to reach $977 billion dollars a year. The economic impact of only this one aspect of the health impacts of lead amounts to nearly 2 to 4% of GDP depending on the region; in some countries in Africa, the economic cost of lost IQ points due to childhood lead exposure exceeds annual development assistance.[31] As noted above, lead paint is a major source of childhood lead exposure globally, and in some countries, lead paint is the largest source of lead poisoning.

In the face of clear evidence of the tremendous human and economic harms of exposure to lead in paint, many countries have adopted some form of ban on lead in paint.[32] The United States banned lead in consumer paint in 1978; Canada did so in 1976. Australia has restricted lead paint since 1970. In Europe, some countries adopted restrictions on lead paint use as far back as the early 1900s; in 1989, the European Union adopted a region-wide ban.[33] [34]Moreover, as more information has become available regarding health problems caused by even low levels of exposure to lead, some countries have adopted increasingly stringent limits on the allowable percentage of lead

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[28] The various studieshave tested paints available on the market, and assessedthe percentage of paints containing less than 90 or 600 parts per million (PPM) of lead, which generally indicates that no lead compounds were added to the paint.*Global Lead Paint Elimination Report*, INTERNATIONAL POPS ELIMINATION NETWORK (October 2016).

[29] Gould, *supra*, note 6.

[30] A 2002 study found the costs of direct medical and indirect societal costs of childhood lead exposure in the U.S. amounted to $43 billion annually. *Childhood Lead Poisoning Report*, WORLD HEALTH ORGANIZATION (2010), <http://www.who.int/ceh/publications/leadguidance.pdf>.

[31] Attina, *supra*, note 2.

[32] Many, but not all, of these measures focus target only"decorative"paints (also referred to as architectural, household or consumer paint).

[33] The EU ban entered into effect in 1992. Hodel, Rebecca, "Lead Legislation: the World's Best and Worst Practice Regulating Lead Paint"LEAD GROUP (2010).

[34] In 2016, lead additives became regulated under EU REACH. *See* "REACH restrictions underway for lead and tattoo inks – where are we?" ECHA newsletter (May 2016: issue 2). <https://newsletter.echa.europa.eu/home/-/newsletter/entry/2_16_reach-restrictions-underway-for-lead-and-tattoo-inks-where-are-we>.

contaminants in paint. For example, the U.S. tightened its restriction on lead in paint from 600 parts per million (ppm) in 1978 to 90 ppm by 2009.

The experiences of industrialized nations leave little doubt that banning lead in new paint is the best preventive solution to reducing lead paint exposures. The cost of removing existing lead paint from homes or other sources after application is large, with estimates of lead hazard controls (including removal) for existing lead paint in housing in the United States ranging from $1-11 billion. But even these significant legacy costs of removal or otherwise remediating the hazards of existing lead paint in the U.S. are dwarfed by the benefits of reducing childhood lead exposure in a ratio of 1:17 to 1:220.[35]For middle- and low-income countries that have not yet banned lead paint, the answer is even more clear-cut: adopting legislation to ban lead paint will generate societal benefits far exceeding any costs.

III. INTERNATIONAL RESPONSE TO LEAD PAINT: A Call to Action

Paints containing lead are still widely manufactured and sold for use in many developing countries, and international activities are increasingly focused on the goal of eliminating lead paint as a significant global source of lead poisoning. In 2002, the World Summit on Sustainable Development included in its implementation plan a call to "phase-out lead in lead-based paints and other sources of human exposure and work to prevent, in particular, children's exposure to lead and to strengthen monitoring and surveillance efforts and the treatment of lead poisoning."[36] In 2008, the Intergovernmental Forum on Chemical Safety adopted the "Dakar Resolution for Eliminating Lead in Paints." This was followed in 2009 by a resolution of the International Conference on Chemicals Management, which created a global partnership "to promote phasing out the use of lead in paints" as an important contribution to the resolution of the World Summit on Sustainable Development and to the Strategic Approach to International Chemicals Management.[37]

To implement the resolution of the International Conference on Chemicals Management, international organizations, national governmental bodies, non-governmental organizations, and the private sector have joined together in a voluntary partnership called the Global Alliance to Eliminate Lead Paint (Lead Paint Alliance). To facilitate achievement of this goal, the United Nations Environment Program (UNEP), the World Health Organization (WHO) and other Lead Paint Alliance partners are developing a "Guidance and Sample Law for Regulating Lead Paint" to assist national governments in adopting laws to eliminate lead paint. The Guidance and Sample Law will offer model provisions that can be adapted to a country's national legal context.

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[35] Gould, *supra*, note 6.

[36] *Report of the World Summit on Sustainable Development*, 26 August to 4 September 2002, Johannesburg, South Africa, http://www.un.org/jsummit/html/documents/summit_docs.html.

[37] *Operational Framework for the Global Alliance to Eliminate Lead Paint*, UN Environment Programme and the World Health Organization (March 2011).

a. Global Alliance to Eliminate Lead Paint (Lead Paint Alliance)

The Lead Paint Alliance is jointly led by UNEP and WHO. It is a voluntary international initiative aiming to prevent children's exposure and to minimize occupational exposure to lead paint by promoting the phase-out of paints containing lead. The Lead Paint Alliance is guided by an advisory committee consisting of representatives of national governments, the private sector, UN bodies, and non-governmental organizations. The United States chairs the advisory group, through the U.S. Environmental Protection Agency and the U.S. Centers for Disease Control and Prevention.

The Lead Paint Alliance has an aspirational goal of all countries having laws in place by 2020 to control lead in paint.[38] Through the engagement of the Lead Paint Alliance and other supporting organizations, progress is being made toward this goal. Since 2013, the Lead Paint Alliance has sponsored an annual International Lead Poisoning Prevention Week of Action to raise awareness of lead exposure risks, with a special focus on lead paint. A number of countries have recently adopted or are in the process of adopting new laws to restrict lead paint, including India, Thailand, Cambodia, Ethiopia and Cameroon. In addition, the East African Community is in the process of amending its mandatory regional standards to further restrict the use of lead paint that its five member states (Kenya, Tanzania, Uganda, Rwanda and Burundi) are required to implement in their national regulatory systems.[39]

b. Private Sector Support for Elimination of Lead Paint

The private sector is playing a critical role in advancing the goals of the Lead Paint Alliance. The International Paint and Printing Ink Council (IPPIC), an association comprised of national paint and coating manufacturer's organizations that includes the American Coatings Association, is a member of the Lead Paint Alliance advisory committee. IPPIC issued a policy statement in 2009 supporting the widespread adoption of measures to regulate the use of lead in paint and printing ink, and called upon its member organizations to partner with the Lead Paint Alliance.[40]

Support is also growing among industry groups primarily operating in middle and low-income countries. Support from local industry is needed to encourage governments to pass laws to control lead in paint. For example, the Thai Paint Manufacturers Association, representing key exporters in the region, issued a letter of support for a ban

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[38] *Global Alliance to Eliminate Lead Paint: Business Plan,* 24 August 2012. Published in 2013., United Nations Environment Programme and World Health Organization; <http://web.unep.org/chemicalsandwaste/sites/unep.org.chemicalsandwaste/files/publications/GAELP_BusinessPlan.pdf>

[39] *Global Lead Paint Elimination Report*, *supra*, note 28.

[40] IPPIC, Statement of Support (2009) <http://www.ippic.org/advocacy/global_alliance_to_eliminate_lead_in_paints >

on lead in decorative paints in 2012.[41] By 2016, Thailand had adopted legal limits restricting lead paint.[42] Within the past year, several companies and numerous national and regional paint associations from all over the world have joined the Alliance.[43]

While further action is needed across the paint and coatings industry, individual paint manufacturers are also stepping up to advance the goals of the Lead Paint Alliance.[44] A leading multinational paint manufacturer in Switzerland, AkzoNobel, has called for elimination of lead paint for all uses by all manufacturers.[45] PPG, a Pittsburgh-based global producer, announced in 2016 its plans to eliminate the use of lead additives in all its products by 2020.[46]

c. Guidance and Sample Law for Regulating Lead Paint

Existing regulations of lead paint around the world take a number of forms and vary in scope. A control measure can restrict the total lead content in the product (e.g., limiting it to 90 ppm), the soluble lead content of a product (i.e., the amount of lead extracted under a particular acid test), or particular lead additives (e.g., restrict lead sulfates and lead carbonates). Each of these types of restrictions on lead in paint can vary in stringency, setting higher or lower acceptable limits of lead in paint. A regulatory regime may include testing and/or certification of the lead content of paint products in order to ensure compliance. A phase-out may incorporate a delay in the effective date of the restriction and/or make provision for stocks of lead paint that have already entered into commerce. In addition, some countries regulate lead only in paints and coatings for residential use (often called decorative, architectural, or consumer paints), while others also cover industrial uses.

To assist countries in navigating these regulatory choices and tailoring a control measure to the national context, UNEP, WHO and other partners in the Lead Paint Alliance are developing a Guidance and Sample Law. The Guidance and Sample Law are intended to help governments without lead paint laws to adopt clear, effective and readily implementable and enforceable measures to control lead paint exposures. The

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[41] "EU Helps Asia Paint a Lead-Free Future"Durability and Design News (October 16, 2012) <http://www.durabilityanddesign.com/news/?fuseaction=view&id=8559>

[42] "Thailand Institutes Lead Paint Regulation"IPEN (March 16, 2016). <http://www.ipen.org/news/thailand-institutes-lead-paint-regulation.

[43] The List of Current Partners of the Lead Paint Alliance includes dated copies of partner letters. <http://web.unep.org/chemicalsandwaste/what-we-do/technology-and-metals/lead/lead-paint-alliance/partners (accessed 3-27-17)>

[44] *Firms Phase Out Lead From Paints*, CHEMICAL WATCH: GLOBAL RISK & REGULATION NEWS, <https://chemicalwatch.com>.

[45] *Lead Free Extrusion Coatings - Part of Our Commitment to Offering Sustainable Products*, AKZONOBEL COIL & EXTRUSION AMERICAS (2015), <https://www.akzonobel.com/ccna/extrusion_coatings/leadfree/>.

[46] Rachel Dissell and Brie Zeltner, *Paint Giant PPG Announces it Will Phase Lead Out of its Products by 2020*, CLEVELAND.COM (Apr. 22, 2016), <http://www.cleveland.com/healthfit/index.ssf/2016/04/paint_giant_ppg_announces_phas.html>.

Guidance is a tool to support drafting measures that: 1) clearly define regulated substances, limits, and activities, 2) set effective dates of new requirements, 3) establish a mechanism to promote compliance, and 4) set clear consequences for non-compliance. The guidance is scheduled to be finalized in early summer 2017.

IV. ROLE OF THE ABA

The first element of the resolution urges national governments, the entities best-placed to regulate lead paint, to adopt laws to control the risks of lead paint exposure. Around the world, only about a third of countries currently regulate lead paint. Urging action to adopt lead paint laws is an important first step to addressing the global health threat from lead paint.

While calling on governments to adopt a phase out of the manufacture, import, and sale of lead paint that would prevent the introduction of new lead paint into commerce, the resolution does not proscribe the form or scope of measures to achieve that objective. A variety of approaches can effectively advance the aim of preventing children's exposure and minimizing occupational exposures to lead paint, and national governments are in the best position to tailor a measure to the national context. The report identifies a forthcoming resource, the Lead Paint Alliance's Guidance and Sample Law, to assist national authorities in developing appropriate measures.

The second element of the resolution voices ABA support for the goal endorsed by the Lead Paint Alliance to attain a phase out of lead paint by 2020, or as soon as possible. By recognizing this goal, the resolution emphasizes the urgency of action. While achieving the global adoption of controls on lead paint by all national governments by 2020 presents a significant challenge, the aspirational goal galvanizes enhanced action and provides an important target date to focus momentum. Where every year of avoided exposure may amount to significant benefits to childhood health and development, there is value to encouraging early actions.

Finally, the third element of the resolution aims to mobilize the tremendous legal resources of the ABA to support the achievement of the goal to eliminate lead paint globally. Legal professionals can play a critical role in advancing this goal. The Lead Paint Alliance recognizes that, while many countries are willing to adopt lead paint regulation, they lack the legislative authority and/or the regulatory experience needed to do so. Expert assistance to national governments can help overcome a key barrier to developing measures to control lead paint risks. The American Bar Association can help to direct legal resources to respond to this need for technical support. The ABA International Legal Resource Center, in collaboration with the UN Development Programme (UNDP), provides such technical legal assistance, and has previously supported assessment and reform of environmental laws. The resolution provides an opportunity to enhance ABA impact through existing mechanisms such as the International Legal Resource Center, drawing in new experts to provide needed pro bono support and raising the profile of such work with potential partners and recipients.

In addition, ABA members, law firms, ABA entities, and/or partner professional organizations may be in a position to support educational activities to promote awareness of the risks of lead paint exposure and encourage adoption of national measures to control the risks of

lead paint exposure. The ABA Rule of Law Initiative, with in-country representatives and strong networks among local stakeholders, is a significant resource to support implementation of the resolution. The ABA Section of International Law committees, which foster partnerships and develop programs in other jurisdictions, are another important asset in encouraging widespread adoption of national lead paint laws.

Through the resolution, the ABA advances its Goal IV on rule of law, by supporting the adoption of just laws. The resolution builds upon and is responsive to a 2007 ABA resolution, which urged governments and other actors to consider and integrate Rule of Law initiatives with global environmental issues[47], and a predecessor 2003 ABA resolution (reaffirmed in 2013), calling on the ABA to consider and promote sustainable development principles in the work of its entities.[48] The resolution encourages ABA entities, ABA members, and partner bar and other professional associations to advance rule of law and sustainable development principles in the context of the global risks of lead paint.

Respectfully submitted,

Sara P. Sanford

Chair, Section of International Law

August 2017

GENERAL INFORMATION FORM

Submitting Entity: Section for International Law

Submitted By: Sara P. Sandford, Chair, Section of International Law

1. Summary of Resolution(s).

The resolution urges national governments to adopt measures to control the risks of lead paint by phasing out its manufacture, import, and sale, and voices support for efforts to achieve worldwide adoption of such measures by 2020. The language of the resolution is formulated to track the aims of the "Lead Paint Alliance," a voluntary initiative led by the World Health Organization and the United Nations Environmental Programme, which includes representatives from the paint and coatings industry, NGOs, and the U.S. government. The resolution also aims to mobilize ABA members, ABA components, and other affiliates to support adoption of lead paint laws through awareness-raising and educational activities and pro-bono technical support.

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[47] *American Bar Association Report and Resolution* No. 110A*, Adopted By The House Of Delegates*, AMERICAN BAR ASSOCIATION (Aug 13-14, 2007),

[48] *American Bar Association Report and Resolution on Sustainable Development, Adopted By The House Of Delegates*, AMERICAN BAR ASSOCIATION (2003), *reaffirmed by American Bar Association Report and Resolution* No. 105 (Aug 12-13, 2013). <http://www.americanbar.org/content/dam/aba/migrated/intlaw/policy/environment/sustainabledevelopment.authcheckdam.pdf>.

2. Approval by Submitting Entity.

The Council of the Section of International Law approved this recommendation and resolution at its Meeting on April 29, 2017.

3. Has this or a similar resolution been submitted to the House or Board previously?

No.

4. What existing Association policies are relevant to this Resolution and how would they be affected by its adoption?

The Resolution is consistent with and mutually supportive of three existing ABA policies:

Rule of Law and Global Environmental Issues (07A110A);

Sustainable Development (91A10B); and

Environmental Equality. (93A109).

The Resolution would serve as a tangible example of the importance and impact of incorporating Rule of Law initiatives with global environmental issues, as called for by Resolution 07A110A. Second, the Resolution would demonstrate the ABA's continued commitment to sustainable development and incorporating that framework into the ABA's support for good governance and the rule of law. The Resolution thus advances core elements of Resolution 91A10B. Finally, the Resolution would manifest the concern for environmental equality espoused in Resolution 93A109, by placing a spotlight upon and seeking to address an environmental harm that falls disproportionately on the most vulnerable in middle- and low-income nations.

5. If this is a late report, what urgency exists which requires action at this meeting of the House? N/A

6. Status of Legislation. (If applicable) N/A

7. Brief explanation regarding plans for implementation of the policy, if adopted by the House of Delegates.

We have already initiated discussions with two key ABA partners regarding implementation of the policy, the ABA Rule of Law Initiative (ROLI) and the ABA International Legal Resources Center (ILRC). If the policy is adopted, ROLI believes it can support implementation of the resolution, particularly through its representatives in-country. In some countries, there may be scope to incorporate outreach and awareness-raising about lead paint laws into ROLI's engagement with local stakeholders.

ILRC also sees a potential role to support implementation of the policy. We will explore opportunities to ensure adequate resources, in the form of a committed roster of experts, is

available to provide technical support regarding lead paint laws. Furthermore, we will reach out to UNDP to discuss ways to increase provision of technical support regarding lead paint on a wider, more programmatic basis. If we successfully identify means for ROLI and/or ILRC to support the policy, UNEP North America has indicated it would be eager to highlight these efforts as voluntary pledges from the private sector at the UNEP General Assembly or other relevant fora.

Finally, in developing the Resolution and Report, we worked with ten different Committees (including one Taskforce) from across multiple sections of the ABA, including the Section for International Law, the Section for Energy, Environment, and Resources, and the Civil Rights and Social Justice Section. We would continue to engage with these supporting Committees to explore opportunities to implement the policy through ABA programs and cooperation with other bar associations and ABA partners.

8. Cost to the Association. (Both direct and indirect costs)

No direct cost. We would seek to implement the policy within the existing budget of the ABA components, and may seek outside support where appropriate to supplement those resources. We expect the primary indirect cost of implementation to be staff time at ROLI and ILRC.

9. Disclosure of Interest. (If applicable)

N/A.

10. Referrals.

This Resolution and Report is supported by two additional Sections of the ABA. On April 21, 2017 the Executive Committee of the Section for Energy, Environment, and Resources voted to support the policy, and subsequently ratified that decision at its Council Meeting on May 6, 2017. On April 28, 2017, the Section of Civil Rights and Social Justice Council voted to support the policy, conditional on certain stylistic edits that have since been adopted. This Resolution is also supported by the Young Lawyers Division and the Solo and Small Firm and General Practice Division.

11. Contact Name and Address Information. (Prior to the meeting. Please include name, address, telephone number and e-mail address)

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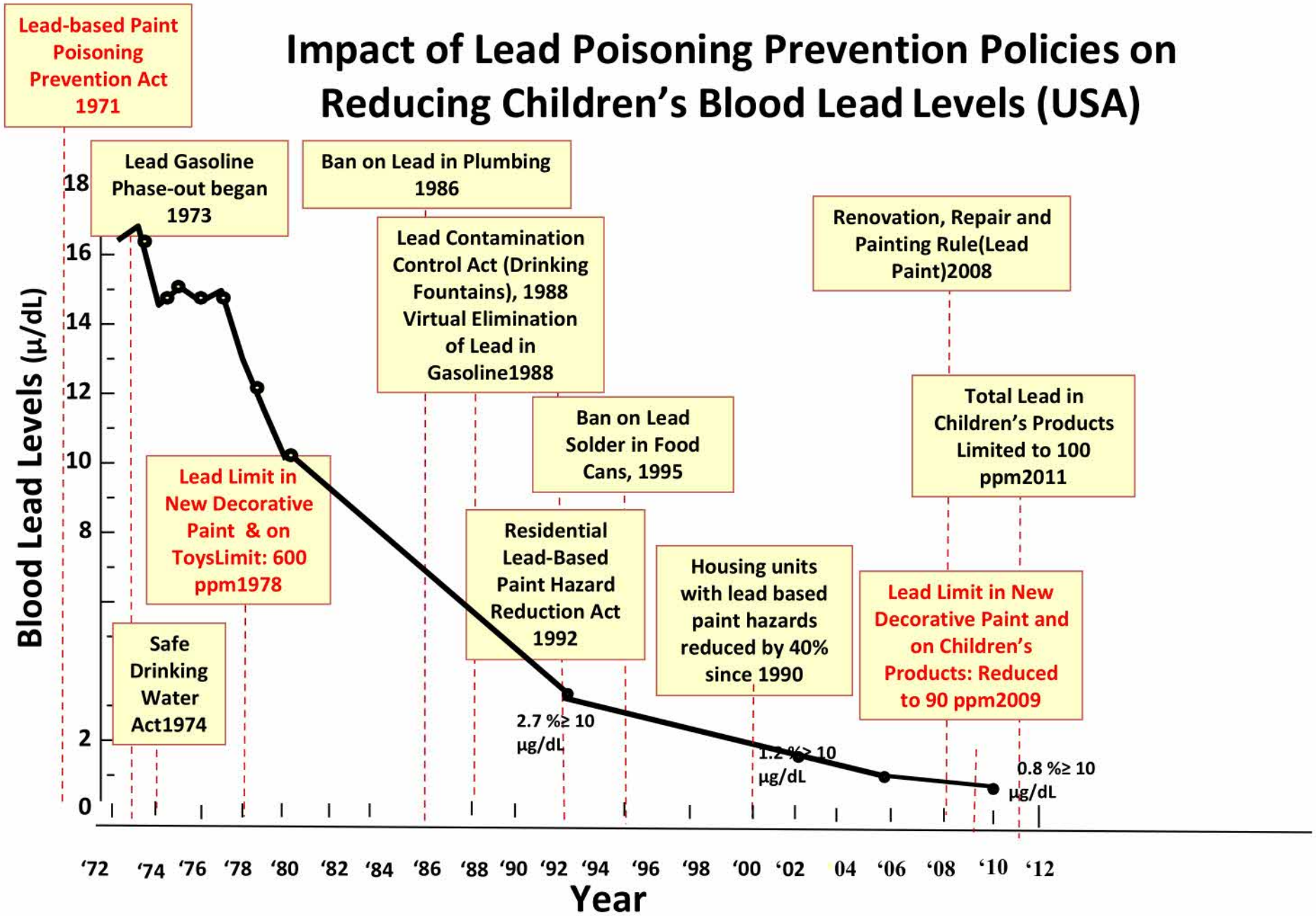
Impact of Lead Poisoning Prevention Policies on Reducing Children's Blood Lead Levels (USA)



U.S. Consumer Product Safety Commission
February 4, 2016
Recall of painted toy manufactured in Israel

KHS America Recalls Children's Musical Instrument Due to Violation of Lead Paint Standard

Monkey Glockenspiel

Pink bar with lead in the surface coating.

Name of product: Monkey Glockenspiel

Hazard: The pink metal note bar on the glockenspiel may contain excessive levels of lead in the paint, violating the federal lead paint standard. If the paint is scraped off and ingested lead can cause adverse health effects.

Remedy: Replace

Recall date: February 4, 2016

Units: About 150

Consumer Contact:

KHS America Green Tones at 800-283-4676 from 8:30 a.m. to 4:30 p.m. CT Monday through Friday or online at **www.gogreentones.com** and click on "Contact Us" for more information.

Recall Details

Description: The Green Tones 8-note Monkey Glockenspiel is a children's musical instrument with eight metal bars in multiple colors mounted on a wooden base shaped like a monkey. The bars are individually attached to the base with one screw at each end. The second bar from the top is pink, 3.5 inches long and has a "B" stamped on it. This is the bar that needs to be replaced. The Green Tones logo is stamped on the back of the glockenspiel and the tracking number HS0178410914 is printed in black at the bottom.

Remedy: Consumers should immediately remove the pink bar from the glockenspiel and contact KHS America for information on getting a free replacement pink bar.

Incidents/Injuries: None reported

Sold At: Independent toy and music retailers and online at amazon.com and gogreentones.com from January 2015 through September 2015 for about $40.

Importer(s): KHS America of Mt. Juliet, Tennessee

Manufactured In: Israel

Recall number: 16-094

Report an Incident Involving this Product

The U.S. Consumer Product Safety Commission is charged with protecting the public from unreasonable risks of injury or death associated with the use of thousands of types of consumer products under the agency's jurisdiction. Deaths, injuries, and property damage from consumer product incidents cost the nation more than $1 trillion annually. CPSC is committed to protecting consumers and families from products that pose a fire, electrical, chemical or mechanical hazard. CPSC's work to help ensure the safety of consumer products - such as toys, cribs, power tools, cigarette lighters and household chemicals -– contributed to a decline in the rate of deaths and injuries associated with consumer products over the past 40 years.

Federal law bars any person from selling products subject to a publicly-announced voluntary recall by a manufacturer or a mandatory recall ordered by the Commission.

To report a dangerous product or a product-related injury go online to www.SaferProducts.gov or call CPSC's Hotline at 800-638-2772 or teletypewriter at 301-595-7054 for the hearing impaired. Consumers can obtain news release and recall information at www.cpsc.gov, on Twitter @USCPSC or by subscribing to CPSC's free e-mail newsletters.

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 1 नवम्बर, 2016

सा.का.नि. 1030(अ).—केंद्रीय सरकार ने पर्यावरण (संरक्षण) नियम, 1986 के नियम 13 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उपधारा (1) और धारा 6 की उपधारा (2) के खंड (घ) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए प्रारुप नियम अर्थात् घरेलू और सजावटी पेंट में सीसा की मात्रा संबंधी विनियमन नियम, 2016 भारत के राजपत्र, असाधारण, संख्या सा.का.नि. 409(अ), तारीख 8 अप्रैल, 2016 द्वारा उन सभी व्यक्तियों और संगठनों से जिनके उससे प्रभावित होने की संभावना थी, उस तारीख से, जिसको उस राजपत्र की प्रति जिसमें यह अधिसूचना अंतर्विष्ट है, उपलब्ध करा दी गई थी, 60 दिन की अवधि की समाप्ति से पूर्व आक्षेप और सुझाव आमंत्रित करते हुए प्रारुप अधिसूचना प्रकाशित की गई थी ;

और उक्त प्रारुप से अंतर्विष्ट राजपत्र की प्रतियां आम जनता को 24 अप्रैल, 2016 को उपलब्ध कराई गई थी तथा संबंधित पणधारियों को, जिनके पते मंत्रालय के पास उपलब्ध थे, को भी प्रचालित की गई थी ;

और, उक्त प्रारुप अधिसूचना के उत्तर में प्राप्त आक्षेपों और सुझावों पर केन्द्रीय सरकार द्वारा सम्यक रूप से विचार किया गया ;

अतः केंद्रीय सरकार पर्यावरण (संरक्षण) नियम, 1986 के नियम 13 के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 और धारा 6 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, निम्नलिखित नियम बनाती है, अर्थात् :-

1. संक्षिप्त नाम और प्रारंभ.—(1) इन नियमों का संक्षिप्त नाम घरेलू और सजावटी पेंट में सीसा की मात्रा संबंधी विनियमन नियम, 2016 है।

(2) ये राजपत्र में उनके प्रकाशन की तारीख से एक वर्ष पश्चात् प्रवृत्त होंगे।

2. परिभाषा.—इन नियमों में, जब तक संदर्भ से अन्यथा अपेक्षित न हो, "घरेलू और सजावटी पेंट" से भवनों, दीवारों, सिविल निर्मितियों में आंतरिक और बाह्य धरातल परत सामग्रियों के रूप में उपयोग में लाए गए पेंट, घरेलू परियोजनाओं के लिए कोई उपभोक्ता उत्पाद अभिप्रेत हैं और इसके अंतर्गत भारतीय मानक ब्यूरों द्वारा प्रकाशित घरेलू और सजावटी पेंट के लिए भारतीय मानकों में यथाविहित एनैमल, प्राइमर, इंटीरियर, अंडरकोटिंग और फिनिशिंग रोगन सामग्रिया हैं।

3. कतिपय दशाओं में सीसा या सीसा सम्मिश्रणों के उपयोग का प्रतिषेध.—सुखाए गए पेंट फिल्म के भार के कुल अवाष्पशील मात्रा के भार के प्रति मिलियन (0.009 प्रतिशित) 90 भाग से अधिक सीसा या सीसा सम्मिश्रण (सीसा धातु के रूप में परिकलित) से अंतर्विष्ट घरेलू और सजावटी पेंट (जिसे इसमें इसके पश्चात् उत्पाद कहा गया है) का विनिर्माण, व्यापार, आयात और निर्यात एतद्द्वारा प्रतिषिद्ध है।

4. स्वत: प्रमाणन.—इन नियमों के प्रवृत्त होने की तारीख को या से विनिर्मित या आयातित घरेलू और सजावटी पेंट पर यह कथन करते हुए लेबल लगाया जाएगा कि सीसे की मात्रा प्रति मिलियन 90 भाग से अधिक नहीं है, ऐसा लेबल टिकाऊ और स्पष्ट होगा तथा –

(i) लेबल में, यथास्थिति, विनिर्माता या आयातकर्ता का नाम और पता अंतर्विष्ट होगा;

(ii) लेबल में, देश में, यथास्थिति, विनिर्माण या आयात की तारीख अंतर्विष्ट होगी।

5 नोडल अभिकरण.—(1) इन नियमों के उपबंधों के कार्यान्वयन के लिए केंद्रीय प्रदूषण नियंत्रण बोर्ड, नोडल अभिकरण होगा ।

(2) इन नियमों के कार्यान्वयन में किसी वाद या कठिनाई की दशा में मामला नोडल अभिकरण को निर्देशित किया जाएगा।

(3) नोडल अभिकरण, उसे सभी मामलों, जिसके अंतर्गत इन नियमों के कार्यान्वयन से संबंधित विवादित मामले हैं, पर सलाह देने के लिए किसी समिति का गठन कर सकेगा।

6. उत्पादों के परीक्षण के लिए प्राधिकृत अधिकरण.—केंद्रीय विद्युत अनुसंधान संस्थान, बेंगलुरु और उसके क्षेत्रीय केंद्र भोपाल, गुवाहाटी , हैदराबाद, कोलकाता, नागपुर, नासिक और नोएडा तथा पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय द्वारा समय-समय पर अधिसूचित कोई अन्य अभिकरण ऐसे परीक्षणों को करने के लिए प्राधिकृत होगा जो यह अवधारित करने के लिए आवश्यक समझते हैं कि क्या उत्पाद में नियम 3 में यथाविनिर्दिष्ट प्रति मिलियन 90 भाग से अनधिक सीसा अंतर्विष्ट है।

7. अनुपालन और परीक्षण प्रक्रिया.—अनुपालन और परीक्षण प्रक्रियाएं केंद्रीय प्रदूषण नियंत्रण बोर्ड द्वारा प्रमाणन अभिकरणों की सहायता से इन नियमों के प्रारंभ होने की तारीख से छह मास के भीतर तैयार की जाएंगी और प्रकाशित की जाएंगी।

8. अस्थायी उपबंध.—इन नियमों के प्रारंभ होने की तारीख से पूर्व विनिर्मित या आयातित घरेलू और सजावटी पेंट ऐसे प्रारंभ होने की तारीख से दो वर्ष के लिए विक्रय हेतु अनुज्ञात किए जाएंगे।

9. साधारण शर्तें.—निम्नलिखित शर्तें लागू होंगी, अर्थात्:-

(i) नियम 3 में यथाविनिर्दिष्ट घरेलू और सजावटी पेंट में सीसे की मात्रा से संबंधित अनुबंध इन नियमों के प्रवृत्त होने की तारीख को या से ही विनिर्मित या आयातित उत्पादों को लागू होंगे ;

(ii) प्रत्येक विनिर्माता या आयातकर्ता प्रतिवर्ष अपने उत्पाद का नियम 3 में यथाविनिर्दिष्ट सीसे की मात्रा के परीक्षण अपने उत्पाद को बाजार में लाने से पूर्व नियम 6 में वर्णित किसी एक प्राधिकृत अभिकरण से करवाएगा;

(iii) परीक्षण करने वाले अभिकरण परीक्षण रिपोर्टों को सत्यापन के लिए और यथापेक्षित कार्रवाई के लिए नोडल अभिकरण को प्रस्तुत करेंगे ; और

(iv) नोडल अभिकरण परीक्षण रिपोर्टों की प्रति संबंधित विनिर्माता या आयातकर्ता और पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय को देगा ।

[फा. सं. 7-21/2010-एचएसएमडी]

बिश्वनाथ सिन्हा, संयुक्त सचिव

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 1st November, 2016

G.S.R. 1030(E).—Whereas, the Central Government, in exercise of powers conferred by sub-section (1) of section 3 and clause (d) of sub-section (2) of section 6 of the Environment (Protection) Act, 1986 (29 of 1986), read with rule 13 of the Environment (Protection) Rules, 1986, published the draft rules namely, the Regulation on Lead contents in Household and Decorative Paints Rules, 2016 in the Gazette of India, Extraordinary, *vide number* G.S.R. 409(E), dated the 8th April, 2016 for inviting objections and suggestions from all persons and organisations likely to be affected thereby before the expiry of a period of sixty days from the date on which copies of the Gazette containing the said notification were made available to the public;

And whereas, the copies of the Gazette containing the said notification were made available to the public on the 24th April, 2016 and were also circulated to concerned stake holders whose addresses for communication were available with the Ministry;

And whereas, the suggestions or objections received in response to the above mentioned draft rules have been considered by the Central Government;

Now, therefore, in exercise of the powers conferred by section 3 and section 6 of the Environment (Protection) Act, 1986 (29 of 1986), read with rule 13 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following rules, namely:-

1. **Short title and commencement.**—(1) These rules may be called the Regulation of Lead Contents in Household and Decorative Paints Rules, 2016.

   (2) They shall come into force one year after the date of their publication in the Official Gazette.

2. **Definition**.—In these rule, unless context otherwise requires, "Household and Decorative Paints" means paints used as surface coating materials in interior and exterior of buildings, walls, civil structures, any consumer products meant for household purposes and shall include enamel, primer, interior, undercoating and finishing colouring materials as prescribed in the Indian Standards for Household and Decorative Paints published by the Bureau of Indian Standards.

3. **Prohibition of use of lead or lead compounds in certain cases.**—Any manufacture, trade, import and export of Household and Decorative Paints (hereinafter referred to as product) containing lead or lead compounds (calculated as lead metal) in excess of 90 parts per million (0.009 per cent.) of the weight of the total non-volatile content of the weight of the dried paints film is hereby prohibited.

4. **Self certification.**—Household and Decorative Paints manufactured or imported on or from the date these rules come into force shall be labeled stating that the lead contents does not exceed 90 parts per million, such labelling shall be durable and legible and -

(i) the label shall contain the name and address of the manufacturer or importer, as the case may be;

(ii) the label shall contain the date of manufacture or import into the country, as the case may be.

5. **Nodal agency.**—(1) The Central Pollution Control Board shall be the nodal agency for implementation of the provisions of these rules.

(2) In case of any dispute or difficulty in implementation of these rules, the matter shall be referred to the nodal agency.

(3) The nodal agency may constitute a Committee to advise it on all matters including the disputed matters, related to the implementation of these rules.

6. **Authorised agencies for testing of products**.—The Central Power Research Institute, Bengaluru and its regional centers at Bhopal, Guwahati, Hyderabad, Kolkata, Nagpur, Nashik and Noida and any other agency notified by the Ministry of Environment, Forest and Climate Change from time to time shall be authorised to carry out such tests as they deem necessary for determining whether a product contains lead not exceeding 90 parts per million as specified in rule 3.

7. **Compliance and testing procedures.**—The compliance and testing procedure shall be prepared and published by the Central Pollution Control Board, with the help of certification agencies within six months from the date of commencement of these rules.

8. **Transitory provision.—**Household and Decorative Paints manufactured or imported before the date of commencement of these rules shall be permitted for sale for the next two years from the date of such commencement.

9. **General Conditions.**—The following conditions shall be applicable, namely;-

(i) the stipulations relating to contents of lead in the Household and Decorative Paints as specified in rule 3 shall apply to products manufactured or imported on and from the date of coming into force of these rules;

(ii) every manufacturer or importer shall subject its product every year for testing of lead content as specified in rule 3 before bringing out its product in the market, from any one of the authorised agency mentioned in rule 6;

(iii) the testing agencies shall submit the test reports to the nodal agency for verification and action as may be required;

(iv) the nodal agency shall furnish a copy of the test reports to the concerned manufacturer or importer and the Ministry of Environment, Forest and Climate Change.

[F. No. 7-21/2010-HSMD]

BISHWANATH SINHA, Jt. Secy.

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The International Paint and Printing Ink Council, Inc.
IPPIC policy statement, downloaded May 3, 2018
https://ippic.org/advocacy-policy/#lead-paint-alliance

Lead Paint Alliance (LPA)

The International Paint and Printing Ink Council, Inc. (IPPIC) is a formal contributor to the Lead Paint Alliance (LPA, formerly the Global Alliance to Eliminate Lead Paint), an organization established under the United Nations Environmental Program (UNEP) and the World Health Organization (WHO). Since its inception in 2010, and with its reorganization in 2015, the LPA has been working to engage national governments, industry and non-governmental organizations in establishing restrictions on lead use in paints that pose public health and environmental risks, especially to children. The current action plan for the LPA seeks government action restricting lead use in paint. IPPIC's contribution to the LPA has been to highlight the widespread existing restrictions on lead use in paints and to encourage the adoption of similar restrictions by governments that currently have none.

In 2009, IPPIC established the following policy statement which remains the position of the organization:

"IPPIC supports the long-standing effectiveness of lead-use restrictions that are already in place in certain jurisdictions and recommends their widespread adoption by authorities not currently regulating the use of lead in paint and printing ink. Such restrictions may be accomplished through specific legislation or regulation, formal voluntary agreements, or by other means that ensure widespread and verifiable compliance."

As the LPA continues its efforts to address lead use in other coatings, IPPIC will work to ensure that any proposed restrictions align with existing established limits based on valid risk assessments, consider critical performance concerns for coatings specified by end users, and reinforce the efficacy of occupational health and environmental control practices.

For more information on the LPA and efforts to seek restrictions on decorative paints see:
https://www.unep.org/chemicalsandwaste/what-we-do/technology-and-metals/lead/global-alliance-eliminate-lead-paint

Module A

The Problem With Lead Paint

LEAD PAINT ALLIANCE

Outline

- Background
- Paint basics
- What components of paint can contain lead?
- Why lead paint is a problem?
- Summary
- References
- Point of contact

World Health Organization

LEAD PAINT ALLIANCE

Background

- Lead paints contain lead compounds that are added to give certain properties to the paint
- Lead paints are still widely available and used in many countries
- Uses include decoration of interior and exterior surfaces in homes and public buildings, on roads and bridges, and also on toys, furniture and playground equipment
- Water-based paints rarely contain intentionally-added lead

The term paint is used to also include varnishes, lacquers, stains, enamels, glazes, primers, and coatings.

Paint basics - categories

- Paint is sometimes categorized by its solvent base
  - Water-based paint: commonly called latex paint
  - Organic solvent-based paint: commonly called alkyd paint
- Paint is sometimes categorized by its intended use, e.g.
  - Decorative paints
  - Industrial paint
- Some paints are categorized by their finish, e.g.
  - Enamel paint: hard, glossy and opaque finish

Paint basics - ingredients

- Pigment and fillers
  - Provide colour, hiding power and control gloss
  - Fillers are special pigment materials sometimes added to provide opacity and thickness of the paint
- Resin
  - Functions as a binder to hold the pigment particles together and provide adhesion to the surface painted
- Solvent
  - Acts as a carrier for the pigments and resin

Paint basics - ingredients

- Drying agent (drier)
  - The drying agent is added to some solvent-based paints to catalyze the reaction resulting in hardened cross-linked polymer networks that bind the pigment to the painted surface
  - The result is often a dried paint with a hard, glossy surface
- Other additives
  - A variety of substances can be added to the paint to enhance the paint's properties, such as ease of brushing, scuff resistance, sag resistance, corrosion resistance and increased durability

Reference Ai1

Lead compounds have a range of functions in paint

- **Pigments -** The most commonly used lead pigments are lead chromates and lead molybdates which are bright yellow, orange or red in color

- These pigments can also be used in a mixture with pigments of other colours to produce bright colours such as green and purple

- Lead carbonates and lead sulphates can be used as white pigments, but are rarely used since lead-free alternatives perform better

Lead compounds have a range of functions in paint

- **Drying agents and catalysts -** e.g. lead naphthenate and lead octanoate
- **Corrosion resistance agents** - Added to paints used on metal surfaces, e.g. lead tetroxide (also called red lead or minium)
- **Unintentional contamination -** Trace quantities of lead may sometimes be present in the fillers and other earth-based ingredients that are used in paint formulation.
- Alternative, non-lead compounds can perform as well as lead-based ones and the paint is of equivalent quality (see module E)

Contribution of components to the lead content of paint

- Concentration is expressed in terms of the proportion of lead to the weight of the total non-volatile part of the product, or of the weight of the dried paint film
- A range of units may be used e.g. ppm, %, µg/g, mg/kg
  - 90 ppm = 0.009% = 90 µg/g = 90 mg/kg
- Lead-based pigments may contribute around 1500 to >100,000 ppm, depending on whether they are mixed with other pigments or used alone
  - Red and yellow paints may have particularly high lead content

Contribution of components to the lead content of paint

- Lead-based driers may contribute around 1,200 to 6,000 ppm or more, depending on whether they are mixed with other driers

- Where there is unintended contamination, this typically contributes ≤90 ppm, though sometimes more – thus 'lead-free' paints may still contain a small amount of lead

Reference A.i.2

- Information on the actual lead content found in country-based studies of paint is presented in Module F

Types of paint that may contain lead

- **Decorative paints** (also called architectural paints, home or residential paints) - used on the exteriors of buildings such as houses, schools and commercial premises, and on interior surfaces such as walls, ceilings, floors, windows and trim
- **Coatings** – used in the manufacture of toys, pencils, furniture and other household items
- **Glazes** – used on pottery e.g. food containers, cups, bowls, cooking pots

World Health Organization

LEAD PAINT ALLIANCE

Types of paint that may contain lead

- **Rust and corrosion resistant paints** - used on metal structures e.g. on school playground equipment, bridges, oil rigs
- **Industrial paints** e.g. used as coatings for automobiles, equipment, plastic components, painting road markings etc
- **Artist's paint** – specialized oil paints containing lead pigments, usually exempted from regulatory controls

World Health Organization

LEAD PAINT ALLIANCE

Why is lead paint a problem?

- Lead paint is a source of lead exposure during its manufacture, application and removal
- Lead paint breaks down over time, fragmenting into flakes and dust that can contaminate the domestic environment

- Lead is persistent in the environment, and when released can remain there indefinitely
- Lead paint can leave a legacy of potential human exposure for many years into the future

World Health Organization

LEAD PAINT ALLIANCE

Why is lead paint a problem?

- **Lead paint** that is peeling, chipping, chalking or cracked is a health hazard, however, intact lead paint in good condition is usually not a hazard

- **Lead dust** is created when lead paint is scraped, dry sanded, heated or burned, or when painted surfaces rub together. Lead chips and dust can settle on surfaces and objects that people touch. Settled lead dust can re-enter the air when people vacuum, sweep, or walk through it. Dust from lead paint can contaminate soil

- **Lead in soil** can be a source of exposure when children play on the ground, or when people bring soil into the house on their shoes. Plants can absorb lead from the soil and it can enter the food chain. Lead present in soil may also migrate into underground water in certain circumstances

Why is lead paint a problem?

- Exposure to lead from paint from inhalation and ingestion can cause significant health impacts, including damage to the brain and nervous system resulting in decreased IQ and behavioural problems
- Children are especially vulnerable to lead exposure and toxic effects
- Lead also causes significant burden of disease
- Lead released into the environment is readily transported through air and water and has toxic effects on both terrestrial and aquatic organisms

For additional information about the health and environmental impacts of lead refer to Modules B.i. and B.ii.

Summary

- Lead paint can contain a range of lead compounds for different purposes
- Lead paint can cause a long-lasting hazard to health in all age groups, however, children are especially vulnerable
- Paints are available that do not contain lead compounds while still having the required properties, such as colour, corrosion resistance etc
- Eliminating lead paint provides a net benefit to society and public health

References

Based upon a presentation given at the Global Alliance to Eliminate Lead Paint Workshop on Establishing Legal Limits on Lead in Paint, 22 – 23 September 2014, New Delhi, India. Adapted for inclusion in the Lead Paint Alliance "Toolkit" for Governments, April 2015

A.i.1. Eliminate lead paint: protect children's health
http://ipen.org/sites/default/files/documents/Eliminate_Lead_Paint_Protect-Childrens_Health_Africa_Feb_2015.pdf

A.i.2. UNEP/IPEN Lead in enamel decorative paints. National paint testing results in a nine country study (2013)
http://www.unep.org/chemicalsandwaste/Portals/9/Mercury/Documents/publications/Lead_in_Enamel_decorative_paints.pdf

World Health Organization

LEAD PAINT ALLIANCE

Point of contact

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Date April 2015

World Health Organization

LEAD PAINT ALLIANCE

Module Bi

Health Hazards of Lead

LEAD PAINT ALLIANCE

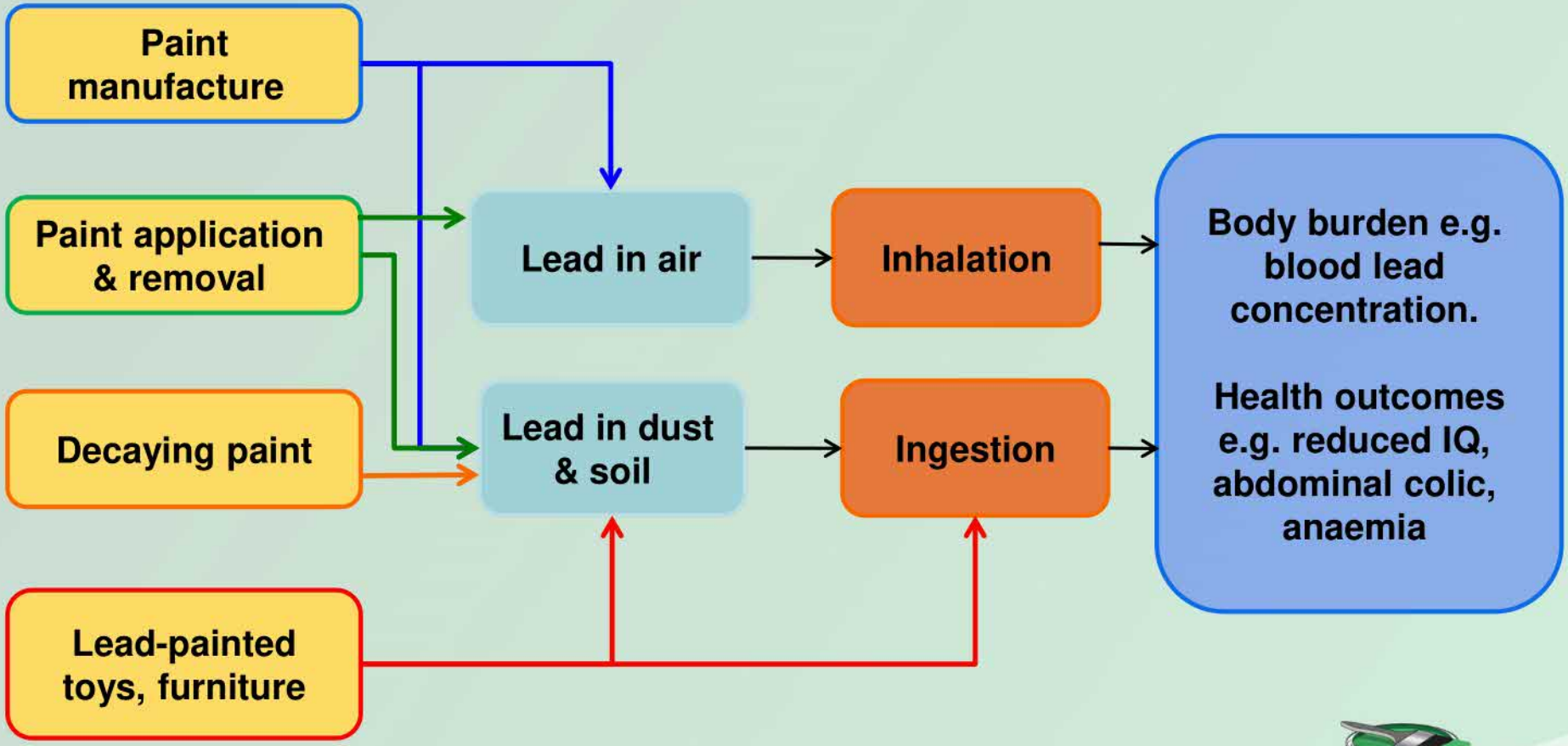
Outline

- Sources and routes of exposure
- Health effects
- Who is at risk?
- Societal impact of lead
- Economic and health impacts of control measures
- Summary
- References
- Point of Contact

World Health Organization

LEAD PAINT ALLIANCE

Pathways of exposure to lead from paint



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2 main routes of exposure to lead

- **Inhalation** of fine particles and fumes e.g. from sanding or burning lead paint

- **Ingestion** of dust and paint chips
  - Children with pica are at particularly high risk
  - Picture is a radiograph of a child with lead poisoning from eating lead paint, showing paint chips dispersed throughout the gut

Figure 2 – A large quantity of lead paint chips can be seen in this radiograph of the abdomen and pelvis of a 2-year-old boy with lead poisoning.

Reference B.i.1

World Health Organization

LEAD PAINT ALLIANCE

Lead accumulates in the body

- Bound to red blood cells and distributes to soft tissues and bone
- Stored in bone for many years (half-life = 10 – 25 years)
  - In adults 90% of body burden may be in bone
- Equilibrium between lead in bone and lead in blood
- Lead in bone is probably not physiologically active but provides a store from which lead can move back into blood and to target organs
  - Lead can remobilize from bone during pregnancy, lactation and the menopause

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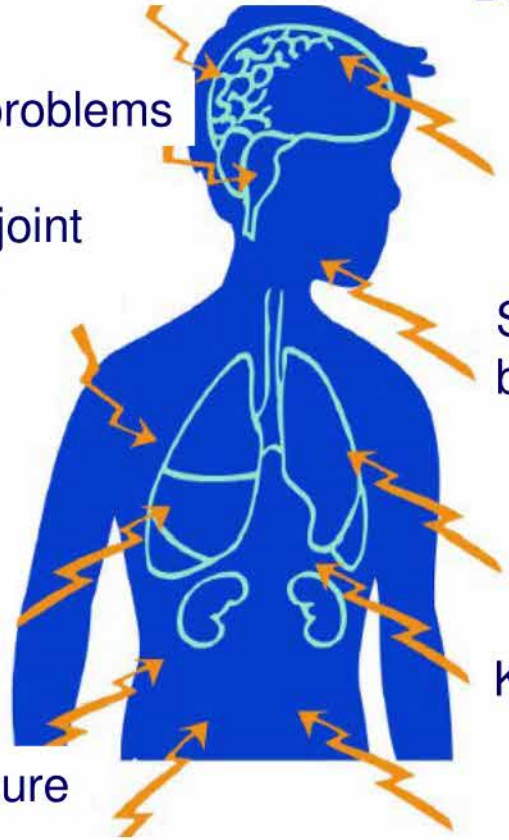
Lead is a multi-system toxicant



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Features of lead poisoning may be non-specific

- Low-level exposure – features of poisoning may be subtle e.g. reduced IQ, impaired hearing, increased risk of hypertension
- Features of overt poisoning include: anorexia, colic, constipation, fatigue, mood changes, anaemia and developmental regression in young children
- Lead poisoning may be misdiagnosed e.g. as appendicitis, psychiatric illness

World Health Organization

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Lead poisoning can be life-threatening

- High dose acute/sub-acute exposure can cause lead encephalopathy with irritability, ataxia, coma, convulsions, death
  - e.g. >400 children have died in NW Nigeria from environmental exposure to lead
- Severe lead poisoning is possible from repeated ingestion of lead paint chips (pica)

World Health Organization

LEAD PAINT ALLIANCE

Who is at risk? Children

- Children are especially vulnerable
- Children have greater exposure:
  - Hand-to-mouth activity, mouthing objects
  - Consume more food and drink, and breathe more air per kg body weight than adults
  - Absorb 4-5 times more lead from the gut than adults
  - Nutritional deficiency, e.g. iron, increases bioavailability of lead
- Exposure may already occur *in utero*

World Health Organization

LEAD PAINT ALLIANCE

Who is at risk? Children

- Foetal period and early childhood are critical periods for neurological and other organ development
- Damage to the neurological system may be permanent
  - Reduces a child's potential for intellectual development
  - Increases the likelihood of behavioural disorders
- Children have more years of future life for expression of long-term effects

Who is at risk? Pregnant women

- Pregnancy mobilizes lead stored in bone so further exposure from the environment raises the blood lead concentration even higher
- Increased risk of hypertension during pregnancy – may result in pre-eclampsia
- Exposure of pregnant women can result in exposure of the fetus – may cause reduced fetal growth

Who is at risk? Other adults

- Most adult exposures are occupational e.g. manufacturing lead paint, stripping paint using unsafe methods, recycling lead-containing materials

- Non-occupational exposure can occur in the home from house paint that has flaked or chalked as it has aged or been disturbed during home renovations, or from the use of lead paints and metal in hobbies and crafts

World Health Organization

LEAD PAINT ALLIANCE

No known threshold for toxic effects – National Toxicology Program assessment of evidence

Table 1.1: NTP conclusions on health effects of low-level Pb by life stage

Life Stage	Blood Pb Level	NTP Conclusion	Principal Health Effects	Bone Pb Evidence
Children	<5 µg/dL	*Sufficient*	Decreased academic achievement, IQ, and specific cognitive measures; increased incidence of attention-related behaviors and problem behaviors	Tibia and dentin Pb are associated with attention-related behaviors, problem behaviors, and cognition.
		Limited	Delayed puberty and decreased kidney function in children ≥12 years of age	The one available study of bone Pb in children does not support an association with postnatal growth.
	<10 µg/dL	*Sufficient*	Delayed puberty, reduced postnatal growth, decreased IQ, and decreased hearing	No data
		Limited	Increased hypersensitivity/allergy by skin prick test to allergens and increased IgE* (not a health outcome)	No data
		Inadequate	*Any age* – asthma, eczema, nonallergy immune function, cardiovascular effects; *<12 years of age* – renal function	No data
Adults	<5 µg/dL	*Sufficient*	Decreased glomerular filtration rate; maternal blood Pb associated with reduced fetal growth	The one available study of bone Pb in the general population supports an association between bone Pb and decreased kidney function. Maternal bone Pb is associated with reduced fetal growth.
		Limited	Increased incidence of essential tremor	No data
	<10 µg/dL	*Sufficient*	Increased blood pressure, increased risk of hypertension, and increased incidence of essential tremor	The association between bone Pb and cardiovascular effects is more consistent than for blood Pb.
		Limited	Psychological effects, decreased cognitive function, decreased hearing, increased incidence of ALS, and increased cardiovascular-related mortality; maternal blood Pb associated with increased incidence of spontaneous abortion and preterm birth	The association between bone Pb and cognitive decline is more consistent than for blood Pb.
		Inadequate	Immune function, stillbirth, endocrine effects, birth defects, fertility or time to pregnancy**, sperm parameters**	No data

Abbreviations: ALS, amyotrophic lateral sclerosis; IgE, immunoglobulin E; IQ, intelligence quotient

*Increased serum IgE is associated with hypersensitivity; however, as described in Section 1.4.3, increased IgE does not equate to disease.

**The NTP concludes that there is *inadequate* evidence that blood Pb levels <10 µg/dL are associated with fertility, time to pregnancy, and sperm parameters; however, given the basis of the original nomination, the NTP evaluated the evidence that higher blood Pb levels (i.e., >10 µg/dL) are associated with reproductive and developmental effects, and those conclusions are discussed in Section 1.4.6 and presented in Table 1.2.

Reference B.i.2

Lead causes significant burden of disease

- 0.6% of global burden disease
- 143,000 deaths per year
- 8.977 million disability adjusted life years (DALYs)
  - 7.2 million DALYs – mild mental retardation
  - 1.8 million DALYs – cardiovascular disease
- Childhood lead exposure contributes ~ 600,000 new cases of children with intellectual disabilities per year

Reference B.i.3

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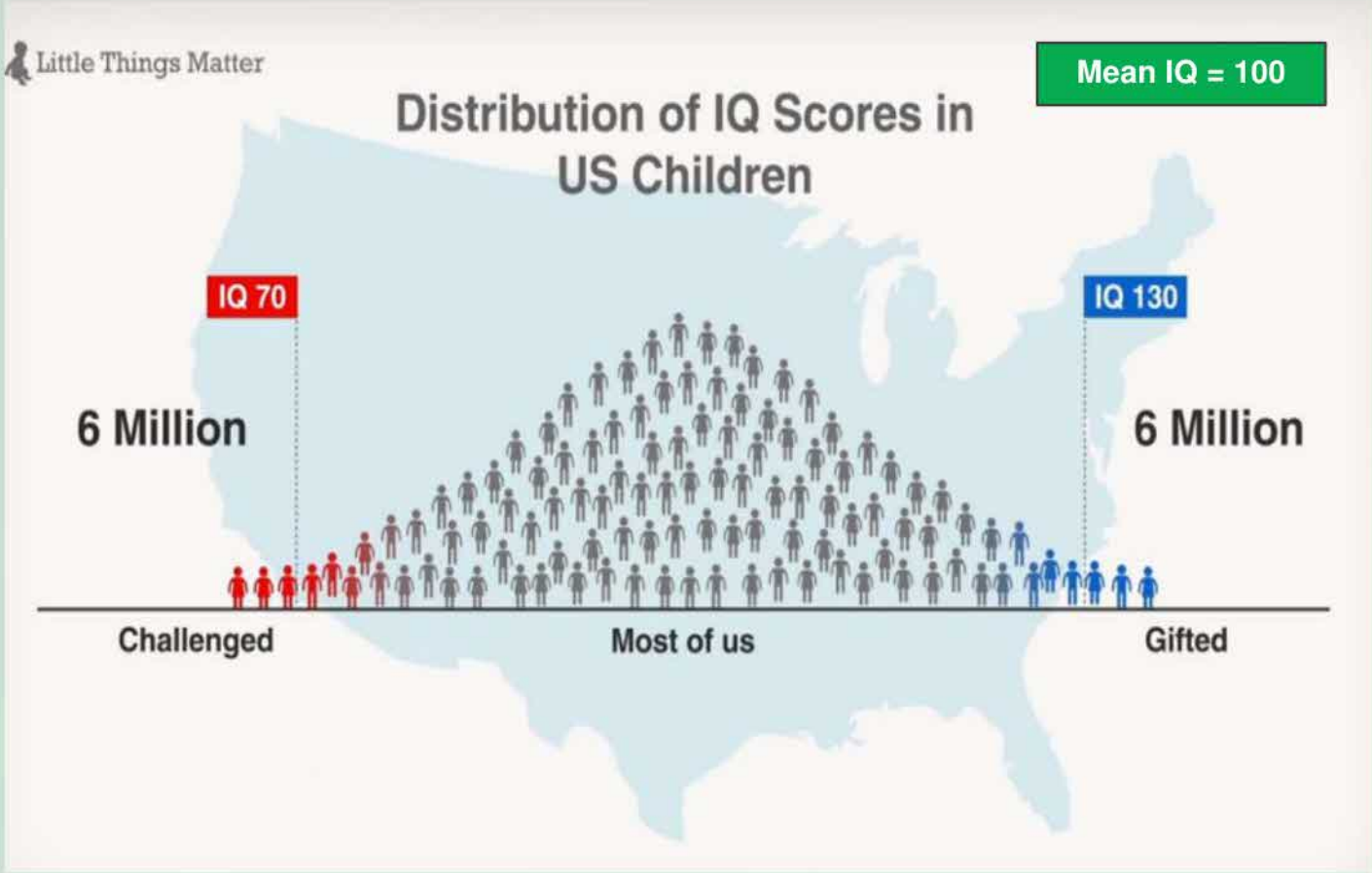
Small IQ reduction has significant societal impact (1)



Reference B.i.4

World Health Organization

LEAD PAINT ALLIANCE

Small IQ reduction has significant societal impact (2)

Reference B.i.4

World Health Organization

LEAD PAINT ALLIANCE

Economic costs of lead exposure are high

- Estimated economic losses due to reduced IQ from preventable lead exposure is approx 1.2% of global GDP
- Largest economic burden of lead exposure is borne by low and middle income countries
- Economic losses by region (in international dollars):
  - Africa: $ 134.7 billion
  - Asia: $ 699.9 billion
  - Latin America & Caribbean: $ 142.3 billion
  - USA $ 50.9 billion

Reference B.i.5

World Health Organization

LEAD PAINT ALLIANCE

Economic benefits of action can be substantial

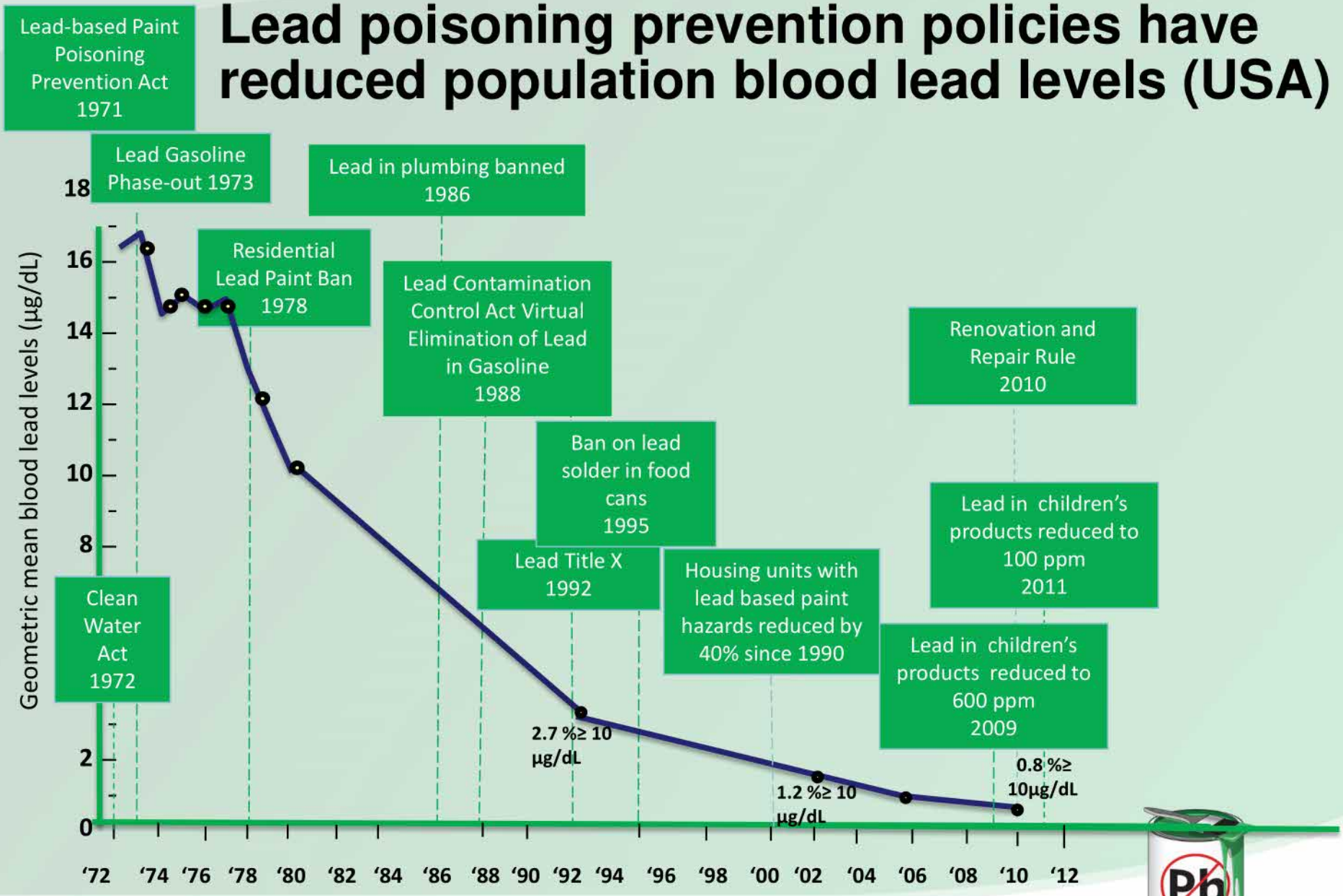
- In USA estimated cost of lead paint hazard control is US$ 1-11 billion
- Lead hazard control has benefits e.g. reduced health care costs, reduced need for special education, reduced crime, increased earnings and tax revenue
- Total saving estimated as US$ 192 – 270 billion
- Each US$ 1 invested in lead paint hazard control yields return of US$ 17 – 221

Reference B.i.6

World Health Organization

LEAD PAINT ALLIANCE

Lead poisoning prevention policies have reduced population blood lead levels (USA)



Reference B.i.7

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LEAD PAINT ALLIANCE

Summary

- Lead exposure causes toxic effects in multiple body systems; some effects are permanent
- Lead exposure has both a personal and a societal impact
- Lead poisoning is preventable: implementation of lead control measures has significantly reduced population-level blood lead concentrations
- Removing lead paint as a source of exposure will have significant health and economic benefits

World Health Organization

LEAD PAINT ALLIANCE

References

Originally presented at the Global Alliance to Eliminate Lead Paint Workshop on Establishing Legal Limits on Lead in Paint, 22 – 23 September 2014, New Delhi, India. Updated and expanded for inclusion in the Lead Paint Alliance "Toolkit" for Governments. April 2015

B.i.1. Daubert GP (2006). Lead poisoning in a young boy. Consultant for Pediatricians. 5(3):147-149. Picture reproduced with permission

B.i.2. National Toxicology Programme (2012) NTP evaluation of effects of low-level lead http://ntp.niehs.nih.gov/pubhealth/hat/noms/lead/index.html

B.i.3. Prüss-Ustün A et al (2011) Knowns and unknowns on burden of disease due to chemicals: a systematic review. Environmental Health 10:9. http://www.ehjournal.net/content/10/1/9

B.i.4. Little things matter (2014). Canadian Environmental Health Atlas https://www.youtube.com/watch?v=E6KoMAbz1Bw. Images reproduced with permission.

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LEAD PAINT ALLIANCE

References

B.i.5. Attina TM, Trasande L (2013) Economic Costs of Childhood Lead Exposure in Low- and Middle-Income Countries. Environ Health Perspect 121(9): 1097-1102 http://ehp.niehs.nih.gov/1206424/?utm_source=rss&utm_medium=rss&utm_campaign=1206424

B.i.6. Gould E (2009) Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. Environ Health Perspect 117: 1162-1167. http://ehp.niehs.nih.gov/0800408/

B.i.7. Brown MJB, Falk, H (2015) US Centers for Disease Control and Prevention, personal communication

World Health Organization

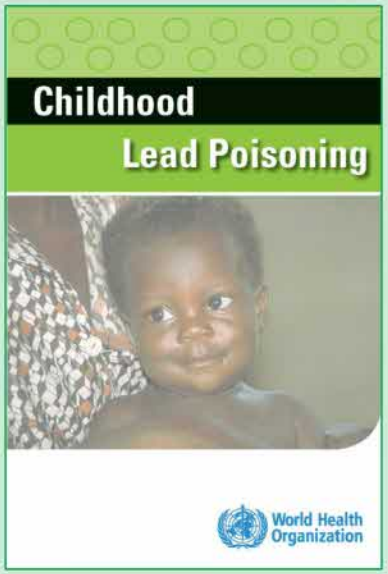
LEAD PAINT ALLIANCE

References

General references

B.i.8. Childhood Lead Poisoning
http://www.who.int/ceh/publications/childhoodpoisoning/en/

B.i.9. Lead poisoning and health, Fact sheet No 379, (in Arabic, Chinese, English, French, Russian and Spanish)
http://www.who.int/mediacentre/factsheets/fs379/en/



World Health Organization

LEAD PAINT ALLIANCE

Point of Contact

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World Health Organization

LEAD PAINT ALLIANCE

Module D

Industry Perspective on the Elimination of Lead Paint

LEAD PAINT ALLIANCE

Outline

- Introduction to International Paint and Printing Ink Council (IPPIC)
- IPPIC Commitment to Lead Paint Alliance (LPA)
- Industry Conformance with Existing Legal Requirements
- Technical Feasibility
- Additional Lead Hazard Controls
- Case Studies: Current Industry Collaboration with Governments
- Path Forward: Continued Industry Contributions
- Point of Contact

LEAD PAINT ALLIANCE

Introduction to IPPIC

- ***IPPIC is a global council of national trade associations representing the paint and printing ink industries***

- Established in 1992
  - Networking
  - Information sharing
  - Policy development at national/international level

- Formal Consultative Status with the UN (ECOSOC) in 2003

LEAD PAINT ALLIANCE

"IPPIC Network" Secretariat (ACA)

The Americas

- ACA (USA)*
- ANAFAPYT(Mexico)*
- CPCA (Canada)*
- ABRAFATI (Brazil)*

LatinPIN (Americas)
Argentina
Colombia
Uruguay
Ecuador

Europe

CEPE (EU)*

FIPEC (France)*
BOSAD (Turkey)*
VdL (Germany)*
BCF (UK)*
IVP (Belgium)
DFL (Denmark)
PUPVPIM (Greece)
ASEFAPI (Spain)
AVISA (Italy)
GFCV (Luxemburg)
VVVF (Netherlands)
MLF (Norway)
FCIO (Austria)
APFTV (Portugal)
VSLF (Switzerland)
VTY/PVY (Finland)
SVEFF (Sweden)

Africa/Asia/Pacific

- APMF (Australia)*
- CNCIA (China)*
- IPA (India) *
- JPMA (Japan)*
- SAPMA (South Africa)*
- NZPMA (New Zealand)*

APIC (Asia)
TPMA (Thailand)
SLPMA (Sri Lanka)
SPMA (Singapore)
PPMA (Pakistan)
IPMA (Indonesia)
MPMA (Malaysia)
KPMA (Korea)
PAPM (Philippines)

* IPPIC Member

I · P · P · I · C

LEAD PAINT ALLIANCE

Introduction to IPPIC

- Global Issue Management for IPPIC
  - Lead Paint Alliance (LPA, formerly the Global Alliance to Eliminate Lead Paint, or GAELP)
  - Sustainability
  - United Nations (UN) Transport of Dangerous Goods (TDG)
  - UN Globally Harmonized System for the Classification and Labelling of Chemicals (GHS)
  - Nanotechnology
  - International Agency for the Research on Cancer (IARC)
  - Marine Coatings Issues
- Biannual Coatings Summit and Global Marine Coatings Forum
- Sponsors of the Global Paint and Coatings Industry Market Analysis

LEAD PAINT ALLIANCE

IPPIC Resolution on Restricting Use of Lead in Paint (2008)

"IPPIC supports the long-standing effectiveness of lead-use restrictions that are already in place in certain jurisdictions and recommends their widespread adoption by authorities not currently regulating the use of lead in paint and printing ink.

Such restrictions may be accomplished through specific legislation or regulation, formal voluntary agreements, or by other means that ensure widespread and verifiable compliance."

LEAD PAINT ALLIANCE

IPPIC's Commitment to LPA

- Increase industry understanding of the potential human health and environmental risks associated with continued use of lead in paint
- Reinforce the technical reformulation requirements that:
  - Allow for compliance with (applicable) lead use restrictions in paint
  - Provide for alternative products that meet performance requirements
- Establish a "level playing field" for manufacturers by actively engaging governments (and their associated regulatory agencies or official agents) in the development and enforcement of lead use restrictions

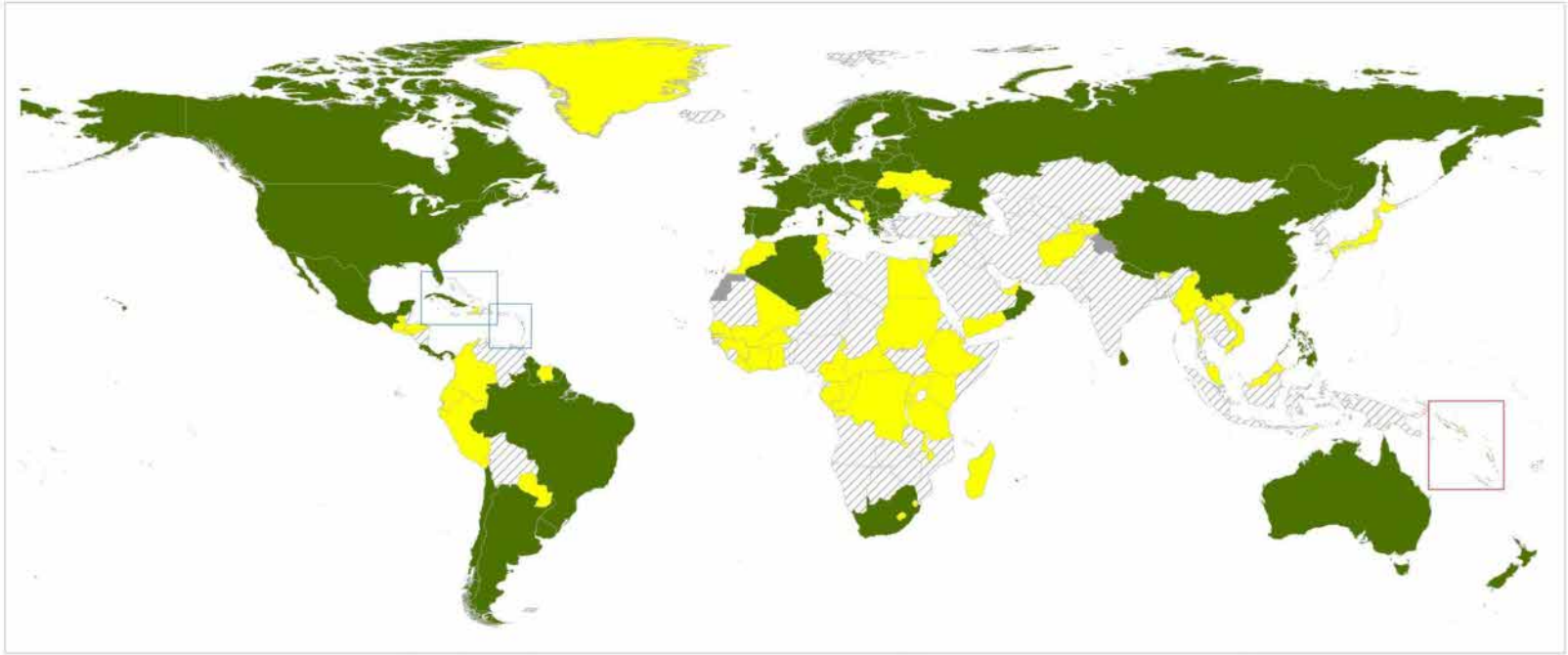
LEAD PAINT ALLIANCE

Industry Conformance with Existing Legal Requirements

- Historical evolution of lead restrictions has tracked with "awareness" of the problem:
  - Ingestion of "paint chips" by children
    - Lead dust from "deferred maintenance"
  - Worker exposure to lead
    - Occupational safety and health considerations
  - Environmental impacts
    - Air pollution control (i.e. structural steel painting)
    - Waste management

LEAD PAINT ALLIANCE

COUNTRIES WITH LEGALLY BINDING CONTROLS ON LEAD PAINT – BASED ON INFORMATION RECEIVED FROM GOVERNMENTS BY 31 JULY 2015



Countries with legally binding controls

- Legally binding controls
- No legally binding controls
- No data
- Not applicable

Data Source: Governments
Admin. Boundaries: World Health Organization.
Map Production: Public Health, Social and Environmental Determinants of Health, WHO

Disclaimer : The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

LEAD PAINT ALLIANCE

Decorative Paints

Conformance with Existing Legal Requirements

- From IPPIC Global Market Analysis – Global TOTAL decorative paint production is 20 billion liters annually
  - Europe produces 31% of the global total
  - North America produces 23% of the global total
  - Asia Pacific produces 30% of the global total
    - 20% of this production in Asia Pacific is in “unregulated” countries
  - Latin America produces 9% of the global total
    - 33% of this production is in “unregulated” countries
  - Rest of the World (ROW) produces 7% of the global total
    - 28% of this production is in “unregulated” countries
  - **SUMMARY – 11% of global production of decorative paints is done in countries that do not regulate the use of lead**

LEAD PAINT ALLIANCE

Decorative Paints

Conformance with Existing Legal Requirements

- While 11% of the global production of decorative paints is done in countries where lead use is not regulated …***this does not mean that all of this production contains lead:***
  - Typically, more than half of this production is "waterborne" paint, **with no intentionally added lead content**
  - A large portion of the remaining production is "oil paint", where lead ***may*** continue to be used
  - Available studies indicate that roughly 2/3 of brands of paint sampled contained lead in concentrations above 600 ppm
    - NOTE: In these studies, sample selection was done specifically to test certain colors of decorative oil paint known to have a high potential for showing added lead content. Such sampling is not representative of the total decorative paint market.

LEAD PAINT ALLIANCE

Decorative Paints

Conformance with Existing Legal Requirements

- Consequently, while it is difficult to precisely estimate the volume of lead-containing decorative paint that continues to be manufactured and used, several important points can be made from the available data:
  - **Globally most (estimated at more than 95%) decorative paint production does not contain lead**
  - While **lead-containing paints likely comprise less than 5% of the global production,** they are significantly more likely to be found in the "unregulated" countries

LEAD PAINT ALLIANCE

Decorative Paints

Conformance with Existing Legal Requirements

- **Bottom Line**
  - **IPPIC and its member associations support restrictions on lead in decorative paints**
    - **Governments with established restrictions have largely eliminated lead use in 95% of global decorative paint production**
  - ***Globally*, decorative paints without added lead are widely available**
    - **Continued lead use in decorative paints is primarily centered on production done by Small and Medium-sized Enterprises (SME's)**
  - **Reformulation of decorative paints is feasible to eliminate lead use**
    - **Technical and cost impacts are manageable**

LEAD PAINT ALLIANCE

Technical Feasibility to Reformulate

- **Lead pigments**
  - **Primary pigments** (for "hiding" the surface) in the past included the use of LEAD CARBONATE ("white lead"), but this is an antiquated technology. There are many non-lead substitutes in wide use globally. **FEASIBLE TO REFORMULATE**
  - **Color pigments** (generally yellow, orange, red and green colors) containing lead compounds can be substituted with non-lead metallic and organic pigments. Such substitutes are widely available, but at some increased cost to manufacturers. **FEASIBLE TO REFORMULATE**
  - **Corrosion control pigments** for **industrial paints,** such as LEAD CHROMATE are ***still in widespread global use***, but only in concert with a "lead safety net" of worker protection and environmental controls. Non-lead alternatives are widely available, but must meet key performance criteria for certain end uses (a customer-driven requirement). **FEASIBLE TO REFORMULATE, *but with constraints***

LEAD PAINT ALLIANCE

Technical Feasibility to Reformulate

- **Lead driers** – used to accelerate the "set-up" (drying) of solvent-based paints, such as LEAD NAPTHENATE. Non-lead substitutes are widely available, generally other organometallic compounds. **FEASIBLE TO REFORMULATE**

- **Lead-containing additives** - include catalysts and other specific compounds that impart special properties to the paint or components of the paint (i.e. resin). Non-lead substitutes are widely available. **FEASIBLE TO REFORMULATE**

LEAD PAINT ALLIANCE

Technical Feasibility

- **Lead compounds referenced by the LPA**
  - **PIGMENTS**
    - **PRIMARY** - Lead carbonate (white lead; 1319-46-6);
    - **COLOR/CORROSION** - Lead monoxide (1317-36-8), Lead chromate (7758-97-6), Lead sulfate (7446-14-2), Lead molybdate (10190-55-3), Lead sulfo-chromate yellow (1344-37-2); Lead chromate molybdate sulfate red (12656-85-8)
  - **DRIERS**
    - Lead octanoate (7319-86-0);
    - Lead 2-ethylhexanoate (301-08-6);
    - Lead naphthenate (61790-14-5)
  - **OTHER ADDITIVES**
    - Lead chromate oxide (18454-12-1);
    - Lead oxide (1314-41-6);
    - Lead nitrate (10099-74-8);
    - Lead peroxide (1309-60-0);
    - Tri-lead bis(carbonate) dihydroxide (1319-46-6)

LEAD PAINT ALLIANCE

Elements of Lead Hazard Control: Industry Emphasis

- Establish controls based on **risk to vulnerable populations**
  - Children
  - Workers
- Understand **critical industrial coatings performance requirements** (i.e. corrosion protection) ***and***
- Evaluate the **adequacy of the existing lead "safety net" (to reduce risk of worker health and environmental impacts)**

LEAD PAINT ALLIANCE

Elements of Lead Hazard Control: Industry Emphasis

- Focus on “intentionally added” lead, and **acknowledge residual contamination** concerns
  - Soil derived materials often have some background level of lead (**residual lead contamination**) which cannot be eliminated and is NOT INTENTIONALLY ADDED
  - Globally, there are different quantitative limits for residual lead contamination in paint
  - Local (i.e. national) standards should continue to apply
    - But residual limits should be kept as low as possible

LEAD PAINT ALLIANCE

Current Industry Collaboration with Governments

- South Africa
- Philippines
- Vietnam
- Thailand
- Japan
- Taiwan
- South Korea
- New Zealand

NOTE: Specific details of these collaborative efforts may be obtained from the national governments or by contacting IPPIC (secretariat@ippic.org) for further information

LEAD PAINT ALLIANCE

Path Forward
Continued Industry Contributions

- IPPIC and industry contributors will be advancing several projects in 2015 and beyond
  - A new "framework" document to describe how governments and industry can work constructively to establish lead paint restrictions. This document will provide details on technology transfer, effective communications, standard-setting, and enforcement
  - Regional and national support for "Clean Technology" initiatives (advancing lead-free paint) in Latin America and China
  - Assistance in identifying available, published market data on lead pigment usage in order to help focus government efforts on lead-use restrictions

LEAD PAINT ALLIANCE

Point of Contact

- International Paint and Printing Ink Council, Inc. (IPPIC)

1500 Rhode Island Ave. NW
Washington, DC 20005
Stephen Sides, Marie Clarke
202-462-6272 Tel
E-mail: secretariat@paint.org

- PREPARED: August 2015

References

- Originally presented at the GAELP Workshop and Third Meeting in New Delhi, September 2014
- Updated and expanded for inclusion in the UNEP "Toolbox" for Governments. August 2015

LEAD PAINT ALLIANCE

Module E

Alternatives to lead in paint

LEAD PAINT ALLIANCE

Outline

- Paint basics
- Sources of lead in paint
- Alternatives for lead in paint
- Cost associated with lead in paint
- Summary
- References
- Point of Contact

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LEAD PAINT ALLIANCE

Paint basics

See Module Ai for additional details

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LEAD PAINT ALLIANCE

Paint ingredients

- Pigment and fillers
- Resin
- Solvent
- Driers
- Other additives

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LEAD PAINT ALLIANCE

Why is lead used in paint?

- Lead-containing paint ingredients are only intentionally added to solvent-based paint due to their chemical properties
- Primary source of intentionally added lead are pigments and drying agents
- Lead can also be unintentionally added through contaminated paint raw materials

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LEAD PAINT ALLIANCE

Alternatives to lead in paint

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Alternative drying agents

- Replacing lead-containing drying agents requires comparatively little reformulation research
- The most effective replacements of lead are based on strontium or zirconium
- Strontium is classified as non-toxic
- Less strontium is needed compared to lead to achieve the same effect (1 part of Strontium = 3 parts of Lead)
- Strontium provides a comparable performance to lead for most paint resins

Reference E1.

Alternative drying agents, con't

- Where strontium is unavailable, zirconium is the closest, direct replacement for lead
- Recommended levels of substitution are 3 parts zirconium metal to replace 4 parts of lead metal
- Exposure to zirconium can cause detrimental health effects, and occupational exposure limits are set in many countries
- Additional additives may be needed when zirconium is used as drier to achieve the same paint properties (e.g. drying time)

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Reference E1.

LEAD PAINT ALLIANCE

Replacing lead pigments

- Coloring pigments provide shade, strength and brightness of color, opacity and can also give special optical effects
- Pigments are divided into organic and inorganic, depending upon the chemical structure
- In general, one of the most important factors to consider in reformulation is the volume concentration of pigment in the dry film, which determines color, hiding power, barrier properties, cost and a number of other properties
- The final formulation will be paint and brand specific, and needs to be determined by each manufacturer in collaboration with its suppliers

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Reference E2.

LEAD PAINT ALLIANCE

Alternatives to white lead pigments

- White lead pigments are rarely used anymore
- The lead-free alternative most commonly used is titanium dioxide
- Titanium dioxide has excellent pigment properties and low toxicity
- As the opacity of titanium oxide is superior to that of white lead, lower levels of pigment will most likely give the desired result

Reference E2.

Alternatives to other lead pigments

- Replacement of lead chromates and lead molybdates demand a reformulation research process
- There is no 1:1 replacement for lead chromate pigments but there are a number of organic and inorganic pigments that can be blended together to produce the desired colors and performance
- The general approach is first to decide precisely which performance properties, in addition to color, are critical, and then reformulate the paint with the substitutes that meet the criteria.

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Reference E2.

LEAD PAINT ALLIANCE

Considerations for reformulation

- One of the main differentiators is the desired level of weathering performance (interior or exterior performance
- Paints for interior use do not need to have excellent weather resistance or light fastness
- Paints for exterior use require pigment blends with good color retention and weathering performance
- Inorganic pigments provide the opacity and potentially the weathering performance, whilst organic pigments are used in order to obtain the desired clean color shade.

Reference E2.

General properties of pigments

Organic and inorganic pigment properties			
Properties	**Inorganic pigment**	**Organic pigment**	
		Azo Type	**HPP (High Performing Pigment)**
Opacity	Excellent	Transparent	
Colouring strength	Low to average	Several time better than inorganic pigment	
Purity , Chroma	Dull	Bright	
Lightfastness	Good to Excellent	Low to average	Good to Excellent
Weather resistance	From mediocre to excellent	Mediocre	Good to Excellent
Heat resistance	normally > 500°C, not often <200°C	150 - 220 °C	200- 300°C
Bleed resistance	Excellent	Average to good	Good to Excellent
Chemical resistance	Mediocre to excellent depending upon the chemistry	Excellent expect for the salt	Excellent
Pigment cost	low to average	Average	High

Reference E2.

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Some non-lead pigments are still health hazards

- Inorganic pigments producing bright colors can contain other metals that are considered health hazards
- Some examples
  - Yellow inorganic pigments can contain chromates or cadmium
  - Red and orange inorganic pigments can contain cadmium

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Cost associated with lead in paint

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Cost of replacing lead in paint

- Given the low levels of addition of driers and their relatively low contribution to overall cost structure, the cost of formulations containing lead-free driers can be comparable to those formulations containing lead driers.
- To replace lead pigments, more reformulation research is needed to yield a paint of equivalent color and performance
- The final production cost does not need to be higher

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Cost of pigment replacement, Example 1

- Replacement of lead pigment in RAL color 300: Flame Red

Lead-Based v. Lead Free Cost Comparison		
RAL 3000	Lead-Based	PR254
PY53	21.5	61.1
PR104	63.3	
PR254		27.3
PR122	8.0	
PR101	7.2	11.6
Metamerism	0.4	2.0
Lead-based = 3.24m²€ or 0.31€/m² PR254 based = 4.99 m²/€ or 0.20 €/m²		

Replacement does not have to come with a higher production cost

Lead-based: 0.31 €/m²
Lead-free: 0.20 €/m²

Reference E3.

Cost of pigment replacement, Example 1 continued

- Replacement of lead pigment in RAL color 300: Flame Red (% by weight)

	Lead free		Lead free		Lead containing	
	High performance		Economic			
Pigment calculated on solid binder		11.50%		11.20%		23.90%
Pigment in wet paint		5.40%		5.00%		11.00%

Organic pigments have a higher color strength
→ less alternative pigment may be needed

Reference E4.

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Cost of pigment replacement, example 2

- Replacement of lead pigment RAL1021: Greenish yellow

Lead-Based v. Lead Free Cost Comparison		
RAL 1021	Lead-Based	PR254
PY151		81.5
PY34	85.8	
PBr24	11.0	17.7
PY139	0.8	0.8
Metamerism	0.4	2.0
Lead-based = 2.89m²€ or 0.35€/m² PY151 based = 1.41 m²/€ or 0.71 €/m²		

However, some performance demands may increase production cost

Lead-based: 0.35 €/m²
Lead-free: 0.71 €/m²

Reference E3.

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Lead content and retail price

- In 2013, retail price and lead content of paints in six Asian countries were recorded
- Only paint cans of similar size were included

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Average price of cans of white paint

Country	Low lead content (<90 ppm)	High lead content (>90 ppm)	Price difference between paints with low and high lead content, local currency (EUR/USD)	Price difference (% of price of low lead paints compared to high lead paints)
Bangladesh	372 BDT	385 BDT	-13 (-0.12/-0.16)	97%
India	324 INR	354 INR	-30 (-0.35/-0.48)	92%
Indonesia	44423 IDR	49822 IDR	-5399 (-0.34/-0.46)	89%
Philippines	238 PHP	313 PHP	-75 (-1.23/-1.68)	76%
Sri Lanka	1018 LKR	981 LKR	37 (0.21/0.28)	104%
Thailand	170 THB	145 THB	24 (0.55/0.75)	117%

Reference E5.

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LEAD PAINT ALLIANCE

Average price of white paint

- Although the average price of white paints with low lead levels were in some cases higher, the actual increase in average price amounted to only a maximum of 0.55 Euro per liter.
- Detailed comparison of price for cans of white paint
  - In four countries, the average retail price was lower for paints with lead content below 90 ppm compared to paints with lead content above 90 ppm (76% - 97% of the average retail price compared to cans with lead content above 90 ppm)
  - In two countries, the average retail price was higher for paints with lead content below 90 ppm compared to paints with lead content above 90 ppm (104% - 117% of the average retail price compared to cans with lead content above 90 ppm)

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Average price of colored paint

	Low lead content (<90 ppm)	High lead content (>90 ppm)	Price difference between paints with low and high lead content, local currency (EUR/USD)	Price difference (% of price of low lead paints compared to high lead paints)
Bangladesh	304 BDT	434 BDT	-130 (-1.22/-1.66)	70%
India	332 INR	306 INR	26 (0.31/0.42)	109%
Indonesia	58330 IDR	43884 IDR	14446 (0.91/1.24)	133%
Philippines	277 PHP	276 PHP	0.2 (0.00)	100%
Sri Lanka	829 LKR	915 LKR	-86 (-0.48/-0.66)	91%
Thailand	224 THB	161 THB	63 (1.41/1.93)	139%

Reference E5.

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LEAD PAINT ALLIANCE

Average price of colored paint

- Although the average price of paints with low lead levels were in some cases higher, the actual increase in average price amounted to only a maximum of 1.41 Euro per liter.
- Detailed comparison of price for cans of colored paint
  - In two countries, the average retail price was lower for paints with lead content below 90 ppm compared to paints with lead content above 90 ppm (70% - 91% of the average retail price compared to cans with lead content above 90 ppm)
  - In one country, the average retail price was the same for paint with lead content below and above 90 ppm
  - In three countries, the average retail price was higher for paints with lead content below 90 ppm compared to paints with lead content above 90 ppm (109% - 139% of the average retail price compared to cans with lead content above 90 ppm)

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Summary

- Lead is intentionally added to paint as lead driers or lead pigment
- Lead contaminated raw materials can contribute to lead in paint
- Cost-effective reformulation alternatives are available for all lead-containing paint ingredients
- A high retail price is not necessarily a guarantee for low lead content of the paint

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References

E1. Contract Report for IPEN (2015). Lead drier replacement in solvent based alkyd decorative paints. Safinah Coatings Consultants.

E2. Contract Report for IPEN (2015). Replacement of lead pigments in solvent based decorative paints

Safinah Coatings Consultants.

E3. BASF Third party submission of information on alternatives for Applications for Authorisation (2015)

http://echa.europa.eu/documents/10162/18074545/a4a_comment_385_1_attachment_en.pdf

LEAD PAINT ALLIANCE

References

E4. Clariant Pigments, Personal communication with Mr Wai Siang, Yuen, Technical Manager ASEAN Pacific Clariant BU Pigments - Coatings

E5. IPEN (2014) Asia Regional Paint Report . March. http://ipen.org/sites/default/files/documents/Asia%20Regional%20Paint%20Report%20final.pdf

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UN environment

Global Alliance to Eliminate Lead Paint

Model Law and Guidance for Regulating Lead Paint

The United Nations Environment Programme November 2017

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Introduction

This document provides guidance to countries drafting new laws to establish legal limits on lead content in paints, as a measure to protect human health and the environment. It can also be a useful tool for countries interested in modifying their existing laws. It was developed by the United Nations Environment Programme (UN Environment) in support of the Global Alliance to Eliminate Lead Paint (Lead Paint Alliance).[1]

'Lead paint' is paint or a similar surface-coating to which one or more lead compounds have been added. The primary goal of the Lead Paint Alliance is to prevent the exposure of children to lead from paints containing lead, and to minimize occupational exposure to lead paint. The Lead Paint Alliance is working to phase-out the manufacture and sale of lead paint, and eventually to eliminate the risks that such paints pose.

To achieve this global goal, all countries must eliminate the use of lead additives in new paints by establishing and enforcing lead paint laws. An important strategic goal of the Lead Paint Alliance is for all countries to have lead paint laws in place by 2020.[2] As of September 2017, only one-third of countries around the world had confirmed to the Lead Paint Alliance that they have legally binding controls on lead paint.[3] There are still many countries where using lead paint in homes and schools, and on toys and other children's products is not prohibited. This creates a significant risk to children. Countries that have not yet done so are urged to enact and enforce effective national legislation, regulations and/or standards to stop the manufacture, sale and import of lead paints.

Countries that have enacted laws to limit the lead content in paint have generally used one of two approaches: (1) establish a set of chemical-specific regulatory limits based on the risks of individual lead compounds that are used as additives in paint (currently used in the European Union REACH regulation[4]); or (2) establish a single regulatory limit on the total concentration of lead in paint from all sources (currently used in 34 countries).[5] Both approaches have been successful in limiting the lead content in paint, but the chemical-specific approach requires risk assessments of individual lead compounds that may be beyond the capacity of many developing countries. In contrast, a single regulatory limit on total lead content does not require extensive risk assessments and is much simpler for governments to implement and enforce. Manufacturers can achieve a low legal limit on total lead content in paint by developing formulations that do not intentionally use any lead additives and that take into account potential residual lead content in raw material ingredients.

Purpose and Scope

The purpose of this guidance is to assist countries to enact new laws (or to modify their existing laws) to establish a single regulatory limit on the total lead content in paints. The guidance describes the key elements of effective and enforceable legal requirements. It also provides a model law that incorporates the key elements and reflects the best approaches currently found in lead paint laws around the world.

Countries may use the model law to help develop their own laws, in accordance with existing legal frameworks and other national circumstances. For example, some countries use consumer protection laws that establish a limit on lead content in consumer paints (e.g. the USA), while others establish limits on lead in paints through a regulation or legal order under a chemicals management law (e.g. the Philippines) or as part of an environmental protection law (e.g. Nepal). Some countries have established lead limits through a national standards bureau (e.g. Kenya). The model law can be adapted to fit within a country's legal framework but should retain the key aspects described in this guidance.

1 This model law and guidance supplements the online 'Toolkit for Establishing Laws to Control the Use of Lead in Paint', developed by partners of the Lead Paint Alliance. This toolkit, which was "designed to provide information to government officials who are interested in establishing legal limits for lead in paints in their countries", contains useful background information (but not model legal text, which is included in this Model Law and Guidance) and is available at http://drustage.unep.org/chemicalsandwaste/noleadinpaint/toolkit

2 The Lead Paint Alliance was formed under the auspices of the Strategic Approach to International Chemicals Management (SAICM), pursuant to SAICM Resolution II/4 B. SAICM provides a policy framework to achieve the goal that, by 2020, chemicals will be produced and used in ways that minimize significant adverse impacts on the environment and human health. The strategic goals for the Lead Paint Alliance are included in its 2012 Business Plan, available at http://drustage.unep.org/chemicalsandwaste/what-we-do/technology-and-metals/lead/lead-paint-alliance/resources/publications

3 WHO, *Regulations and Controls on Lead Paint*, Global Health Observatory, World Health Organization, available at http://www.who.int/gho/phe/chemical_safety/lead_paint_regulations/en

4 See website of European Chemicals Agency at https://echa.europa.eu/regulations/reach

5 UNEP (2016), *Global Report on the Status of Legal Limits on Lead in Paint*, United Nations Environment Programme, available at http://drustage.unep.org/chemicalsandwaste/sites/unep.org.chemicalsandwaste/files/Status%20of%20Limits-Lead-Paint-2016%20Report-Final.pdf

For the sake of brevity, this guidance uses the term 'agency' to refer to the relevant government entity that will be responsible for implementing the lead paint law. In different countries, the relevant government entity may be, for example, the environment ministry/agency, the health ministry/agency, or the standards-setting bureau. Where different entities will be responsible for implementing different parts of a lead paint law, it will be important for them to collaborate from the outset of the drafting process, and to agree on and establish clear lines of responsibility.

As countries draft new laws to limit lead content in paint, it is recommended that they provide access to information about the new laws and opportunities for public consultation and engagement. The paint and coatings industry and other stakeholders can often provide valuable input and suggestions for effective laws. Many countries that have been successful in enacting lead paint laws have actively engaged stakeholders (such as paint manufacturers and civil society organizations) by establishing working groups or similar mechanisms for input and discussion throughout the process.

Finally, while this model law and guidance focuses on establishing a regulatory limit on the total lead content in new paint and similar surface-coating materials, consumer exposure to lead from paint already applied to products may need stricter control. Accordingly, countries may wish to review their existing consumer product safety laws and consider prohibiting the import and manufacture of consumer products coated with lead paint, especially products intended for use by children.

Method of Development

A proposed draft of this guidance document was developed by a working group of representatives from UN Environment, the World Health Organization and the US Environmental Protection Agency. The working group looked at examples of existing laws and regulations pertaining to lead paint from several countries and reviewed information compiled in the Global Report on the Status of Legal Limits on Lead in Paint, published by UN Environment in 2016. The group also consulted with government bodies responsible for consumer protection and standard setting.

The proposed draft was reviewed by the Lead Paint Alliance Advisory Council. The Advisory Council is comprised of representatives from governments, industry, environmental and health NGOs, and international organizations. A revised draft was then provided for review by partners of the Alliance and the general public via the Lead Paint Alliance website. Comments from this secondary review were considered during the finalization of the guidance.

Background on Lead in Paint

Paint is typically a mixture of resins, pigments, fillers, solvents and other additives. Historically, lead compounds have been intentionally added to paint to give it certain properties such as colour, reduced corrosion on metal surfaces or faster drying time. For the same reasons, lead compounds may be present in other types of coatings, including varnishes, lacquers, enamels, glazes and primers. Lead additives are most commonly used in solvent-based paint due to their specific chemical properties; such solvent-based lead paints and coatings are still widely available and used in many countries. Water-based latex paint, on the other hand, rarely contains intentionally added lead compounds.[6]

Paints may also include ingredients contaminated with lead. For example, paints may include natural clays and other raw materials that may contain residual lead content. Therefore, it is not technically feasible to set a 'zero' limit for lead content in paint. However, if a manufacturer does not intentionally add lead compounds to its paints and takes into account the residual lead content in raw materials, then the total lead content in the paint will be low.[7]

In countries without legal limits, paint with high levels of lead can still be used for decoration of interior and exterior surfaces in homes and public buildings; on roads, bridges and industrial equipment; and on toys, furniture and playground equipment. However, non-leaded pigments, driers and anti-corrosive ingredients are widely available for use in solvent-based paints and are used by manufacturers to produce high-quality paints in all regions of the world. Increasingly, paint

6 IPEN (2016), *Global Lead Paint Elimination Report*, available at http://ipen.org/documents/global-lead-paint-report-2016.

7 IPEN (2016) *Global Lead Paint Elimination Report*.

producers around the world are publicly acknowledging the feasibility of eliminating the use of intentionally added lead compounds in all paints.

The Case for Legal Limits

The weathering, peeling or chipping of old lead paint releases lead into dust and soil, in and around homes, schools and other locations. Dust contaminated with lead can also be brought into the home on the clothes of those who work in industries where such dust is generated, including paint factories where lead continues to be used. Lead-contaminated soil and dust are easily ingested and absorbed, particularly by young children when they play on the floor or outdoors and put their hands or objects in their mouths. Children also ingest lead if they mouth and chew toys painted with lead paint. Both children and adults can be exposed to lead in paint chips and dust generated during the removal of old lead paint.

The negative health effects from exposure to lead have been known for many years, and include effects on multiple body systems. Lead can cause permanent damage to the brain and nervous system, resulting in decreased IQ and behavioural problems. It can also cause anaemia, increase the risk of kidney damage and hypertension, and impair reproductive function.

Young children are especially vulnerable to the adverse effects of lead. Even relatively low levels of exposure can cause serious and, in some cases, irreversible neurological damage. There is no known level of lead exposure that is considered safe.

The negative impacts on children's developing brains from exposure to lead have staggering economic costs. These costs are borne by the affected children, their families, and societies at large. They include health care costs, losses in productivity and intellectual disability. The Institute for Health Metrics and Evaluation has estimated that, based on 2015 data, lead exposures from all sources account for 12.4 percent of cases of idiopathic intellectual disability (i.e. intellectual disability without another known cause).[8] The largest financial burden is borne by low- and middle-income countries. Estimated annual costs (in international dollars) of lead exposure by global region, based on loss of IQ, include: Africa – $134.7 billion; Latin America and the Caribbean – $142.3 billion; and Asia – $699.9 billion.[9] In addition, the cost of removing existing lead paint from surfaces in homes, schools and other buildings can be substantial.[10] It therefore makes economic sense for countries to enact laws that prevent future removal costs by establishing a legal limit on lead content in new paint.

By contrast, the financial cost of eliminating the use of lead compounds in many paints is low; many manufacturers have already successfully reformulated paint products to avoid the intentional addition of lead. According to a paint industry spokesman, "the reformulation of residential and decorative paints to eliminate lead additives is feasible, and the technical and cost impacts are manageable".[11]

Lead released into the environment from any source, including lead paint, is also toxic to plants, animals and micro-organisms. In all studied animals, lead has been shown to cause adverse effects in several organs and organ systems, including blood, central nervous, kidney, reproductive and immune systems. It bioaccumulates in most organisms, with environmental exposures occurring through multiple sources and pathways.

Eliminating the source of lead exposure is the single most effective way of protecting people from the harmful effects of lead. The removal of lead from gasoline has produced dramatic reductions in airborne emissions and associated exposures, and public health impacts around the globe. Similarly, most industrialized countries adopted laws or regulations to control the lead content of residential and decorative paints in the 1970s and 1980s, based on clear findings that paint containing lead is a major source of lead exposure for children. The continued use of lead in paint in many parts of the world, however, remains an unaddressed

8 Institute for Health Metrics and Evaluation (2016), *GBD Compare Data Visualization*. Seattle, WA: IHME, University of Washington, available at http://vizhub.healthdata.org/gbd-compare.

9 Attina and Trasande (2013), *Economic Costs of Childhood Lead Exposure in Low- and Middle-Income Countries*. Report and map available from http://www.med.nyu.edu/pediatrics/research/environmentalpediatrics/leadexposure.

10 For example, the cost of removing lead paint from homes most in need of remediation in the United States has been estimated at between $1.2 billion and $11.0 billion. Gould (2009), 'Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control', *Environmental Health Perspectives* 117, p. 1162.

11 IPPIC (2016), Presentation to The World Bank on March 15, 2016: *Practical Sustainability Interventions: Protecting Public Health and Promoting Economic Development through Legal Limits on Lead in Paint*, The International Paint and Printing Ink Council, Washington D.C.

source of human exposure. Laws, regulations or enforceable standards are needed in every country to stop the manufacture, sale and import of lead-containing paints.

The global paint and coatings industry is rapidly expanding as a result of the economic development of countries around the world. Therefore, unless the practice of manufacturing and selling paints with added lead is eliminated, the risks of lead exposure will also increase. The growing demand for paints, especially for residential and decorative use in developing countries, should be met with paints that are not formulated with added lead compounds. Establishing lead paint laws will help countries ensure that the level of lead in domestic production and imported paint (and similar surface-coating materials) does not exceed the national legal limit.

By producing or using paints without added lead compounds, paint manufacturers and commercial paint users (such as toy manufacturers) can ensure their continued access to markets where lead content in paint is already restricted. It can also reduce potential commercial risks (including health risks to workers and customers, and compliance and liability claims) and protect the reputation of the industry.

Objectives and Key Elements of Effective Lead Paint Laws

The objectives of legal limits on lead in paint, established through lead paint legislation and/or regulation (hereafter described as 'lead paint law'), include: (1) the prevention of the manufacture, sale and import of paint that contains lead above an established legal limit; (2) the development of a system with methods for compliance and enforcement; and (3) the establishment of institutional responsibilities and arrangements for the management and enforcement of the lead paint law.

In accordance with these objectives, the key elements of a lead paint law include the following:

A Defining key terms and ensuring that the scope of the law is clear:

- a persons and activities that are regulated (e.g. manufacture, sale and import)
- b types of paint applications that are regulated (e.g. all paint applications or certain applications such as residential, decorative, etc.)

B Establishing a clear legal limit on total lead content in paint

C Setting the effective dates of the new requirements

D Providing methods for ensuring compliance and enforcement

E Specifying consequences of non-compliance

F Providing any necessary general provisions

This section provides explanations and drafting notes for the key elements of a lead paint law. A model law reflecting these key elements is provided in Appendix I.

Key Element A: Define key terms and ensure that the scope of the law is clear

Lead paint laws should clearly define key terms used throughout the law. Key terms may include, for example, 'manufacturer', 'paint', and 'total lead content'. The model law in Appendix I provides definitions of key terms (see Appendix I, section A).

To be successful, a law should specify the activities and persons that are regulated. The model law in Appendix I prohibits the sale, offer for sale, manufacture for sale, distribution into commerce and import of paint that exceeds the established legal limit (see Appendix I, sections B and F). The model law places specific requirements (e.g. testing and declarations of conformity) on manufacturers and importers of paint (see Appendix I, section D).

The law should also specify the types of paint that are regulated. Countries should decide whether to apply the legal limit to all paints or to allow exemptions for certain paints for specific purposes. It is entirely possible to restrict the use of lead in all paints, and some countries have done so.[12] This has the benefit of protecting the whole population from lead exposure from paint, especially in countries where both household paint and industrial paint are frequently sold side by side in retail outlets.

The model law provided in Appendix I applies the total lead limit to all paints (household, industrial, agricultural, etc.) (see Appendix I, section B). However, if a country chooses to exempt certain types or uses of paints from the total lead limit, it should require such paints to bear a legible, visible warning label so that consumers are aware of the health hazards involved with using exempted paint.[13]

If exemptions are allowed then the following language is recommended for a labelling requirement — as well as for the label itself:

> Manufacturers and importers of paint and similar surface-coating materials that are not subject to the ban set forth in [insert section] and that contain lead or lead compounds in which the lead (calculated as lead metal) is in excess of 90 ppm of the weight of the total non-volatile content of the paint or the weight of the dried paint film shall include on the label of each paint or similar surface-coating product a warning stating: "DANGER: CONTAINS LEAD. DO NOT APPLY TO SURFACES ACCESSIBLE TO CHILDREN OR PREGNANT WOMEN". Failure to include such a label shall subject the manufacturer or importer to penalties as set forth in [insert penalties section].

Key Element B: Establish a clear legal limit on the total lead content in new paint

As discussed in the Introduction, the purpose of this document is to assist countries interested in establishing a single regulatory limit on the total concentration of lead in paint from all sources. Setting a specific legal limit on total lead content helps the regulated community understand the rules and ensures that the law is more easily enforceable. This requires specifying a quantitative limit and a valid method to measure the quantity for lead in paint.

The lowest and most protective regulatory limit that has been set in countries for lead in residential and decorative paints is 90 parts per million (ppm) total lead content, based on the weight of the total non-volatile content of the paint or the weight of the dried paint film. (This specific limit can also be measured and expressed in a law or standard as 0.009 percent or 90 mg/kg of total lead, based on the dry weight of the paint film.) The 90 ppm limit is technically feasible for manufacturers to achieve by avoiding the addition of lead compounds and taking into account residual (unintentional) lead content in certain paint ingredients.

Paint testing conducted by environmental groups in numerous developing countries shows that, while high levels of lead are not uncommon, levels below 90 ppm are achievable.[14] Canada, India, Kenya, Nepal, the Philippines, Tanzania and the United States of America have all set a legal limit of 90 ppm total lead content. Several other countries are also considering adopting the 90 ppm regulatory standard. Switzerland and Thailand have limits of 100 ppm total lead, while some countries have adopted a limit of 600 ppm: Argentina, Brazil, Chile, Costa Rica, Dominica, Guyana, Jordan, Mexico, Oman, Panama, South Africa, Sri Lanka and Uruguay.[15] The model law in Appendix I uses 90 ppm as the total lead limit because it is the lowest existing legal limit and thus provides the best available health protection, and is technically feasible. (See Appendix I, section B).

12 See supra note 3.

13 Warning labels are strongly advised on any paints exempted from the 90 ppm total lead limit so that consumers receive fair warning about the hazards of using such paints. In contrast, warning labels are not necessary on paints subject to the lead paint law because lead in these paints will be limited to 90 ppm total lead or less and therefore will not present a hazard to consumers.

14 IPEN Global Lead Paint Elimination Report, http://ipen.org/documents/global-lead-paint-report-2016

15 See supra note 3; WHO (2016), Countries with legally-binding controls on lead paint, as of 17 February 2017. World Health Organization.

It is important to specify that the legal limit in paint should be defined as 'total lead' content rather than 'soluble lead' content.[16] Currently, a few countries regulate paint on toys using a limit on soluble lead, which is the amount of lead that can be extracted using a standard acid treatment test. Measuring soluble lead is intended to simulate the amount of lead that is bioavailable for absorption by children, such as when a child chews on a toy coated with lead paint. Recent research suggests, however, that soluble lead is not the predominant form of exposure for children, and that particulate (insoluble) lead found in dust, soil and paint chips is a more significant contributor to chronic and acute exposure.[17] Unmaintained painted surfaces, as well as weathering and ageing, generate paint chips and dust that contaminate soil and house dust, thus increasing the potential for exposure to lead All lead in paint, whether soluble or insoluble in a lab test, has the potential to be available for exposure through inhalation or ingestion, especially by young children who crawl and play on the floor and outside on soil. While there is no safe level of lead exposure, a regulatory limit based on total lead will be more protective of health than a limit based only on soluble lead. The model law in Appendix I therefore uses a regulatory approach based on limiting the total lead content in paint. (See Appendix I, section B).

Key Element C: Set effective dates for the new requirements

Lead paint laws should specify dates when the requirements set out in the law will come into effect. In establishing such dates, countries may wish to work with industry to determine a reasonable amount of time needed to source and procure alternative materials, to alter product formulations and processes, and to sell or dispose of existing stocks of paint containing lead above the total limit.

One way to allow time for industry to change its practices and come into compliance with the total lead limit is to provide a reasonably delayed effective date for the 90 ppm total lead limit, applicable to all paints covered by the law. Most lead paint laws that limit lead to 90 ppm or 100 ppm have required compliance within one year of passage of the law.[18] (For sample language for a delayed effective date, see Appendix I, section C, option 1).

As an alternative to a broadly applicable delayed effective date for the 90 ppm limit, countries may wish to provide phased effective dates, depending on the type of paint. This approach is designed to take into account the different uses and performance requirements of paints, and the relative harms posed by such uses. For example, a law could allow more time for industrial paints to come into compliance with the total lead limit but less time for decorative paints intended for household use or other applications likely to contribute to childhood lead exposure. (For sample language for a phased effective date, see Appendix I, section C, option 2).

Countries should encourage laboratories to acquire the necessary equipment, expertise and accreditation to perform the required testing of lead paint. Current lack of in-country laboratory capacity need not be an impediment to a lead paint law going into effect, as industry can still comply with the law by sending paint samples to laboratories in other countries that are qualified to perform the required testing. Additionally, for imported paints, manufacturers and importers can rely on test results from qualified laboratories in the country of origin under the model law under certain circumstances (See Appendix I, section D).

Key Element D: Establish mechanisms to promote compliance with, and enforcement of, the total lead limit

Effective lead paint laws promote compliance and provide mechanisms for enforcing the legal limit. They also assign clear responsibilities for the various actions required by the new law or regulation. Mechanisms for promoting compliance with, and enforcement of, the legal limit should include: (1) required testing of paint and similar surface-coating materials by a third-party laboratory; (2) required 'declarations of conformity' with the total lead limit by manufacturers and importers based on the third-party laboratory testing; and (3) authorized government

16 For an overview of measurement methods, see WHO (2011), Brief guide to analytical methods for measuring lead in paint, available at: http://www.who.int/ipcs/assessment/public_health/lead_paint.pdf

17 Deshommes E., et al. (2012), Experimental Determination of the Oral Bioavailability and Bioaccessibility of Lead Particles; *Chemistry Central Journal*; Vol. 6, p. 138.

18 Countries limiting lead in paint to 90 ppm that required compliance immediately or within one year include: Canada, India, Kenya, Nepal, Tanzania and the United States. Thailand limits lead to 100 ppm and required compliance within one year. Switzerland limits lead to 100 ppm and required compliance within 15 months. The Philippines is unique in allowing three years for compliance for architectural, decorative and household applications, and six years for industrial applications.

inspections to ensure compliance with the total lead limit. In addition to these mechanisms built into the law itself, governments can also promote compliance by educating industry about the requirements of the law and how to meet them.

i) Third-Party Testing

To promote compliance, a lead paint law should require manufacturers and importers to submit sufficient samples of paint or similar surface-coating materials to a third-party laboratory accredited under international standards for testing for compliance with the 90 ppm total lead limit. Manufacturers and importers will rely on this third-party testing to issue declarations of conformity, certifying that their paint product or similar surface-coating material complies with the 90 ppm total lead limit (see section ii. below). 'Sufficient samples' is defined as the number of samples the 'agency' determines necessary to provide a high degree of assurance that the tests conducted accurately demonstrate compliance with the 90 ppm total lead limit.

Manufacturers and importers should be required to submit sufficient samples of a paint product's first production batch or lot for third-party testing. Testing the first production batch or lot will be sufficient to meet the testing requirement unless a material change occurs in the production process for that paint product – such as a change in ingredients or a change in an ingredient supplier. In the event of a material change in the production process, the law should require new third-party testing to be conducted and new declarations of conformity to be issued. In order to ensure that testing is not unduly burdensome and duplicative, importers may be allowed to rely on a foreign manufacturer's test results to issue a declaration of conformity, as long as the importer exercises due care to ensure that the manufacturer's test results meet the requirements of the law, and the importer maintains appropriate records of the test methodology and results. (See Appendix I, section D.)

An essential part of setting a regulatory limit is specifying the analytical testing methods that will be used to determine whether a product is in compliance with the limit; the model law, therefore, requires manufacturers, importers and laboratories to use internationally recognized sampling and testing methods. A number of existing methods for the preparation of samples and the analysis of lead in paint are available and are summarized in the WHO 'Brief guide to analytical methods for measuring lead in paint'. The WHO guide is available in English, Chinese, French, and Spanish at http://www.who.int/ipcs/assessment/public_health/lead/en/. In addition, internationally recognized sampling and testing methods for lead in paint are referenced in the model law (see Appendix I, section D) and are listed in Appendix II.

ii) Declarations of Conformity

The second key mechanism for compliance is the requirement that manufacturers and importers issue a 'declaration of conformity', stating that their paint product or similar surface-coating material complies with the law's 90 ppm total lead limit. These declarations are based on the third-party testing described above and are sometimes referred to as 'certifications' in countries with existing laws and regulations.[19] The law should specify who must provide the declaration of conformity and to whom it must be provided, and describe the required content of the declaration. As indicated in the previous section, an importer may rely on a foreign manufacturer's testing under specified circumstances, but the importer must issue its own declaration of conformity (see Appendix I, section D).

Declarations of conformity and certifications are both types of 'conformity assessment' procedures – an internationally recognized term that covers activities used to provide confidence in a product supplier's compliance with safety, health, environmental and fair commerce requirements.[20] Conformity assessment systems come in many types, which have varying degrees of complexity and resource investment. 'Certification' (as the term is used internationally) generally has two essential characteristics: (1) it is conducted by a third party and (2) it includes some form of surveillance activity by the third party to ensure ongoing compliance once initial compliance with a requirement has been determined. Many third-party certification bodies use an on-product mark or symbol to attest to the conformity of certified products. Similar to a certification approach, the

19 For example, the United States' Consumer Protection Safety Act, 15 U.S.C. § 2051 et. seq., refers to 'certifications' by manufacturers and importers. These certifications are based on third-party testing by government-approved laboratories.

20 ISO/IEC Guide 2 provides definitions for various types of conformity assessment.

declaration of conformity approach used in the model law requires testing by an independent, third-party laboratory accredited under rigorous, internationally-approved standards. Unlike a certification approach, however, the model law does not rely on the creation and involvement of a separate certifying body to ensure ongoing compliance with the lead limit.

The declaration of conformity approach is recommended and used in the model law because it places the obligation for compliance on manufacturers and importers. Manufacturers and importers must ensure testing by an accredited laboratory and must sign a sworn affidavit stating that their paints comply with the 90 ppm total lead limit. Failure to do so subjects these parties to civil (and possibly criminal) penalties.

ii) Government Inspections

Inspections by the relevant agency are critical to ensuring that paints are manufactured and imported in conformity with the country's total lead limit. The model law authorizes government agents to enter a location at 'reasonable times' to inspect and test paint or similar surface-coating materials, as long as they first present appropriate credentials to the owners or operators or agents in charge of the location. The model law also authorizes the government to test paints in a 'reasonable manner' in order to assess compliance with the law. (See Appendix I, Section E).

Key Element E: Specify clear, transparent consequences for non-compliance

Effective lead paint laws clearly articulate prohibited acts. (See Appendix I, section F). They also dictate the consequences of non-compliance, including providing for specific and meaningful penalties. Where a country already has general legal provisions relating to civil penalties and criminal sanctions for offences, it may wish to refer to the provisions of the parent legislation in its lead paint law. (See Appendix I, section G, option 1). If a country does not already have parent legislation relating to penalties or sanctions, or wishes to incorporate independent, specific civil and criminal penalty provisions within its lead paint law, the model law provides sample language. (See Appendix I, section G, option 2). The lead paint law may also provide for criminal fines and imprisonment for knowing and wilful violations of the law. (See Appendix I, section H).

In addition to specifying meaningful penalties for non-compliance, effective lead paint laws identify remedies such as injunctive relief and seizure or recall of paints that do not comply with the total lead limit. (See Appendix I, section I). The lead paint law may also include provisions to enable citizens and other 'persons' to bring actions to enforce the law. (See Appendix I, section J). The model law defines 'person' to include an individual, partnership, corporation, association or non-profit organization. (See Appendix I, section A).

Key Element F: General Provisions

In drafting lead paint laws, countries may find they need to reference provisions from other existing laws that relate to the manufacture and import of paints, to help ensure that lead paint is being handled appropriately. For example, countries may wish to refer to applicable waste management laws to address the transport, treatment, storage and disposal of lead paint. (See Appendix I, section K).

Appendix I

Model Lead Paint Law

The text below is intended solely as a guide for governments to develop a new national law or modify an existing law to limit the total lead content in paints. It does not constitute a legal interpretation or binding obligation in relation to any international convention. The model law can be adapted so that it fits appropriately within a country's legal framework but should retain the key elements of effective and enforceable legal requirements, as described in this guidance.

A Definitions (examples)

'Disposal' means the treatment, temporary storage and systematic destruction of lead and lead compound waste in accordance with the applicable provisions of the law regulating hazardous wastes.

'Importer' means any person that undertakes the entry of a product into a country.

'Lead paint' means paint containing lead or lead compounds and in which the lead (calculated as lead metal) is in excess of 90 ppm by weight of the total non-volatile content of the paint or the weight of the dried paint film.

'Manufacturer' means any person who undertakes the physical or chemical transformation of substances into a new product, performed either by power-driven machines or by hand and markets it under his/her name or trademark or private label.

'Paint' means varnishes, lacquers, enamels, glazes, primers or other similar surface-coating materials used for any purpose; and is typically a mixture of resins, pigments, fillers, solvents and other additives that constitutes a finished product. Paint does not include materials which become part of the substrate, or materials which are actually bonded to the substrate, such as by electroplating or ceramic glazing.

'Person' means an individual, partnership, corporation, association or non-profit organization.

'Total lead content' is defined as a weight percentage of the total non-volatile portion of the paint or as a percentage of the weight of the dried paint film.

B Legal Limits on Total Lead Content

Paint and similar surface-coating materials must not contain lead (calculated as lead metal) in excess of 90 ppm of the weight of the total non-volatile content of the paint or the weight of the dried paint film.

C Effective Dates

Option 1: Delayed Effective Date

- Paint and similar surface-coating materials may contain lead above the 90 ppm total lead limit in [section] until, but not after, one (1) year from the date of promulgation of this law [or insert date].

Option 2: Phased Effective Dates

- Paints and similar surface-coating materials may contain lead above the 90 ppm total lead limit in [section] for one (1) year from the date of promulgation of this law for architectural, decorative and household applications, and for three (3) years from the date of promulgation of this law for industrial applications.

D Declaration of Conformity Based on Testing by Third-Party Laboratory

- Declaration of Conformity
  - Before distributing in commerce or importing for consumption any paint or similar surface-coating materials, a manufacturer or importer shall:
    - submit sufficient samples of the first production batch paint to a third-party laboratory accredited under [see below] to be tested for compliance with the 90 ppm total lead limit in [cite to section], and
    - based on such testing, issue a declaration of conformity that certifies that such products comply with the 90 ppm total lead limit in [cite to section].
  - Manufacturers and importers shall maintain records of declarations of conformity and laboratory test results and attestations, which support such declarations of conformity, for a period of at least [5 years].

- An importer of paint may rely on a foreign manufacturer's test results to issue its own declaration of conformity provided that the importer exercises due care to ensure the manufacturer's test results meet the requirements of this law, and that the importer has records of the laboratory test results and attestations regarding how the testing was conducted.

- 'Sufficient Samples' as used in [section above] means the number of samples of paint or similar surface-coating materials that [Agency] determines is sufficient to provide a high degree of assurance that the tests conducted for declaration of conformity purposes accurately demonstrate the ability of such products to meet the 90 ppm total lead limit in [cite to section].

- New Declaration of Conformity after Material Change
  - 'Material Change' means a change that the manufacturer or importer makes to the design, manufacturing process or the source of component parts, for the paint or similar surface-coating material, which a manufacturer or importer, exercising due care, knows or should know, could affect compliance with the 90 ppm total lead limit in [section].
  - In the event of a 'material change', a manufacturer or importer must:
    - submit sufficient samples of the paint or similar surface-coating material to a third-party laboratory accredited under [see below] to be tested for compliance with the 90 ppm total lead limit in [cite to section], and
    - based on such testing, issue a new declaration of conformity that certifies that such paint or similar surface-coating material complies with the 90 ppm total lead limit in [cite to section].

- Who must issue the declaration of conformity
  - In the case of paint or similar surface-coating material manufactured in [X country], the manufacturer must issue the declaration of conformity pursuant to [section].
  - In the case of paint or similar surface-coating material manufactured outside [X country], the importer must issue the declaration of conformity pursuant to [section].

- To whom must the declaration of conformity be given
  - Manufacturers and importers of paint or similar surface-coating materials must:
    - provide the declaration of conformity to distributors and retailers, and
    - provide the declaration of conformity to [Agency] upon request.

- Content of declaration of conformity. Each declaration of conformity shall include:
  - identification of the paint or similar surface-coating material covered by the declaration,
  - identification (name, contact address) of the manufacturer or importer certifying compliance with the 90 ppm total lead limit,
  - identification of the object of the declaration of conformity (e.g. name, type, date of production or model number of a product, description of a process, management system, person or body, and/or other relevant supplementary information),
  - a sworn affidavit signed by the manufacturer or importer stating that the paint or similar surface-coating material is in compliance with the 90 ppm total lead limit, and
  - contact information for the testing laboratory and the individual maintaining records of test results.

- Accreditation of third-party laboratory
  - 'Third-party laboratory' means an independent laboratory that has no interest in the transaction between the manufacturer or importer and the distributor or retailer, and that has been accredited under ISO/IEC 17025 by a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA), or one of its recognized regional bodies: Inter-American Accreditation Cooperation (IAAC), European cooperation for Accreditation (EA), Asia Pacific Laboratory Accreditation Cooperation Incorporated (APLAC).
  - For its accreditation to be accepted to test for the 90 ppm total lead limit for declaration of conformity purposes, a third-party laboratory shall be accredited for and use [specify sampling and testing methods here – e.g. ASTM,

ISO standards and provide for updating, perhaps via Agency website, to account for test methods changing/improving over time. See Appendix II for recommended methods.]

E Government Inspections

- For purposes of implementing this law, officers or employees of [Agency], upon presenting appropriate credentials to the owner, operator or agent in charge, are authorized:
  - to enter, at reasonable times, any factory, warehouse, or establishment in which paint or similar surface-coating materials are manufactured or held, and
  - to inspect and test, at reasonable times and in a reasonable manner, such paint and similar surface-coating materials to assess compliance with this law.

F Prohibited Acts

- It shall be unlawful for any person to:
  - sell, offer for sale, manufacture for sale, distribute in commerce, import into [X country], any paint or similar surface-coating material that contains lead or lead compounds and in which the lead (calculated as lead metal) is in excess of 90 ppm of the weight of the total non-volatile content of the paint or the weight of the dried paint film,
  - fail or refuse to permit entry or inspection and testing pursuant to Section E,
  - fail to furnish a declaration of conformity required by [cite section] or issue a false declaration of conformity if such person in the exercise of due care has reason to know that the declaration of conformity is false or misleading in any material respect, or
  - exercise, or attempt to exercise, undue influence on a third-party laboratory with respect to the testing, or reporting of the results of testing of any product.

G Penalties

Option 1

- Any person who violates the requirements specified in this [Act/Regulation/ Order] shall be liable thereof to the applicable administrative and criminal sanctions as provided for under Sections ..... of [insert the general penalty provision of the parent legislation].

Option 2

- Any person who violates section [Prohibited Acts] shall be subject to a civil penalty not to exceed [amount] for each such violation.
- A violation of section [Prohibited Acts] shall constitute a separate offence with respect to each paint or similar surface-coating material product involved, except that the maximum civil penalty shall not exceed [amount].
- The maximum penalty amounts authorized in [cite section above] shall be adjusted for inflation [as reflected in applicable regulations or tied to specified index].
- Relevant factors in determining the amount of the penalty:
  - The [Agency or applicable court] shall consider the nature, circumstances, extent and gravity of the violation, including the severity of the risk of injury, the number of paints or similar surface-coating materials which were distributed, the appropriateness of the penalty in relation to the size of the business of the person charged, including how to mitigate undue adverse economic impacts on small business, and other such factors as appropriate.

H Criminal Penalties

- A violation of section [Prohibited Acts] is punishable by:
  - imprisonment for not more than [X years] for a knowing and wilful violation of that section, or
  - a penalty of [X amount], or
  - both.

- Any individual director, officer or agent of a corporation who knowingly and willfully authorizes, orders or performs a violation of section [Prohibited Acts] shall be subject to penalties under this section without regard to any penalties to which that corporation may be subject under [above section].
- In addition to the penalties provided by [above section], the penalty for a criminal violation of this law may include the forfeiture of assets associated with the violation.

I Injunctive Relief and Seizure

- The [applicable courts of X country] shall have jurisdiction to restrain any violation of section [Prohibited Acts] and to authorize seizure or order the recall of the paint or similar surface-coating material that does not comply with the 90 ppm total lead limit, and/or other appropriate relief.

J Citizen Suits

- Any person may bring an action in any [applicable court of X country] to enforce [section], to obtain appropriate injunctive relief, and to apply any appropriate civil penalties under [section], payable to [government of country X].
- A court with jurisdiction over a citizen suit under this provision may order the defendant to pay the attorney's fees and reasonable litigation costs of the plaintiff bringing a good faith citizen suit under this provision.

K General Provisions

Transport, Treatment, Storage and Disposal Requirements

- Manufacturers and importers of paints and similar surface-coating materials must comply with applicable provisions of the [applicable waste management law] and those to be prescribed by the [relevant Agency or competent authority] for the transport and treatment, storage and disposal of lead wastes and contaminated equipment off-site.

Appendix II

Recommended International Standards

Recommended International Standards for Sample Preparation:

ISO 1513, Paints and varnishes – examination and preparation of test samples

ISO 1514, Paints and varnishes – standard panels for testing

ASTM E1645-01, practice for preparation of dried paint samples by hotplate or microwave digestion for subsequent lead analysis

ASTM E1979-12, Practice for ultrasonic extraction of paint, dust, soil and air samples for subsequent determination of lead

Recommended International Standards for Test Methods:

ISO 6503, Paints and varnishes - determination of total lead - flame atomic absorption spectrometric method

ASTM E1645-01, practice for preparation of dried paint samples by hotplate or microwave digestion for subsequent lead analysis

ASTM D3335-85a (2014), Standard test method for low concentrations of lead, cadmium, and cobalt in paint by atomic absorption

ASTM E1613-12, Standard test method for determination of lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption Spectrometry (FAAS), or Graphite Furnace Atomic Absorption Spectrometry (GFAAS) techniques

UN environment

Global Alliance to Eliminate Lead Paint

Eliminating Childhood Exposure to Lead Paint

Overview of the Global Alliance to Eliminate Lead Paint

Walker B. Smith
Director, Office of Global Affairs and Policy, US Environmental Protection Agency
Chair of the Lead Paint Alliance

Lead is Poisonous

- Lead is harmful to health, especially for childrenLife-long consequences in children including serious and irreversible neurological damage and behavioral problemsGlobally lead in paint is the major source of childhood exposure There is no safe level of exposure to lead

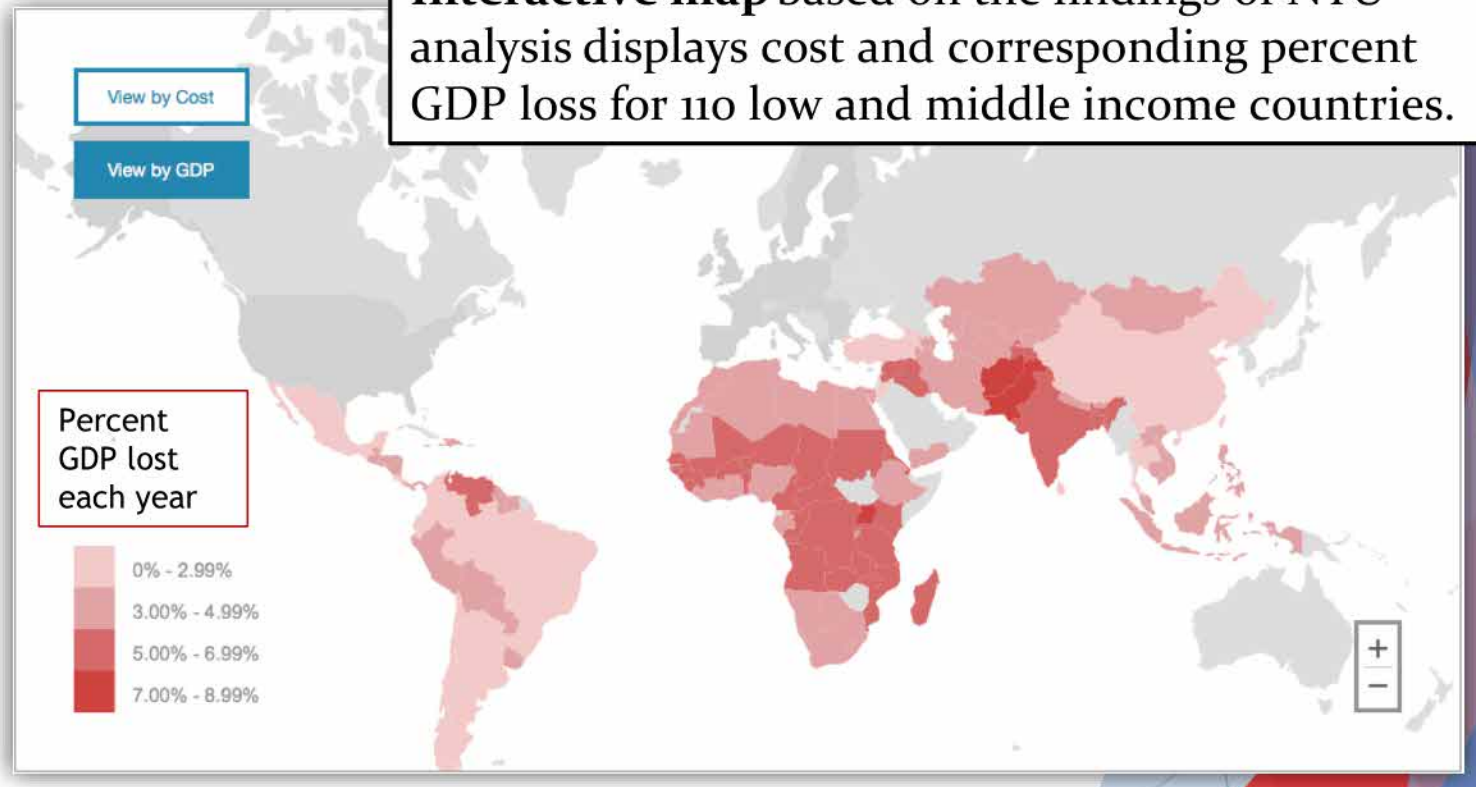
Lead Poisoning's Health and Economic Costs

Exposure to lead has permanent negative impacts to children's developing brains.Lifelong consequences are borne by the affected children, their families, and societies at large. One key impact: reduction in intelligence quotient (IQ), which can be correlated with decreases in lifetime earning potential.

High Cost of Lead Poisoning

Children's exposure to lead from all sources has staggering economic costs for countries.$977 billion cost for low and middle-income countries from children's lost IQ.

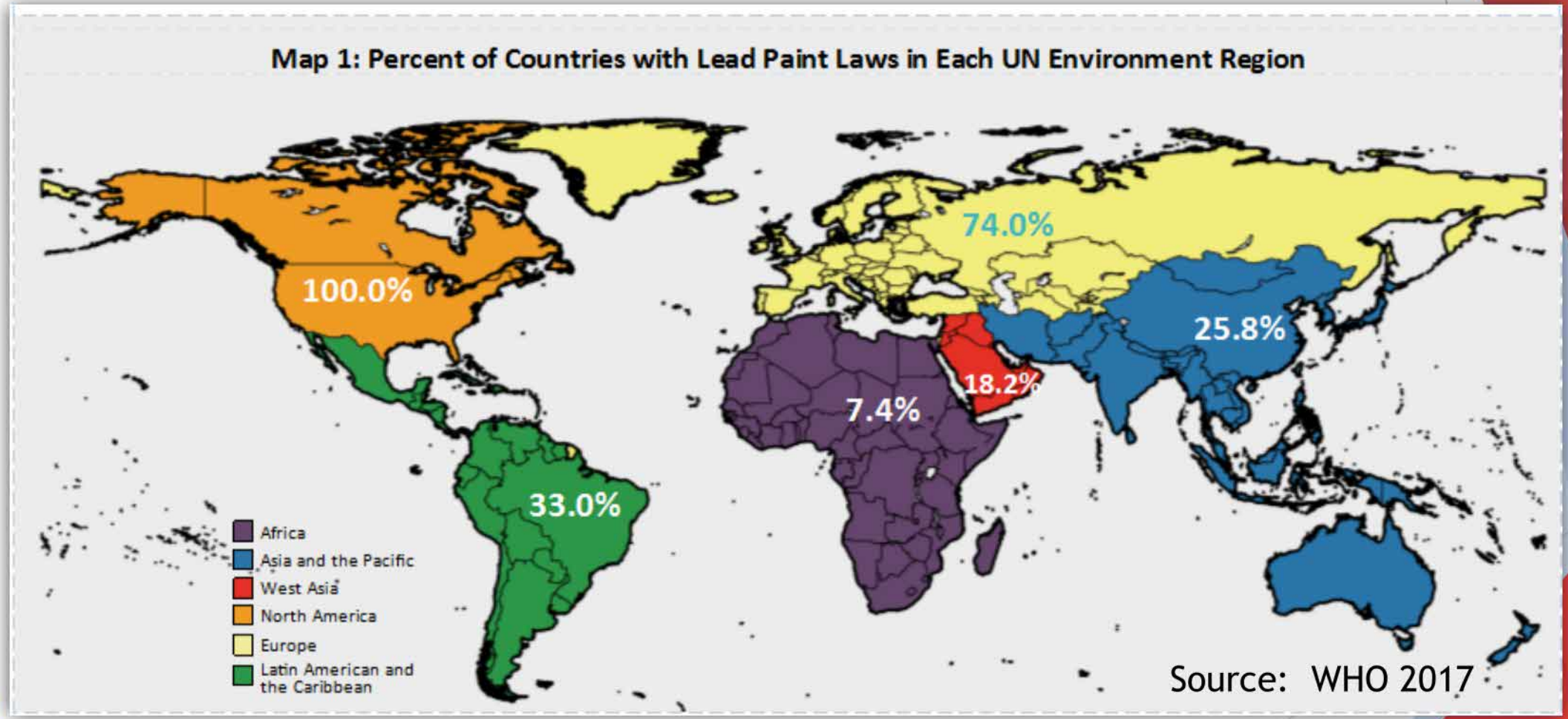
Interactive map based on the findings of NYU analysis displays cost and corresponding percent GDP loss for 110 low and middle income countries.



Source:
http://www.med.nyu.edu/pediatrics/research/environmentalpediatrics/leadexposure

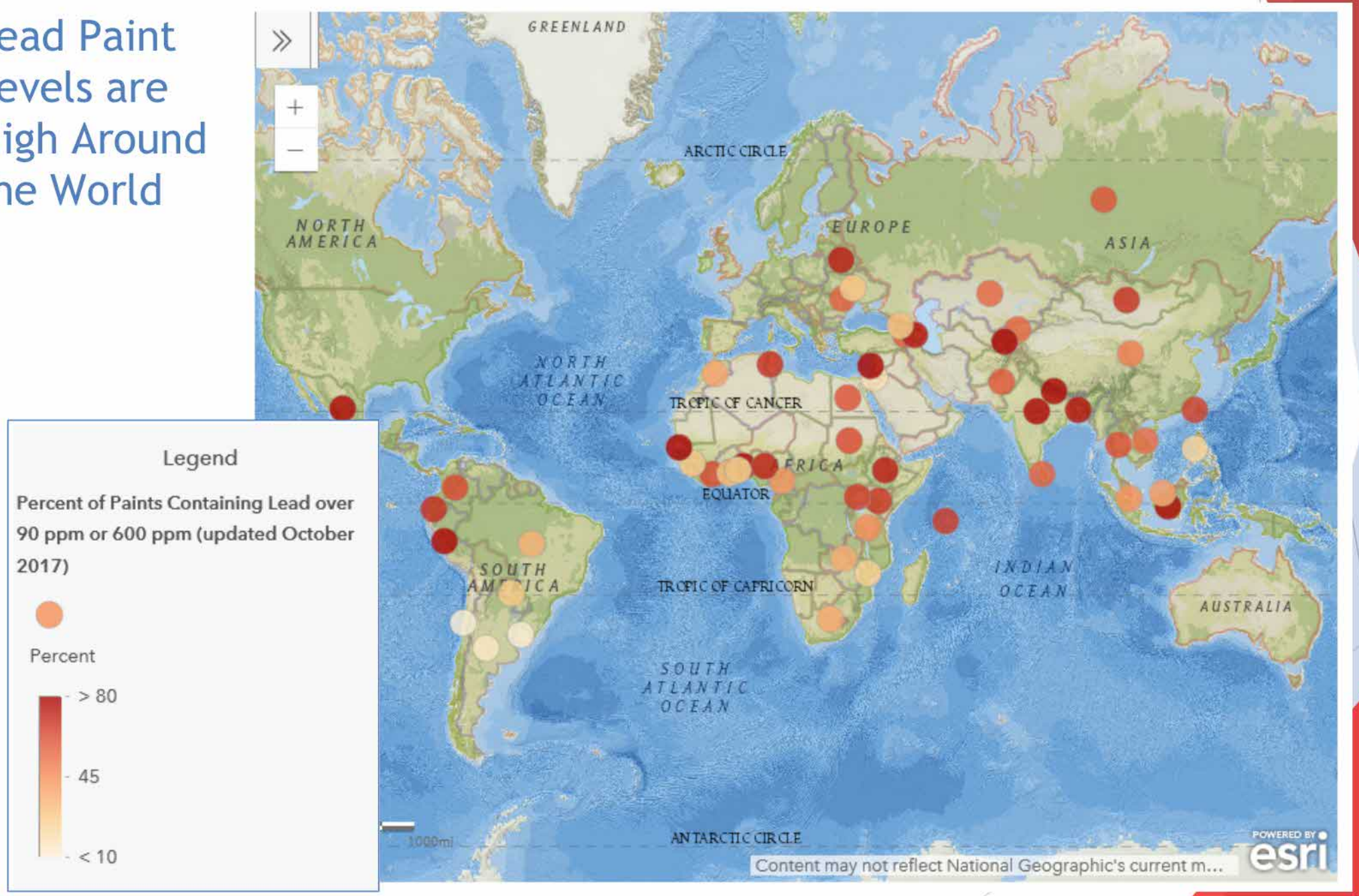
NYU School of Medicine
NYU LANGONE MEDICAL CENTER

Only 30% of countries have laws



Source: WHO 2017

Lead Paint Levels are High Around the World



About the Global Alliance to Eliminate Lead Paint

Lead Paint Alliance is a voluntary global partnershipLaunched by SAICM resolution in 2009Secretariat: UNEP and WHOChair of Advisory Council: US EPA Partners: Governments, NGOs and IndustryAlliance is modeled on successful Partnership for Clean Fuels and Vehicles efforts to eliminate lead in gasoline globally

Global Citizens
Earth Day 2015

Goal: Establish laws globally

Action Needed on Lead Paint Laws

- Countries in the developed world banned lead in paint in 1970s and ‘80s.However, in most of the developing world, lead paint is still legal.Lead compounds are added to paints to improve drying time and color brightness.Alternative paints without added lead are affordable and widely available.Voluntary labeling of paints is not a solution.Industry and governments agree: Solution is enacting lead paint laws in countries worldwide – 90 ppm limit (US Law).

Key Activities of Lead Paint Alliance

The Alliance developed an Action Plan for 2017-2018Main goal is to encourage countries to establish and enforce lead paint lawsAlso encourages industry activities, awareness raising and increasing the number of Alliance partnersProviding information and tools:Model Law and Guidance on Regulating Lead PaintRegulatory toolkit, which includes information about health and economic impacts, alternatives to lead paint, paint testing methods

Recent Momentum on Lead Paint

Model Law and GuidanceUNEP 2017 Global Status Update on LawsWHO Global Map on Status of Lead Paint LawsOther Materials and ToolsUNEA3 Commitment model languageWorld Health Assembly Roadmap Chemicals Roadmap (May 2017) – calls for action on lead paintNYU Map of Economic Impacts of Childhood Lead Poisoning (NYU School of Medicine)IPEN Global Map of Lead Paint Testing DataAmerican Bar Association Resolution on Lead Paint

Model Law and Guidance for Regulating Lead Paint

Governments requested guidance on a model for developing lead paint lawsIndustry and NGOs also supported the development of the model lawUN Environment developed the law with help from WHO, EPA and other Lead Paint Alliance partnersKey Features Low concentration limit for lead in paint (90 ppm total lead)Applies to all types of paints (consumer and industrial uses)Provisions for effective compliance and enforcementSimple to implement

Key Ongoing and Future Activities

EPA training of Environment, Science, Technology and Health officers in US Embassies by region (ongoing)Annual International Lead Poisoning Prevention Week of Action (since 2013)UNEA3 Science Forum Session on Lead PaintGovernment, NGO, industry UNEA3 commitments USG Resolution on lead paint (Argentina co-sponsoring)World Bank Report (March 2018 TBC)Current regional effortsWest Africa – draft regional waste strategy includes lead paintCaribbean - UN Environment / EPA / ABA Launch of Model Law in JamaicaCentral and Eastern Europe – US Department of Commerce Standards Officials Project and Eurasian Economic Union lead paint technical regulationGlobal Environment Facility Project on Lead Paint (2018-2020)

International Lead Paint ResourcesLead Paint Alliance: http://web.unep.org/chemicalsandwaste/what-we-do/technology-and-metals/lead/global-alliance-eliminate-lead-paint USEPA Lead Paint Alliance site: https://www.epa.gov/international-cooperation/epa-leadership-lead-paint-alliance WHO Map of Lead Paint Laws: http://www.who.int/gho/phe/chemical_safety/lead_paint_regulations/en/ World Health Assembly Chemicals Roadmap: http://www.who.int/ipcs/saicm/roadmap/e

The South African Paint Manufacturing Association and Training Institute

CASE STUDY: ELIMINATION OF LEAD IN PAINT IN SOUTH AFRICA

IPPIC

HISTORY OF SAPMA

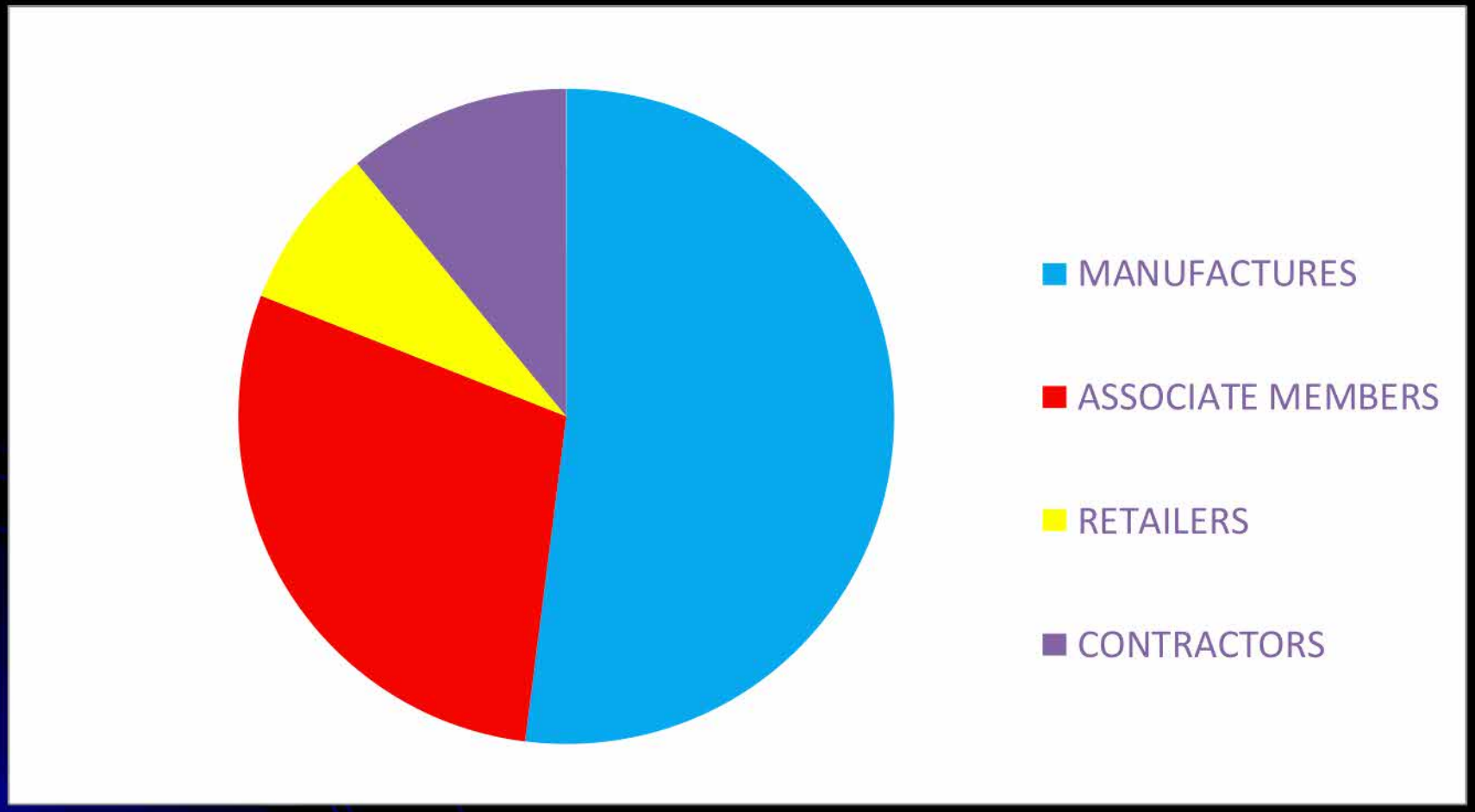
- IN EXISTANCE FOR 76 YEARS
- VOLUNTARY MEMBERSHIP
- MEMBERSHIP REPRESENTS 85 TO 90% OF PRODUCT MANUFACTURERED IN SOUTH AFRICA
- 105 MEMBERS FROM INDUSTRY OF 300 MANUFACURERS.

HISTORY OF SAPMA

EXPANDED MEMBERSHIP IN 2009 TO INCLUDE:

- MANUFACTURERS
- RAW MATERIAL AND SERVICES SUPPLIERS
- PAINT RETAILERS
- PAINT CONTRACTORS

SAPMA MEMBERSHIP



VALUES OF SAPMA

REPRESENT THE COATINGS INDUSTRY IN PROMOTING THE UPLIFTMENT OF THE INDUSTRY IN TERMS OF QUALITY AND TECHNOLOGY, ETHICAL VALUES, ENVIRONMENTAL HEALTH AND SAFETY ISSUES AND THE PROTECTION OF THE CONSUMER

LEAD IN PAINT

PRESENTATION OF PAPER BY ANGELA MATHEE, DIRECTOR OF SOUTH AFRICAN MEDICAL RESEARCH COUNCIL:

"THE ONGOING STRUGGLE TO GET LEAD OUT OF PAINT IN SOUTH AFRICA"

DR MATHEE'S MAJOR ISSUES

- LEAD POISONING A WIDESPREAD PUBLIC HEALTH PROBLEM IN SOUTH AFRICA.
- LEAD EXPOSURE EXISTS IN BOTH URBAN AND RURAL AREAS (LEAD MINING AND FISHING INDUSTRY)
- PAINT A KEY SOURCE OF LEAD EXPOSURE
- EXPOSURE TO ELEMENTS OVER TIME CAUSE PAINT TO PEEL, CHIP AND RELEASE FINE LEAD PARTICLES

HISTORICAL BACKGROUND

- PREFERENCE IN 1940’ & 50’s TO PAINT SCHOOLS, HOSPITALS AND KITCHENS WITH BRIGHT COLOURED ENAMEL PAINTS (USUALLY GREEN AND YELLOW) CONTAINING LEAD PIGMENTS
- WHITE LEAD WIDELY USED IN WOOD PRIMERS.
- LEAD ACETATE KNOWN AS “SUGAR OF LEAD” BECAUSE OF SWEET TASTE

LEAD IN PAINT: HOUSING AND SCHOOLS

- 1979 SURVEY DEPARTMENT OF HEALTH INDICATED 20% OF INTERIOR WALLS OF HOMES WAS PAINTED WITH LEAD IN PAINT
- 2004 PAPER PUBLISHED BY MEDICAL RESEARCH CENTRE INDICATED THAT 20% OF JOHANNESBURG DWELLINGS

  HAD LEAD BASED PAINTS
- SCHOOLS STUDY SHOWED 18 TO 36% HAD ELEVATED LEVELS OF LEAD IN PAINT

HAZARDOUS SUBSTANCE ACT

- 1973 DEPARTMENT OF HEALTH PUBLISHED ACT UNAWARE THAT UNITED NATIONS DANGEROUS GOODS CLASSIFICATION WAS LIMITED TO ONLY ASPECTS OF THE SUBJECT AND ADAPTED THE LISTING FOR THE PURPOSE OF DEFINING HAZARDOUS SUBSTANCES
- THEY EXCLUDED CHRONIC TOXINS FROM THE LIST AS THEY WERE NOT DANGEROUS FOR TRANSPORT, BUT FOR REPEATED EXPOSURE.

HAZARDOUS SUBSTANCE ACT

- IN MSDS'S, DEPARTMENT OF LABOUR COVER USE AND DEFINITIONS OF HAZARDOUS SUBSTANCES AS PER EUROPEAN LISTING. THESE REGULATIONS CONCERNING DEFINITION AND LABELLING WERE NOT CONSIDERED BY DEPT. HEALTH DESPITE STANDARD (SANS10265)

DR MATHEE PUBLISHED HER FINDINGS

PRESS COVERAGE

Sunday Times
OCTOBER 23, 2005
POISON TOYS BANNED
www.sundaytimes.co.za

HEADLINES

- POISON –PAINT THREAT
- CLAMP ON POISON PAINT
- POISON PAINT DRIPPING FROM OUR WALLS

2003 LEAD LEGISLATION

- DEPARTMENT OF HEALTH, SAPMA AND TOY INDUSTRY DREW UP PROPOSED LEGISLATION UNDER HAZARDOUS SUBSTANCE ACT 15 OF 1973
- ACT LIMITED USE OF LEAD IN PAINT >600ppm SOLD IN SMALL CONTAINERS DIRECTLY TO PUBLIC
- INDUSTRIAL PAINT WAS SPECIFICALLY OMITTED FROM LEGISLATION

HAZARDOUS SUBSTANCE ACT

GOVERNMENT NOTICE

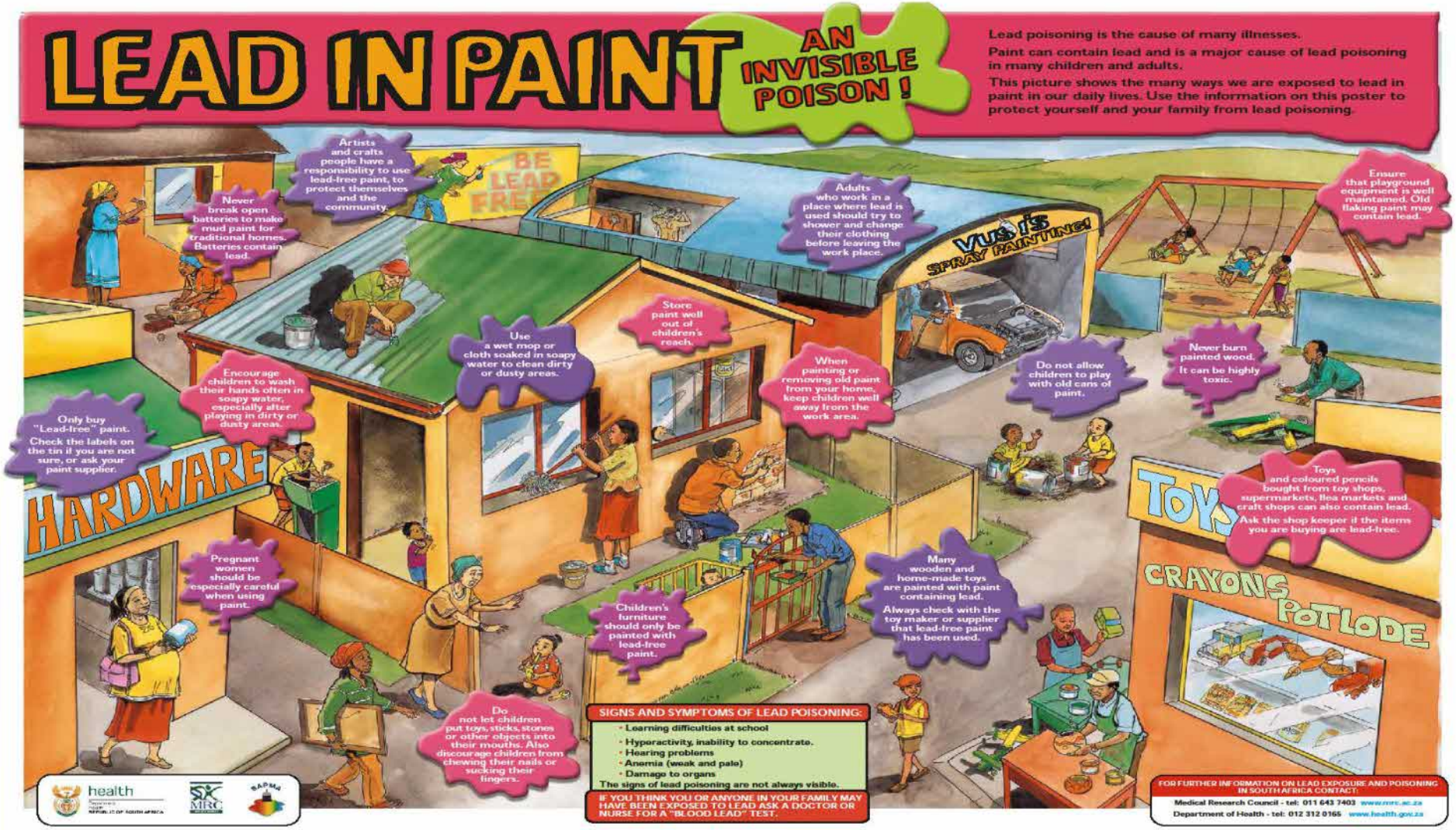
DEPARTMENT OF HEALTH

No. 801 **31 July 2009**

HAZARDOUS SUBSTANCES ACT, 1973 (ACT 15 OF 1973)

DECLARATION OF LEADED PAINT AS GROUP 1 HAZARDOUS SUBSTANCE

SAPMA PARTICIPATED IN MEDIA CAMPAIGN



The South African Paint Manufacturing Association and Training Institute

SAPMA SAPITI

We support the Anti 'Lead in Paint' Campaign.

DEPARTMENT OF HEALTH INVESTIGATIONS

- REPORTS INDICATED 40% OF SAMPLES COLLECTED CONTAINED LEAD >600ppm
- RESULTING IN STATEMENT THAT 40% OF PAINT STILL CONTAINED HIGH LEVELS OF LEAD
- DESPITE FACT THAT SOLVENT BASES ENAMELS REPRESENT <2% OF DECORATIVE PAINT SALES

ISSUES INFLUENCING INVESTIGATION

- CONFUSION OF LEGISLATION REGARDING INDUSTRIAL PAINT IN SMALL CONTAINERS
- NON SAPMA MEMBERS STILL USE LEAD PIGMENTS
- RURAL RETAILERS SELL INDUSTRIAL ENAMELS IN SMALL CONTAINERS

DEPARTMENT OF HEALTH

- SAPMA REQUESTED THAT OFFENDERS: BOTH MANUFACTURERS AND PAINT RETAILERS SELLING LEADED PAINTS BE PROSECUTED

SAPMA calls for government action to 'name and shame' leaded paint producers

The South African Paint Manufacturing Association (SAPMA) has urged the government to start prosecuting unscrupulous paint producers who are still including hazardous lead levels in their paints.

At a Lead in the Workplace workshop in Pretoria organised by the Department of Labour, Deryck Spence, executive director of SAPMA, said it was time to 'name and shame' offenders.

"This can only happen if the government stops merely threatening to take action against the culprits and actually makes an example of them and prosecutes them. SAPMA has done everything in its power to warn lead-using producers – whether SAPMA members or not – but we now require the strong arm of the government to name and shame manufacturers who still ignore anti-lead legislation," Spence told the workshop.

"SAPMA members would welcome such prosecutions, because it would be in accordance with our ethical views and strategies, since the major brands, having already eliminated lead in the decorative market, are diligently working towards the total elimination of lead in the manufacture of paint, including industrial products like road-marking paints," he added.

At the Pretoria workshop, speakers who included Prof. Angela Mathee, director of the Medical Research Council's Environmental Health Research Unit, again warned that negligible improvement had been made in reducing lead levels in enamel paints despite legislation and the attempts of SAPMA to eliminate the source.

Prof. Mathee stated that it was the intention of the Government to further reduce the level of lead in paint in accordance with GAELIP (Global Alliance for the Elimination of Lead in Paint) from 600ppm to 90ppm and that 'stuck on' lead warning labelling would be in future be banned and that lead warnings instead would have to form part of the paint container's actual wording and design.

Spence, in response, stated that although SAPMA endorsed all the speakers' integrity in highlighting the problem and sources of lead, the facts regarding lead in paint should be placed in perspective. "It should be remembered that 80% of decorative paint is water-based and contains no lead. Lead pigments are traditionally used to obtain the rich colours in oil-based enamels such as reds yellow, greens, etc. As the majority of enamel sold is white, this reduces the lead factor even further since 'coloured' enamels represent only about 4% of decorative sales," he told the workshop.

Spence also stated that although SAPMA membership represented about 90% of the product manufactured in South Africa, membership in numerical numbers was 110 manufacturers out of a market estimated to be in excess of 300.

Deryck Spence, executive director of SAPMA.

Prof Angela Mathee, director of the Medical Research Council's Environmental Health Research Unit.

"SAPMA membership is voluntary and accordingly, many manufacturers do not take up membership because of our strict Codes of Ethics and Conduct – which include the elimination of lead in decorative paints available to the public. Consequently, since the alternatives to lead pigments are significantly more costly than leaded pigments, unscrupulous manufacturers continue to use leaded pigments to gain a competitive edge over companies using the more expensive alternatives."

Spence also said there was major confusion within the government legislation which, although restricting the use of lead in the 'retail' sector, allowed lead pigments to be used in the Industrial market on the premise that the public could not buy them.

"Leaded enamels can be sold in small containers providing they are labelled that it contained lead. This has led to an anomaly in that enamels containing lead are used in the manufacture of children's playground equipment, because the manufacture was termed 'industrial.' But it nevertheless presents a major threat to children who use the equipment. We believe current Legislation should be revised to eliminate such anomalies."

"SAPMA will continue to support the battle against lead in paint – but we now need the Government to fulfil its role as custodians of the Legislation," Spence added.

He was subsequently approached by officials of the Department of Health and assured of their cooperation in this matter.

LEADED PAINT MANUFACTURERS

NEED TO BE BROUGHT TO BOOK

The SA Paint Manufacturing Association (SAPMA) has lodged a strong objection to the government's continuous condemnation of the paint industry for producing leaded paints, while the authorities are still neglecting to prosecute offenders.

Addressing a Department of Labour Health accord in Pretoria recently, Deryck Spence, executive director of SAPMA, stated that the paint industry will continue to follow its Code of Conduct, but wants cooperation from the government in enforcing the existing legislation.

"We object to constantly being vilified for producing leaded paint and reading in the press that our industry is causing 'poison to drip from walls', without the government keeping its promises to prosecute offenders," he said. "SAPMA can coordinate our members, who represent a sizable proportion of the paint industry, but we cannot eliminate the use of lead in the industry without the assistance and cooperation of the appropriate government departments."

Spence repeated his plea to the government to name and shame offenders, and take legal action against any party, whether a SAPMA member or not, who makes or sells paint with illegally high leaded content.

"There is no sense in the government conducting dozens of tests and investigating numerous cases Act unless the offenders are identified and Spence told the meeting. On behalf of SAP the government to conduct an investigati and use of methanol in products sold to the

"The commonly used DIY product, sometimes contains up to 32% methanol, w can lead to death if unwittingly consumed of methanol in thinners is favoured becaus safer alternatives. Yet again, in this instan absolutely no action from the government."

It was subsequently decided that t Labour would arrange a special meeting t forward. The Council of South African Trad represented at the meeting by its policy cupational health, safety and the enviro Bodibe, requested that Cosatu should be i posed meeting. WR

SAPMA
Tel: 011 455 2503
Website: www.sapma.org.za

SPECIFIER AUGUST 2012

Manufacturers of leaded paint to be prosecuted

The South African Paint Manufacturing Association (SAPMA) recently received notification from the Department of Health that the prosecution of paint manufacturers whose products contain illegal levels of lead will start with immediate effect.

Deryck Spence, SAPMA executive director, received the warning from the Department of Health which reads:

"In light of the generous time allowed for paint manufacturers in this country to comply with lead in paint regulations first promulgated in 2009, and the evidence from the Government investigation that transgressions are ongoing – and widespread – in respect of enamel paint, it is recommended that the Department of Health take steps to prosecute the offenders."

The notification added that provincial authorities will be authorised to deal with the prosecutions.

The decision to act follows a recent study by the Department of Health in which it found that hazardous lead-based paints are still freely available on South African retail shelves.

Professor Angela Mathee, director of the Medical Research Council's Environment and Health Research Unit, said paint samples collected from retailers for laboratory analysis of the lead content this year had shown that 40% of the paint still had an illegal, elevated lead content.

She said that a lead content as high as 170 000ppm was found in some product. The study also found inadequate and illegal labelling, with containers of paint with elevated lead content either not carrying a warning about the product's lead content or, in some cases, brazenly stating that it contained no lead.

Professor Mathee has repeatedly warned that lead poisoning particularly affects children and results in low IQ scores, poor school performance, hyperactivity and learning difficulties.

A 2009 survey of lead content in SA paints showed that 80% of paint sampled from retail shelves had an elevated lead content. This led to the government introducing legislation to ban leaded paints in 2010.

SAPMA
T +27 (0)11 455 2503

RETAIL MEMBERSHIP

- IT WAS FOR THIS REASON THAT SAPMA OPENED MEMBERSHIP TO PAINT RETAILERS SO THAT THEY COULD BE GUIDED AND PROTECTED.
- NOT ALL RETAILERS ARE MEMBERS OF SAPMA

DEPARTMENT OF HEALTH

RELUCTANT TO PROSECUTE OFFENDERS

MEETING PLANNED WITH DEPARTMENT OF HEALTH

- REQUEST TO PROSECUTE OFFENDERS
- TOTAL ELIMINATION OF LEAD FROM ALL PAINTS
- ADD METHANOL TO HAZARDOUS SUBSTANCE LIST

FURTHER ACTIONS BY SAPMA

- SIGNED HEALTH AND SAFETY ACCORD WITH DEPARTMENT OF LABOUR TO PROMOTE ELIMINATION OF LEAD
- ASKED FOR ASSISTANCE FROM DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES

LEAD IN PAINT LEGISLATION

- SOUTH AFRICA HAS EXCELLENT ENVIRONMENT LAWS AND REGULATIONS TAKEN FROM USA AND EUROPE;
- UNFORTUNATELY THEY ARE POORLY COORDINATED AND BADLY POLICED ALLOWING THE USE OF DANGEROUS COMPONENTS BY UNETHICAL MANUFACTURERS AND AGENTS

Where lead decorative paint is regulated

Existing Legal Limits
Voluntary Limits
No Legal Limits

GAELP

Global Alliance to Eliminate Lead

UNEP
United Nations Environment Programme

THE FUTURE?

- SAPMA REMAINS RESOLUTE IN ITS QUEST TO UPLIFT OUR INDUSTRY AND PROTECT THE PUBLIC CONSUMER FROM THE USE OF DANGEROUS COMPONENTS IN COATINGS….. AND WILL CONTINUE TO DO SO

The South African Paint Manufacturing Association and Training Institute

THANK YOU

From: Bandemehr, Angela
Sent: Wed, 10 Aug 2016 11:57:03 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Brown, Mary Jean (CDC/ONDIEH/NCEH)
Subject: Invitation to AG Chair/Secretariat call

Henry:
I just sent you an invitation to our periodic call with WHO/UNEP. EPA/CDC are the Chair of the Lead Paint Alliance Advisory Group. And CDC regularly joins us on those calls. We talk about strategic matters and resolve issues. Mary Jean can fill you in on the details. I'm also happy to tell you more about it. The call happens roughly monthly, depending on schedules and need for discussion. So it would be great if you can also participate on those calls.

Regards,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Mccann, Ellie
Sent: Wed, 3 Aug 2016 20:21:55 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Brown, Mary Jean (CDC/ONDIEH/NCEH);Bandemehr, Angela;Huber, Patrick
Subject: Inviting Henry Falk to EPA team meetings on lead paint

Hi Henry,

We are very glad you will be filling in for Mary Jean until CDC can hire her replacement.

The EPA LPA team meets every 2 weeks to review our activities, although we have skipped a few meetings this summer due to vacations and travel. The next team meeting is scheduled for August 12. I will send you an invitation to the whole series of meetings so they will show up on your calendar, and then you can accept them one at a time as you are available.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Marzouk, Evonne
Sent: Thu, 17 May 2018 21:39:58 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Mccann, Ellie;Bandemehr, Angela
Subject: Israel trip - possible speaking opportunities

Hi Henry,
This afternoon we met with Chuck Ashley of the U.S. Embassy in Israel, who has been involved in our conversations with Tamar Berman. Upon hearing that you will be in Israel, Chuck was interested in bringing you in as a speaker (with honorarium) as part of your trip – to engage with government representatives (including the Ministry of Economy and Border Control) and/or industry in Israel on the issue of lead in paint.

In our conversation yesterday, Tamar had also expressed interest in engaging you to talk with industry about the issue. We planned to talk to you about this on Thursday, but the time pressure has increased because if you feel this is a good idea, Chuck would need a rough proposal to get to his Embassy (for the possible honoraria and event planning) by Tuesday.

We're not 100% sure whether it makes more sense or adds more value for you to work directly with the MOH for such a presentation or to get the U.S. Embassy involved. Would you be interested in doing such an activity, and do you have a sense of what format might work best? If so, please also let us know your availability.

Best wishes
Evonne

Evonne Marzouk
Communications Specialist
Office of Global Affairs and Policy
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
202-564-7529
Marzouk.evonne@epa.gov
www.epa.gov/international
Follow us on Twitter! @EPAAllNations

From: Bandemehr, Angela
Sent: Mon, 5 Jun 2017 11:25:05 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Subject: latest draft from Mary Jean
Attachments: Draft Report 6 1 2017 World Bankmjbmark up EPA[14698].doc

Hi Henry!
I read your email from over the weekend. You may have found this by now, but I'm forwarding it to you again. Also, I sent the EPA comments, which are now incorporated in this draft, early last week, I believe. Let me know if you need me to resend them and/or if you have any questions or would like to further discuss.
Best,
Angela
Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
Office of International and Tribal Affairs
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, MC2660R
Washington, DC 20460
Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: mary jean brown <mjb686@outlook.com>
Sent: Thursday, June 1, 2017 12:15 PM
To: Bandemehr, Angela; Shafick Hoossein; Mccann, Ellie; Wolfson, Steve; Ernesto Sanchez-Triana; Maher, Lauren; hhs0@cdc.gov; Henry Falk (hxf1@cdc.gov); Mance, Cassandra; Yewande Aramide Awe; Jiyun Gim
Subject: RE: Lead Paint Module Team Meeting

Hi Everybody,
Here is the latest iteration following discussions with EPA this AM. Please use this document to make comments on. Thanks,
MJ

Sent from Mail for Windows 10

From: Bandemehr, Angela
Sent: Thursday, June 1, 2017 11:04 AM
To: Shafick Hoossein; Mccann, Ellie; Wolfson, Steve; Ernesto Sanchez-Triana; Maher, Lauren; hhs0@cdc.gov; Henry Falk (hxf1@cdc.gov); mary jean brown; Mance, Cassandra; Yewande Aramide Awe
Subject: RE: Lead Paint Module Team Meeting

HI everyone! We are trying to figure out some technical difficulties with the teleconference call, stay tuned. I may try to do this by adobe connect link.

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

-----Original Appointment-----
From: Bandemehr, Angela
Sent: Wednesday, May 17, 2017 1:56 PM
To: Bandemehr, Angela; Shafick Hoossein; Mccann, Ellie; Wolfson, Steve; Ernesto Sanchez-Triana; Maher, Lauren; Schurz Rogers, Helen (CDC/ONDIEH/NCEH); Henry Falk (hxf1@cdc.gov); mary jean brown; Mance, Cassandra; Yewande Aramide Awe
Subject: Lead Paint Module Team Meeting
When: Thursday, June 01, 2017 11:00 AM-12:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomRRB31213/Ronald-Reagan-Building

Bi-weekly meeting of the Lead Paint Module team. Agenda to follow.

Call-in number: + 1 866 299 3188 access code 202 564 1427#

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From: Bandemehr, Angela
Sent: Tue, 15 Nov 2016 12:59:34 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Mccann, Ellie
Subject: Lead Paint AG call preparation Webex changed to teleconference

For Wednesday's meeting it looks like the webex contact information was cancelled and the call will now be a traditional conference call. The call-in number is an international one though, so what I'll do is send out a domestic number for folks to call in to and tie everyone into the international line.

Ellie, I still have a problem with having no room here at EPA. Could you see if you can get your room? Thanks!!!

Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Juan Manuel BARBEITO [mailto:Juanmanuel.barbeito@unep.org]
Sent: Tuesday, November 15, 2016 5:00 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Samantha Le-Royal <Samantha.Le-Royal@unep.org>; vickersc@who.int; tempowskij@who.int
Cc: Scholastica THEURI <Scholastica.THEURI@unep.org>; Eisaku TODA <Eisaku.TODA@unep.org>; Juan CAICEDO <juan.caicedo@unep.org>; Ines BENABDALLAH <Ines.BENABDALLAH@unep.org>
Subject: teleconference on 16 November at 5 p.m. (Geneva time) : only by regular audio line call in

Dear participants,

Concerning the teleconference on 16 November at 5 p.m. (Geneva time), we will connect by audio regular line call in only, as we don't have call in option through Webex (we only have VoIP through Webex, wich sound isn't as good). This means that the Webex invitation is cancelled. We apologise for the inconvenience caused.

We booked a UNOG teleconference (audio call in only) for the Wednesday 16/11 at 5:00 p.m. (Geneva time).

Participants will have to :
1. validate the link below;
2. dial the phone number below;
3. type the code below.

Your code will be 71929

The conference phone number is +41 22 917 0900

Your validation link is
http://intranet.unog.un.org/Icts/TelecomProjects/RM/AudioConfConfirmation.asp?ListKey=173123

We will proceed in the same way for the main teleconference on 21/11, you will soon receive new call in instructions.

Best,

Juan Manuel Barbeito
Documents clerk
UNEP Chemicals and Waste Branch, Economy Division
International Environment House I
11-13, chemin des Anémones
CH-1219 Châtelaine
Geneva, Switzerland

From: Bandemehr, Angela
Sent: Thu, 24 May 2018 16:01:40 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Lead Paint paper
Attachments: Lead Paint Paper draft 5-23-18.docx

Hi Henry:
Sending you the latest draft of our paper to provide some arguments for why paint is worth working on (partially in response to Pure Earth). I thought it might have some references that would be helpful in Israel.

Also, we invite co-authors! Walker and I will publish as our private selves.

Cheers,
Angela

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From: Cantor, Doreen
Sent: Tue, 29 Nov 2016 21:50:32 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Lead reference level

Hi, Henry. Could you give me an estimate as to if/when the CDC lead reference level will be updated? I had worked on this with Mary Jean a bit before she left, but have not heard anything since. Thank you very much. Please feel free to call if that's easier.

Doreen Cantor Paster
Associate Chief, Lead, Heavy Metals, & Inorganics Branch
US Environmental Protection Agency (7404T)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Phone: 202-566-0486

LET'S MAKE ALL KIDS LEAD-FREE KIDS!
Need information on lead? Go to epa.gov/lead
See a lead violation? Report it at epa.gov/tips

From: Bandemehr, Angela
Sent: Mon, 14 May 2018 17:25:48 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Mary Jean's blood lead data survey
Attachments: MJ Revised Chapter 3 on Health 1215.docx

Hi Henry!
Here is what I have on Mary Jean's effort to pull together BLL data internationally. If you search for "paint" several studies point to paint as a source in developing countries.
Hope this helps and thanks so much for what you are doing among all the other last minute things I'm sure you have to do!!
Best,
Angela

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Chapter 3-Blood Lead Levels, Associated Demographic Risk Factors and Lead Exposure Sources of the World's Children

Key Points

- In every country surveyed, poor children have higher blood lead levels than more affluent children
- In countries where the major source of lead for children is settled dust, blood lead levels tend to peak around 2 years of age
- In countries where the major sources of exposure are point sources, water, occupational exposure and take-home exposure, age is less predictive of risk for high blood lead levels
- Few countries have population based surveys of blood lead levels
- Most blood lead studies use convenience samples so generalization is limited. Nonetheless, the studies indicate that children in many parts of the world continue to be exposed to high levels of lead

Introduction

Only one country, the United States, routinely conducts population-based surveys of blood lead levels in children 1-5 years old. The National Health and Nutrition Examination Survey (NHANES) has been conducted in two-year waves since 1999. The survey showed an immediate and significant reduction in average blood lead levels in children following the ban on the use of most types of leaded gasoline (Wheeler and Brown, 2013). A number of countries used episodic blood lead surveillance studies and found similar reductions in children's blood lead levels as leaded gasoline was banned, including China with a 40% decrease on average, Great Britain a 31% decrease, South Africa decreased 66% and Australia 35% (Li et al., 2015; Nevin, 2016; Mathee et al., 2006). Leaded gasoline was the most widespread source of lead for the world's children. However, it was, and continues to be not the only source. Once leaded gasoline was eliminated, a clearer picture emerged of the existing lead sources and the children most likely to be exposed to them. The studies reviewed in this Chapter demonstrate that significant sources of lead remain in most countries that have removed lead from gasoline and that, as a result, children continue to have blood lead levels known to cause harm.

Methods

Here we describe blood lead studies by country within continent. A literature review was conducted in 2017 using Medline and the search terms (Name of Country) followed by 'blood lead levels' and separately (Country) followed by lead poisoning. Abstracts were reviewed initially. Only studies which

enrolled pregnant women and/or children 0-16 years old, written in English and using blood lead as the outcome measure were reviewed. Only studies conducted or published well after a complete ban on leaded gasoline was certified by the United Nations Environmental Program in each country were reviewed. (UNEP citation)

For each study selected a structured abstraction was performed to capture the following information: study location, sample size, age of participants, information about the distribution of blood lead level (mean or other measure of central tendency, 95% confidence interval (CI), standard deviation, range of blood lead levels and percent of values ≥ 5 µg/dL and ≥ 10 µg/dL), demographic factors known to be related to risk for high blood lead, and environmental sample results if collected.

Most of the studies reviewed were not designed as population based studies, rather they were conducted to respond to known or suspected environmental lead contamination. Thus, because the sampling strategies vary dramatically, it is not possible to use these data to estimate mean blood lead levels by country or to compare prevalence rates among countries. Nonetheless, the studies provide information for policy makers, health care providers and parents about areas where risk for lead poisoning is high. In addition, demographic risk factors for elevated blood lead levels defined as ≥ 10 µg/dl, ≥ 5 µg/dl or both are useful for determining which sub-populations in a country are most likely to be exposed to high levels of lead in their environments. This information can help public and clinical health care providers determine which children's blood lead levels should be tested periodically. In those cases where actual environmental sampling was done or where there was information of an active or legacy point source (i.e., a mine or smelter) that information is also presented.

Africa

Of the 54 countries in Africa, 23 studies were identified in 12 countries following the leaded gasoline ban. (See Table **) All studies were site specific and often conducted as a result of a known or suspected point source. For Nigeria, there were a series of studies related to the fatal lead poisoning outbreak that occurred beginning in 2010. Only 2 are presented here, the first outbreak investigation (Dooyema et al., 2012) and a subsequent population based study (Kaufman et al., 2016). It is likely that the lack of population based studies masks the true prevalence of high blood lead levels in Africa.

In the studies where the most likely source of exposure is settled dust, children are most likely to have high blood lead levels at 2 years old. However, in areas where water or air lead levels are high, and thus lead exposure at older ages is common, young age is not predictive of higher blood lead levels. Occupational exposure either through take home lead from a parent who works with lead or by the children themselves working as apprentices or with their families is a common risk factors in these studies. Although it may be the result of publication bias, it is important to note that no negative studies were identified. Nonetheless, it is clear that the burden of high blood lead levels is disproportionately borne by the poor.

Few studies include measures of environmental lead contamination. In the future, investigators should be provided sufficient resources to quantify the environmental causes of high blood lead levels as well as the prevalence of them. Children with the highest blood lead levels are exposed to battery recycling, ore processing or take-home exposures from parents. There are known measures that can control these sources in place in other parts of the world and this knowledge could be transferred to Africa. It is also very concerning that lead paint has recently been added into the mix of environmental lead sources.

Table ** Summary of studies of blood lead levels in Africa

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
Benin 2004	Allada	1, CS, 819	2011-2013	12-24 mo	Mothers AMb5.5	IQRd: 3.9-8.5	44	N/A[f]	Poverty;	Lead paint chips in home
					Offspring AM: 4.6	IQR: 3.7-6.0	58	1.2	child >= 17 mo	Eating animals killed with lead bullets
	Allada	2, CS, 203	2012-2013	12 mo	AM: 7.41	95% CI: 6.5; 8.3	65	19	Inversely related to malaria	
Cameroon 2004	Yaounde	3, CS, 147	2015	12-83 mo	GM[c]: 8.0	<3.3-25.1	88	32	Male	Lead paint in housing; artisanal cookware
DRC 2009	Kinshasa	5, CS, 89	2012	12-24 mo	AM: 6.9	1 to 30	40	26		Cooking utensils made from discarded batteries
Egypt 2010	Cairo	6, CS, 400	2014-2015	6-18 yr	Moderate SES[e]: 5.6; 1.8		N/A	28	Urban Dwelling	Lead paint
					Slum SES: 15.8; 4.4					Lead water pipes
					Suburb SES: 10.4; 3.3					Working as an apprentice
					Urban SES: 10.8; 3.2					Child smoking
					Apprentice: 43.3; N/A					Father smoking
Kenya 2006	Nairobi slum	7, CS, 387	2007	6-59 mo	AM: 6	3.3-24.7	N/A	7	N/A	Parent in lead occupation; lead paint; soil lead levels
Morocco 2009	Fez	8, CC, 150	2012-2013	3.5-9.5 yr	Overall: 5.8	Overall: 1.8-20.02	Overall: 12.7		Industrial vs. non	
					Exp:[i] 7.1; 4	Exp: 1.8-20.2	Exp: 21.1		Iron deficiency	
					UnEx: [j] 0.38; 1.3	UnExp: 1.8-9.0	UnExp: 0			
Nigeria 2004	Abakaliki	9, CS, 349	P: 2013	Pregnant women	AM: 36.4; 18.4	2.7-73.8		88.7	Low SES	N/A
	Imo State	10, CS, 90	P: 2012	Pregnant women	AM: 99	0.5-448	N/A	79[j]	Low SES	N/A
	Nnewi	11, CS, 119	P: 2014	Pregnant women	Women AM:6.2; 2.8	N/A	N/A	Women : 10.9	Rural	N/A
				Newborns	Babies AM: 4.8; 2.6	N/A	N/A	Babies: 3.4	residents	
		12, CS, 100	P: 2008	2-9 yrs	Overall: 8.9; 4.4	N/A		Overall: 25	Older Age; city; pets	N/A
	Ibadan				Ibadan: 9.9; 5.2	N/A			Outdoors	
	Nnewi				Nnewi: 8.3; 3.5	N/A			Malaria; low parent education	
	Port Harcourt				Port Harcourt: 4.7; 2.2 N/A	N/A			Malaria; low parent education	

	Enugu	13, CS, 100	2011	1-15 yrs	AM: 8.7; 5.4	0.3-17.7	69	33	Male sex; Older	N/A
	Nasarawa	14, CS, 35	P: 2015	<7 yrs	AM: 2.1	<LOD[h]-9.5	11.4	N/A	N/A	N/A
	Zamfara	15, CS, 204	2010	<5 yrs	GM: 130.4	36.5-445	100	100	<24 mo	Ore processing; water source community well; animal deaths in compound
	Zamfara	16, PB, 383	2012	<5	Ore Processing GM: 9.5; 7.9, 11.4		N/A	38	Younger	Ore processing
					Non-Processing GM: 6.5; 6.1, 6.8		N/A	22.3	male	Lead sulphate based eyeliner; Drinking water from a pipe
Senegal 2006	Dakar	17, CS, 50	2007-2008	7 mo-7 yrs	AM: 129.5	9.8-613.9	N/A	N/A	Sibling death with lead poisoning	Recycling of lead acid batteries; high dust and soil lead levels indoors, up to 14,000 mg/kg; outdoors, up to 302,000 mg/kg
	Dakar	18, CC, 58	P: 2012	1-6 yrs	Landfill residents AM: 15; 5.8; 37.3				Living on landfill	Landfill: Soil lead 1.129 mg/kg Air lead 637.5 ng/m3
					Controls AM: 8.2; 3.2; 15.0					Control Site: Soil lead 14.3 mg/kg Air lead 9.3 ng/m3
South Africa 2006		19, CS, 1349	2007-2008	6-7 yrs	GM: 7.97	0.8-32.3	Overall: 74		Johannesburg resident	N/A
	Johannesburg						Johannesburg: 84			
	Kimberly						Kimberly: 57			
	Cape Town						Cape Town: 66			
	Strius Bay Eland Bay	20, CS, 160	2012	6-14 yrs	GM: 7.4	2.2-22.4	74	10	Living in fishing village	Family makers lead fishing sinkers
Tanzania 2004	Muhimbili	21, CS, 150	P: 2008	cord blood	AM: 4.1	0.1-18.1	N/A	10	N/A	High traffic; drinks tap water; painted house
Uganda 2006	Kambala	22, CS, 163	2009	4-8 yrs	AM: 7.15	0-30	N/A	20.5	Low SES	Drinking water not from borehole; residence < 0.5 mi from landfill
Zambia 2006	Kabwe	23, CS, 196	2014	2-8 yrs	AM: 48.3	13.5 to>65[g]		100	Living near closed mine	Surface soil lead 139 mg/kg -62,142 mg/kg

	Makululu	24, CS, 246	2012	<7 yrs	Makalulu GM: 57.1	9.4-388.7	Overall: 100	0-3 yr olds	Closed lead and zinc mine
	Kasanda				Kasanda GM: 82.2	5.4-427.8			
	Chowa				Chowa GM: 57.1	15.6 79.7			

Notations:

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Asia

Of the 50 countries in Asia, 39 studies of children's blood lead levels were identified in 17 countries. Four countries have conducted randomized population based studies. Three, one in Armenia and two in China were conducted at the city or region level and three, one in the Philippines and two in Korea were conducted at national level. These studies provide the best estimates of the prevalence of high blood lead levels in the areas surveyed. (See Table ****). The other studies were either convenience samples or cohort studies. Although such studies provide some information about blood lead levels, they cannot be used to estimate population prevalence of high blood lead levels.

In most studies, excluding Nepal, that presented demographic variables, smoking, low income, young maternal age, and low parental education were associated with higher blood lead levels. Some studies found that children less than 3 years old were more likely to have high blood lead levels while others found that risk was higher for older children. High blood lead levels were documented in both urban and rural areas.

Occupational exposures including small scale metal recycling, hobbies using lead, traditional medicines and residential lead paint were all found in studies that collected environmental samples. However, environmental samples were not reported in about half of the studies reviewed.

Japan and Korea are noteworthy in that the blood lead levels for children were very low by historic standards. (Ilmiawati, et al., 2015; Kim et al., 2017)) However, no environmental sample results were reported and it may be that the national surveys missed small 'hot spots'.

Table ** Summary of studies of blood lead levels in Asia

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
Armenia 2001		24, RPB	2013	3.9-6.9 yrs	Overall: 3 GMb: 6; 3	1.6–24.0	68.6	N/A	Living in Akhtala or Alaverdi	Close to smelter site
	Akhtala	159			Akhtala GM: 6.8;3.1	3.5–24.0	72.5	N/A	Caregiver with low education	Old windows; infrequent house cleaning
	Alaverdi				Alaverdi 3.4 GM: 6.4; 3.4	3.6–15.5	83.8	N/A		
	Yerevan				Yerevan 2.4 GM: 5.1; 2.4	1.6–11.7	52.8	N/A		

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
Bangladesh 2001	Sirajdikhan	25, CS, 618	2008-2011	Cord Blood	Median 3.1	IQR[j]:1.6-6.3	33	N/A	Older age;	N/A
	Pabna Upazilas		2010-2013	20-40 mo	Median 4.2	IQR: 1.7-7.6	46	N/A	Mother's education; mother's height	
	Dhaka Chirirbandar	26, CS, 919	2007-2006	< 16 yrs	AM: 12; 8.3	N/A[k]	N/A	54	Urban; low body mass; low iron	Close to industry; use of traditional medicine
China 2001	19 Provinces	27, MA, 73,629	2006-2012	0-18 yrs	N/A	N/A	N/A	5.30%	Aged 3 yrs	
	11 Cities	28, CS, 11,255	2004; 2010	0-72 mo	2004 GM: 4.64; 2.1	N/A	N/A	9.8	Home care; boarding school	Parent works with lead
					2010 GM: 3.9; 1.8	N/A	N/A	1.3	Father's education; frequent hand to mouth activity	
	Shanghai	29, RPB, 2,291	2013-2014	0-6 yrs	GM: 1.97	N/A	2.7	0.26	Parental education; poverty; district lives in; poor diet; older age; male	Hobbies with lead; housing condition; traditional popcorn
	Jinan	30, CS, 1,344	2004-2005	3-6 yrs	Median: 6.2	1.8-32	N/A	8	Siblings; crowded area; low mother education	Parent smoker
	Wuhan	31, CS, 15,536	2013	< 18 yrs	GM: 4.5; CI: 4.45 4.5	N/A	44	2	Summer; male	N/A
	Hunan	32, CS, 124,376	2009-2013	0-6 yrs	Median: 6.9	0.43-79.9		10.5	Older age; tested 2009-2010	N/A
	Chengdu	33, CS, 2,271	2010-2011	<7 yrs	AM[c]: 6.2	1-64.2	N/A	2.1	Older Age; frequent hand to mouth activity	Uses coal; residence in industrial zone
	Guiyu	34, RPB	2014	<11 yrs	Median: 7.06	IQR: 2.35-11.77	N/A	24.8	Living in Guiyu	E-waste piles around house
	Haojiang	882			Median: 5.89	IQR: 2.35-9.43	N/A	12.8	<3 yrs or; > 6 yrs; male sex	
	Nantong	35, CS, 106	2012; 2013	1-14 yrs	Pre GM: 12.12	N/A	N/A	58.5	Age<7;	Controlling for risk factors
					Post GM: 5.8	N/A	N/A	8.5	Low mother education; parental occupation; infrequent handwashing	Lead emissions associated with lower blood lead
	Jintan	36, CS, 1,110	2011-2012	0-6 yrs	AM: 4.94	1.8-32	N/A	1.4	Age;	N/A
Japan 1999	Asahikawa	37, CS, 229	2008-2009	9-10 yrs	GM: 0.9	0.3-4	0	0	N/A	N/A
	Tokyo	38, CS, 346	2010-2012	Pregnant women 36 wks gestation	GM: 0.99	<LOD[l]-4	0	0	N/A	N/A
Korea 1999	National	39, RPB, 1,585	2010-2013	10-17 yrs	GM: 1.25 CI: 1.2, 1.3	N/A	N/A		Male; smoker; alcohol use; young age	N/A

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
	National	40, RPB, 2,346	2012-2014	3-18 yrs	GM: 1.23 CI: 1.2, 1.35	N/A	N/A		Male; younger age	N/A
	National	41, CoS, 2,281	2005-2006	6-8 yrs	Boys GM: 1.73 CI: 0.02, 9.2	N/A	N/A		Male; rural residence; poverty	N/A
					Girls GM: 1.56 CI: 0.02,6.8				low father education; playing outside	
	Seoul	42, RCoS, 884	2006-2010	Pregnant women	EP[e] GM: 1.36	0.26-9.1	N/A		N/A	N/A
					LP[f] GM: 1.27	0.43-4.12				
	Busan	43, CS, 79	2013	Mothers	GM: 1.02	0.5-2.2	0		N/A	N/A
				Newborns	GM: 0.71	0.47-1.58				
				12 mos (n=14)	GM: 0.85	0.85-2.14				
	Seoul	44, CS, 210	2014-2016	8-23 mos	Median: 0.83	IQR: 0.86-1.05	0	0	Breast fed; iron deficiency	Father smoker
India 2000	National	45, CoS, 807	P[g]: 2015	<2 yrs	AM: 4.9	N/A	N/A	>15 2.5	Male;	N/A
				2-10 yrs	AM: 4.2			>15 2.6	Residence in Maharashtra or Bihar	
Indonesia 2006	Serpong	46, CS, 108	2012	6-7 yrs	GM: 6.4	2-12.5	N/A	7.5	Male; low income	N/A
Iran 2004	Tehran	47, CC, 60	2012	1-60 mos	AM: 4.83	0.3-14.8	N/A	10	No association between lead level and febrile seizures	N/A
	National	48, CC, 320	P: 2014	10-18 yrs	AM: 0.074; 0.014	N/A	N/A	N/A	Small association with metabolic syndrome	N/A
Nepal 2003	Chitwan	49, CC, 79	2008	Newborns	GM: 2.06	0.68-22.1	N/A	N/A	No association with mother smoker, age SES	N/A
Pakistan 2003	Karachi	50, LCS, 52	2014	Pregnant women	AM: 16.2; 8.6	3.3-50.1	98.5	79.4	N/A	Lead levels in food
				Newborns	AM: 14.1; 8	4.4-42.1	97	67.2		house dust
				2 year olds	AM: 21.9; 9.4	8.3-52.1	100	98.1		respirable dust
	Peshwar	51, CS, 100	2015	1-10 yrs	GM: 0.34	N/A	>1 yr 6	0	Residential district	N/A
	Karachi	52, CS, 269	2006-2008	6-60 mos	AM:22; 10.4	5.2-86.2	N/A	N/A	<3 yrs old; iron deficiency	N/A
	Wah/Gujranwala	53, CC, 246	P: 2011	1-6 yrs	Exp[h] AM: 8.1	1-20.9	N/A	31	iron deficiency	Parent works in smelting/battery recycling; high dust lead levels
					Unexp[i] AM: 6.7	1.4-13.3		11		
Philipines 2001	Visayas	54, RPB, 866	2003-2004	6-59 mos	AM: 7.1	N/A	N/A	N/A	Poverty; anemia; folate deficiency	
	Visayas	55, CS, 2,861	2003-2004		GM: 6.9	N/A	N/A	21	N/A	Lead paint; makes fishing weights
Russia 2000	Chapaevsk	56, CoS, 489	2003-2005	8-9 yrs old	Median: 3	N/A	28	3	N/A	N/A
Saudi Arabia 2001	Al-Kharj	57, CS, 653	2004	cord blood	2.2; 1.7	N/A	N/A	1.23	No prenatal vitamins	N/A

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
Taiwan 2000	4 areas	58, CC, 214	P:2011		Exp AM: 7.15	N/A	N/A	N/A	Exposed to oil refinery	N/A
					Unexp AM: 3.45					
Thailand 1999	Tak Region	59, CoS, 254	2012	1-14 yrs	AM: 9.8; 5.1	N/A	N/A	43.3	< 5 yrs old	Use of lead acid battery in house; use of lead pottery
	Tak Region	60, CS, 213	2010	3-6 yrs	AM: 7.7; 4.6	3-25	N/A	26	Male	Drinking water not bottled
Turkey 2006	Ankara	61, CS, 93	2011	cord blood	AM: 2.6; 0.97	0.91-5.19	N/A	0	N/A	H63D gene variant vs. wild type
Vietnam 2001	Nghia Lo	62, CS, 20	2011	18-48 mos	GM*: 17.3	6.7-62.3[m]	100	80	N/A	Distance to secondary smelter
	Dong Mai	63, RCoS, 109	2011	≤ 10 yrs	N/A	12->65[n]	100	100	N/A	Metal recycling by family member

*Among those with levels >LOD

Notations:

[a] type-Study design CC=case control; CS=convenience sample; PBR=population based randomized sample;
[b] AM=arithmetic mean; unless otherwise noted in the article 'mean' was characterized as arithmetic mean;
[c] GM=geometric mean; [d] IQR=interquartile range; [e] SES=socio-economic status; [f] N/A=not available; [g] >65=sample result above the upper limit of detection for the LeadCare II blood lead analyzer; [h] LOD=limit of detection for blood lead analysis; [i] Exp=exposed; [j] UnExp=unexposed

Australia and Oceania

Of the 14 countries in Australia and Oceania only two studies were identified, both in Australia. For the one longitudinal study conducted by Gulson et al., only data from 2003 were extracted because the leaded gasoline ban was certified in 2001. (See Table *****) Children in Australia continue to have high blood lead levels with most testing being done in areas with active mining and smelting sites.

Table ** Summary of studies of blood lead levels in Australia

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
Australia 2001	New South Wales	64, CS, 114	2001-2003	0.29-2.4 yr	GM: 2.6	0.6-19	N/A	5	None significant	Lead vs. non paint
	Broken Hill	65, CS, 499	2003	1-4 yr	GM: 7.1	N/A	N/A	32	Age< 3 yrs	High soil lead levels

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[b] AM=arithmetic mean; unless otherwise noted in the article 'mean' was characterized as arithmetic mean;
[c] GM=geometric mean; [d] IQR=interquartile range; [e] SES=socio-economic status; [f] N/A=not available; [g] >65=sample result above the upper limit of detection for the LeadCare II blood lead analyzer; [h] LOD=limit of detection for blood lead analysis; [i] Exp=exposed; [j] UnExp=unexposed

Europe

Of the 48 countries in Europe, 8 countries with 11 studies conducted after lead gasoline was banned were identified. Studies were only identified in countries which belong to the European Union (See Table ***). These include two nationally representative samples (one in Germany, one in Poland) which found geometric mean blood lead levels 1.6 µg/dL in children and 1.1 µg/dL among pregnant women, respectively (Schultz et al., 2010; Polanska et al., 2014). The other studies were convenience samples

focused on areas where high ambient environmental lead contamination was suspected due to current or legacy industrial emissions. The highest blood lead levels were found in Sardinia, Italy but no environmental samples were collected in this study (Sanna et al, 2011).

Table ** Summary of studies of blood lead levels in Europe

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
Belgium 2000	Northern Campine	66, CS, 334	P: 2016	2-6 yrs	Industrial: AM: 2.5 CI: 1; 4	1-12	N/A	N/A	N/A	Lives in industrial area; dust lead levels
					Adjacent: AM: 2.6 CI: 0.6; 4.4					
					Reference: AM: 2 CI: 0.6; 4.5					
Finland 1999	Tikkurila	67, CS, 63	P: 2004	0-6 yrs	Tikkurlia: AM: 2.7	<2.1-5.0	N/A	0	Residence near former smelter	High soil lead levels
	UnExp				UnExp: AM 2.1	<2.1-4.1	N/A	0		
Germany 1999	North Rhine	68, CS, 238	2000	4.8-9.1 yrs	AM: 2.9	0.6-8.6	N/A	0		Lives in industrial area
	National	69, PBS, 1245	2003-2006	6-14 yrs	GM: 1.57 95 %: 3.21	N/A	N/A	N/A		N/A
Greece 2004	Athens	70, CS, 814	2009-2012	6-36 mos	GM: 2.78; 2.34	1-20	11.7	1.8		13-36 mo old; Roma: mother manual laborer; father not working
Italy 2003	Sardinia 3 sites	71, CS, 106	2007	11-14 yrs	Perdasdefogu: GM: 12.94; 1.3	11.4-14.7	All: 30%	N/A		N/A
					Escalaplano: GM: 12.55; 0.8	11.4-14.4				
					Jerzu: GM: 12.82; 0.86	10.55-14.5				
Poland 2003	Warsaw	72, CC, 150	P: 2013	Pregnant women	Smokers: Med 0.25	IQR: 0.15-0.35	N/A	N/A		N/A
					Nonsmoker: Med 0.05	IQR: 0.02-0.1				
	National	73, CS, 590	2007-2011	Pregnant women	GM: 1.1; 0.2	0.3 – 5.7	N/A	0		Older age; less education; higher BMI
	Bukowno	74, CC	P: 2007	9 yrs	Bukowno AM: 5.29	N/A	N/A	3%		N/A
					AM: 5.29					
	Ustron	141			Ustron	N/A	N/A	0		

					AM: 3.45				
Spain 2004	Canary Islands	75, CS, 120	2007-2008	6 mo-6yr	AM: 1.3; 2.0		5%	N/A	N/A
Sweden 1999	Hassleholm Simrishamn	76, CS, 100	2002-2003	Pregnant women	Med: 1.1	0.42–7.9	N/A	N/A	N/A

Notations:

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[b] AM=arithmetic mean; unless otherwise noted in the article 'mean' was characterized as arithmetic mean;
[c] GM=geometric mean; [d] IQR=interquartile range; [e] SES=socio-economic status; [f] N/A=not available; [g] >65=sample result above the upper limit of detection for the LeadCare II blood lead analyzer; [h] LOD=limit of detection for blood lead analysis; [i] Exp=exposed; [j] UnExp=unexposed

North and Central America

One Central American country, Belize, conducted a study of blood lead levels since the leaded gasoline ban (Charalambous et al., 2009). All three North American countries have also conducted such studies. (See Table ***) Of the 8 studies conducted in Mexico, industrial sites were most often identified as associated with high blood lead levels. In the United States, the NHANES studies conducted between 1997 and 2014 demonstrate a significant and sustained reduction in average blood lead levels for children 1-5 years old. (See graph ****). However, data from state and local lead poisoning prevention programs indicate that high blood lead levels continue to occur in impoverished communities, housing built before the 1978 ban on lead paint and among newly immigrant populations. A total of 8,856 children were identified with blood lead levels ≥10 µg/dL and reported to the Centers for Disease Control and Prevention in 2014 and another 148.51 per 100,000 children <1 year old and 444.49 per 100,000 had blood lead levels 5-9 µg/dL (Raymond and Brown, 2015).

Table ** Summary of studies of blood lead levels in North and Central America

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
Belize 2001	Belize City San Pedro Orange Walk Benque Viejo	77, CS, 1,640	2002	2-8 yr	AM: 4.94; 2.96	N/A	N/A	7	Large urban center	N/A
Canada 1999	Montreal	78, CS, 306	2009-2010	12-71 mo	GM: 1.35	0.4-19.1	N/A	0.3	Non-white; low parent education	Lead hobbies; high lead in dust and water; lead paint
	National	79, RPB, 3,700	2009-2011	6-18 yr	GM: 0.8 CI 0.75, 0.82		N/A	N/A	Low iron; ferritin x ethnicity	N/A
Mexico 1996	Morelos	80, CS, 226	2011	6-14 yrs	AM[b]: 7.23; 4.9	1.5-36.5	64	18	None significant	Lead glazed pottery; painted walls
	Torreon	81, PBR, 512	2009-2010	12-15 yrs	GM[c] 4.0; 1.7	N/A [d]	N/A	N/A	Older age; poor; low water arsenic level	Distance from smelter; wind direction
	Sonora	82, CS, 165	2009	6-12 yrs	AM: 3.2	0.17-9.0	8.5	0	Living in specific villages	
	Ciudad Juarez	83, CS, 135	2012	6-12 yrs.	GM: 4.2; 3.8	<LOD[e]-13.5	40	10	N/A	N/A

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
	Mexico City	84, CS, 171	2006-2007	2-6 yrs	GM: 4.5	<LOD-24.5	N/A	N/A	Age; sex	Consuming leaded candy
	Coatzacoalcos	85, CS, 102	N/A	6-12 yrs	Allende GM:4.5	2.5-10.1	3.3	0	High levels of PAHs	
					Mundo Nuevo GM: 5.2	2.5-10.4				
					Lopes Mateo GM: 4.6	2.9-9.6				
	San Luis Potos'i	86, CS, 55	2015-2016	6-12 yrs	GM: 5.75	1.0-12.5	20	5	N/A	Site close to metal works
	Torreon	87, CS, 34	2005-2006	2-17 yrs	GM: 9.8	5.0-25.8	N/A	N/A	Older age	Old gas; smelter emissions
United States 1996	National	88, CS, 2,675,145	2009-2014	0-5 yrs	N/A	N/A	<1 yr: 0.2	0.3		East Central States
							≥ 1 yr: 0.5	0.3		
	National	89, RPB,		1-5 yrs		N/A				
		1999-2002: 1,621			GM: 1.9; CI 1.8, 2.1			8.6	1.6	Age< 3;
		2003-2006: 1,879			GM: 1.6; CI 1.5, 1.7		4.1	N/A	Black race;	
		2007-2010: 1,653			GM: 1.3; CI 1.3, 1.4		2.6	0.8	old housing; public medical insurance	
	National	90, RPB		1-5 yrs		N/A				Male; poor
		2011-2012: 7,920			GM: 0.97; Ci 0.95, 0.99		2	N/A		
		2013-2014: 5,215			GM: 0.84 CI 0.86, 0.86		0.5	N/A		
	Puerto Rico	91, RPB, 439	2010	1-5 yrs	GM: 1.6; Ci 1.3, 1.9	N/A	3.2	0.5	Low maternal education	Lead hobbies in home
	Flint MI	92, CS, 9,422	2013-2016	<6 yrs	N/A	N/A	N/A	3.1	None significant	High water lead levels
	Indiana	93, CS, 197	2009	≤ 6 yrs	GM: 4.2; 1.4	1.6-29.0	37	7.1	Burmese ethnicity	Traditional remedy use
	Manchester, NH	96, CoS, 93	2004	<16 yrs	GM: 5.4	1-29	N/A	24	Liberian ethnicity; wasting or stunting	N/A
	New York City	94, CS, 52	2008-2009	<18 yrs	GM: 3.1; 1.5	N/A	15	0	South Asian ethnicity; low income	Recent home repairs
	Washington, DC	95, CS, 63,854	1998-2006	< 6yrs	N/A	N/A	19	3	Male; age	

Notations:

[a] type-Study design CC=case control; CS=convenience sample; PBR=population based randomized sample;
[b] AM=arithmetic mean; unless otherwise noted in the article 'mean' was characterized as arithmetic mean;
[c] GM=geometric mean; [d] IQR=interquartile range; [e] SES=socio-economic status; [f] N/A=not available; [g] >65=sample result above the upper limit of detection for the LeadCare II blood lead analyzer; [h] LOD=limit of detection for blood lead analysis; [i] Exp=exposed; [j] UnExp=unexposed

South America

Of the 12 South American countries, 8 countries had studies identified in our search for a total of 16 studies meeting search criteria. (See Table ***) Most studies were convenience samples conducted in response to known or suspected high ambient lead contamination. However, there was a randomized

population based study conducted in Brazil, as well as several cohort studies. In those studies that collected environmental and/or risk data, parental occupation in a lead industry was often predictive of higher blood lead level. In 2 studies, income did not predict risk for higher blood lead levels (Ruiz-Castelle et al., 2012; Martinez et al., 2013). In one study, homogeneity of socio-economic status may explain this finding, but it is unexplained in the other.

Table ** Summary of studies of blood lead levels in South America

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
Argentina 1999	Cordoba	96, CS, 161	2009-2012	1 mo-14 yr	2.58; 0.3	0.2-28.7	16.8	3.7	Age; poverty; lives in suburb	N/A
	La Planta	97, CS, 159	2010-2011	neonates	GM: 2.1; CIb 1.9-2.3	LOD-7.1	5.5	0	None significant	N/A
	La Planta	98, CS, 319	2009-2012	1-6 yrs	Med[c]: 2.2	IQR: 1-3	12.6	2.8	Age <3 yrs; low maternal education; pica; anemia; dirt floors; over-crowding	N/A
Bolivia 1999	Oruro	99, CS, 246	2007-2009	Pregnant women	GM: 1.76; 1.7-1.8	0.5-5.2	N/A	N/A	None significant	N/A
Brazil 1997	Rio de Janero	100, CS, 38	P: 2002	Pregnant women	Trimester 1: 5.8; SE:0.5		N/A	N/A	Trimester	N/A
					Trimester 2: 6.3; SE: 0.5					
					Trimester 3: 8.5; SE: 0.7					
	Ribeira Valley	101, CC, 295	P:2002	7-14 yrs	Exp Med: 11.25	1.8-37.8	N/A	59.6	Male;	N/A
					UExp Med: 4.4	1.8-29.4	N/A		Father works with lead	
	Cotegipe;	102, CC, 125	2008	1-<11 yrs	Exp GM: 1.9; 1.5	0.20 6.71	N/A	N/A	Age;	
	Capiarara				UExp GM: 1.5; 1.2	0.20 5.05			living adjacent to mine; burning waster at home; environmental; tobacco smoke at home	
	Porto Alegre	103, CS, 97	2006	0-5 yrs	Med: 5.2		51	16.5	Younger age; low father education; waste recyling at home	N/A
	Sao Paulo	104, RPB, 391	2007-2008	<11 yrs	GM: 1.7	N/A	N/A	N/A	Adult; male; area of residence	N/A
Chile 1999	Antofagasta	105, CS, 192	2005	IQR: 10-13 yrs	Med: 3.3	IQR: 2-4.3	N/A	N/A	Young age; boys; lower maternal education; distance from mining site	Soil lead at former mining site: Med: 1,300 ppm (IQR: 637-1,600) Range 173-3,758ppm
	Antofagasta	106, CC, 93	P: 2004	5-12 yrs	ALAD-1 GM: 9.5 ALAD-2 GM: 14.1	N/A	N/A	N/A	Carrier status; distance from lead site	
Colombia 1999	Cali	107, CC, 350	P:2012	6-14 yrs	Exp AM: 4.7; 1.6	1.1-9.9	44.2	0	Race; male	N/A
					UExp AM: 3.0; 1.2	0.3-6.6	8.1	0	age<10; resides in industrial zone; poverty	

Country YR leaded gas ban	Region	Study Population ref, type[a], n	Study Date yrs	Age Range yr, mo	Mean BPb; SD µg/dL	Range µg/dL	% ≥ 5 µg/dL	% ≥ 10 µg/dL	Risk Factors	Environmental Sources
	Cartegena	108, CS, 189	2004		GM: 4.7; CI 4.2-5.4	N/A	N/A	7.4	Neighborhood	N/A
Ecuador 2001	La Victoria	109, CoS, 22	2012		AM: 14.5; 7.9	4.0–37.0	95.4	68.2		N/A
Peru 2004	San Cristobol Peruanito	110, CC, 221	2010-2011	0-17 yrs	0-6 yrs		25.7	N/A	N/A	N/A
					Exp GM: 7.6; 3.1	3.3-17.7				
					Uexp GM: 7.6;2.9	3.3-17.8				
	Santa Isabella de Copal			7-17 yrs		25.8	N/A	N/A		
					Exp GM: 9.5; 4.7	3.3-22.6				
					Uexp GM: 9.2; 4.5	3.4-26.8				
Uruguay 2001	Montevideo	111, CS, 222	2007	6-36 mo	AM: 9.3; 6.9	1.0 – 35.6	N/A	N/A	33.9	N/A

Notations:

[a] type-Study design CC=case control; CS=convenience sample; PBR=population based randomized sample;
[b] AM=arithmetic mean; unless otherwise noted in the article 'mean' was characterized as arithmetic mean;
[c] GM=geometric mean; [d] IQR=interquartile range; [e] SES=socio-economic status; [f] N/A=not available; [g] >65=sample result above the upper limit of detection for the LeadCare II blood lead analyzer; [h] LOD=limit of detection for blood lead analysis; [i] Exp=exposed; [j] UnExp=unexposed

Discussion

This is the first study to review and summarize blood lead levels for children and pregnant women around the world following the removal of lead in gasoline in each country where published studies were identified. It justifies taking a closer look at blood and environmental lead levels in most countries through both systematic population based surveys which are generalizable to the country as a whole, as well as systematic small area studies in communities or subpopulations are known or suspected to be at higher risk for lead exposure compared to the general population. The tables presented above give an indication of factors that could be used to direct small area studies.

Future work should also include more rigorous systematic literature reviews using methods to assess evidence quality such as GRADE, Cochrane, United States Preventive Task Force Community Guide, or other methods. Such reviews should be conducted periodically to monitor progress toward controlling or eliminating lead hazards and preventing high blood lead levels in children and pregnant women.

The technical expertise to prevent lead from harming children exists and can be transferred readily to countries which need it.

REFERENCES

Africa

1. Bodeau-Livinec F, Glorennec P, Cot M, Dumas P, Durand S, Massougbodji A, Ayotte P, Le Bot B. 2016. Elevated Blood Lead Levels in Infants and Mothers in Benin and Potential Sources of Exposure. International Journal of Environmental Research and Public Health. 13:316.

2. Moya-Alvarez V, Mireku M, Ayotte P, Cot M Bodeau-Livinec F. 2016. Blood Lead Levels Are Associated with Reduced Risk of Malaria in Beninese Infants. PLOS ONE|DOI:10.1371/journal.pone.0149049A1.

3. Monebenimp F, Kuepouo G, Chelo D, Anatole P, Bissek AC, Gottesfeld P. 2017. Blood lead levels among children in Yaounde' Cameroon. Frontiers in Public Health. 5:1-5.

4. Weidenhamer J, Kobunski P, Kuepouo G, Corbin R, Gottesfeld P. 2014. Lead exposure from aluminum cookware in Cameroon. Science of the Total Enviroment. 496:339-347.

5. Kashala-Abotnes E, Mumbere Pépé, Mishika J, Ndjukendi A, Mpaka D, Bumoko M, Kayembe T, Tshala-Datumbay D, Kazadi T, Okitundu D. 2016. Lead exposure and early child neurodevelopment among children 12–24 months in Kinshasa, the Democratic Republic of Congo. European Child Adolescent Psychiatry 25:1361–1367.

6. Moawad E, Badawy N, Manawill M. 2016. Environmental and Occupational Lead Exposure Among Children in Cairo, Egypt: A Community-Based Cross-Sectional Study. Medicine 95:1-8.

7. Olewe T, Mwanthi M, Wang'ombe J, Griffiths J. 2009. Blood Lead Levels And Potental Environmental Exposures Among Children Under Five Years In Kibera Slums, Nairobi. East African Journal of Public Health. 6:6-10.

8. Bouftini S, Bahhou J, Lelievre B, de la Barca J. M., Turcant A, Diquet B, Abourazzak S, Chaouki S, Hida M, Khattabi A, Nejjari C, Amarti A, Achour S. 2015. Screening for Childhood Lead Poisoning in the Industrial Region of Fez, Morocco. Archives of Environmental Contamination and Toxicology. 68:442–450.

9. Adekunle I, Ogundele J, Oguntoke O, Akinloye O. 2010. Assessment of blood and urine lead levels of some pregnant women residing in Lagos, Nigeria. Environmental Monitoring and Assessment. 185:3795–3801.

10. Njoku C, Orisakwe O. 2012. Higher blood lead levels in rural than urban pregnant women in Eastern Nigeria. Occupational and Environmental Medicine. 69:850-851.

11. Obi E, Orisakwe O, Okafor C, Igwebe A, Ebenebe J, Afonne O, Ifediata F, Nils B, Nriagu J. 2014. Towards Prenatal Biomonitoring in Eastern Nigeria: Assessing Lead Levels and Anthropometric Parameters of Newborns.

12. Nriagu J, Afeiche M, Linder A, Arowolo T, Ana G, Sridhar M, Oloruntoba E.O., Obi Ejeatulu, Ebenebe J, Orisakwe O, Adesina A. 2008. Lead poisoning associated with malaria in children of urban areas of Nigeria. International Journal of Hygiene and Environmental Health. 211:591-605. Blood lead levels in children attending a tertiary teaching hospital in Enugu, south-eastern Nigeria.

13. Ugwuja E, Ogbu I, Umeaku E, Otuu F. 2014. Blood lead levels in children attending a tertiary teaching hospital in Enugu, southeastern Nigeria. Paediatrics & International Child Health. 34:216-219.

14. Bello O, Naidu R, Rahman M, Liu Y, Dong Z. 2015. Lead concentration in the blood of the general population living near a lead-zinc mine site, Nigeria: Exposure pathways. Science of the Total Environment. 542:908-914.

15. Dooyema CA, Neri A, Lo YC, Durant J, Dargan PI, Swarthout T, Biya O, Gidado SO, Haladu S, Sani-Gwarzo N, Nguku PM, Akpan H, Idris S, Bashir AM, Brown MJ. Outbreak of Fatal Childhood Lead Poisoning Related to Artisanal Gold Mining in Northwestern Nigeria, 2010. 2012. Environmental Health Perspectives 120:601-607.

16. Kaufman JA, Brown MJ, Umar-Tsafe N, Adbullahi MB, Getso KI, Kaita IM, Sule BB, Ba'aba A, Davis L, Nguku PM, and Sani-Gwarzo N. Prevalence and Risk Factors of Elevated Blood Lead in Children in Gold Ore Processing Communities, Zamfara, Nigeria, 2012. 2016. Journal of Health and Pollution. 11:2-8.

17. Haefliger P, Mathieu-Nolf M, Lociciro S, Ndiaye C, Coly M, Diouf A, Faye A, Sow A, Tempowski J, Pronczuk J, ilipe A, Bertollini R, Neira M. 2009. Mass lead intoxication from informal used lead-acid battery recycling in Dakar, Senegal. Environmental Health Perspectives. 117:1535-1540.

18. Cabral M, Dieme D, Verdin A, Garçon G, Fall M, Bouhsina S, Dewaele D, Cazier F, Tall-Dia A, Diouf A, Shirali P. 2012. Low-level environmental exposure to lead and renal adverse effects: A cross-sectional study in the population of children bordering the Mbeubeuss landfill near Dakar, Senegal. Human & Experimental Toxicology. 31:1280-1291.

19. Naicker N, Mathee A, Barnes B. 2013. A follow-up cross-sectional study of environmental lead exposure in early childhood in urban South Africa. South African Medical Journal. 103:935-938.

20. Mathee A, Khan T, Naicker N, Kootbodien T, Naidoo S, Becker Piet. 2013. Lead exposure in young school children in South African subsistence fishing communities. Environmental Research. 126:179-183.

21. Azayo M, Manji K, Kalokola F. 2008. Lead Levels in Women at Delivery at the Muhimbili National Hospital: A Public Health Problem. Journal of Tropical Pediatrics. 55:138-139.

22. Graber L, Asher D, Anandaraja N, Bopp R, Merrill K, Cullen M, Luboga S, Trasande L. 2010. Childhood lead exposure after the phaseout of leaded gasoline: an ecological study of school-age children in Kampala, Uganda. Environmental Health Perspectives. 118:884-889.

23. Caravanos J, Fuller R, Robinson S 2014. Notes from the field: severe environmental contamination and elevated blood lead levels among children - Zambia, 2014. MMWR: Morbidity & Mortality Weekly Report. 63:1013.

Asia

24. Grigoryan R, Petrosyan V, Melkomian D, Khachadourian V, McCartor A, Crape B. Risk factors for children's blood lead levels in metal mining and smelting communities in Armenia: a cross-sectional study. (2016) BioMed Central Public Health. 16:945

25. Gleason K, Valeri L, Shankar A, Hasan M, Quamruzzaman Q, Rodrigues E, Christiani D, Wright R, Bellinger D, Mazumdar M. (2016) Stunting is associated with blood lead concentration among Bangladeshi children aged 2-3 years. Environmental Health. 15:103

26. Mitra A, Ahua E, Saha P. (2012) Prevalence of and Risk Factors for Lead Poisoning in Young Children in Bangladesh. Journal of Health, Population and Nutrition. 30:404-409.

27. Li M, Cao J, Gao Z, Shen X, Yan C. (2015) The trend of lead poisoning rate in Chinese population aged0–18 years old: A meta-analysis. BioMed Central. 15:756.

28. Li T, Dai Y, Xie X, Tan Z, Zhang S, Zhu Z. (2014) Surveillance of childhood blood lead levels in 11 cities of China World Journal of Pediatrics. 10:29-37.

29. Cao J, Li M, Wang Y, Yu G, Yan C. (2014) Environmental Lead Exposure among Preschool Children in Shanghai, China: Blood Lead Levels and Risk Factors. PLOS|One December.

30. Liu J, Ai Y, McCauley L, Pinto-Martin Y, Yan C, Shen Y, Needleman H. (2012) Blood Lead Levels and Associated Socio-demographic Factors among Preschool Children in the South Eastern region of China. Pediatric and Perinatal Epidemiology. 26:61-69.

31. Li Y, Wu S, Xiang Y, Liang1 X. (2014) An Investigation of Outpatient Children's Blood Lead Level in Wuhan China. PLOS|One. 9:e95284

32. Qiu J, Wang K, Wu X, Xiao Z, Lu X, Zhu Y, Zuo C, YangY, Wang Y. (2015) Blood Lead Levels in Children Aged 0–6 Years Old in Hunan Province, China from 2009– 2013. PLOS|One April.

33. Zhang X, Yang Y, Jiang Y, Shi H, Chang L, Li J, Yang H. (2015) Surveillance of childhood blood lead levels in Chengdu, China in 2010–2011. Singapore Medical Journal. 56:407-411.

34. Guo P, Xu X, Huang B, Sun D, Zhang J, Chen X, Zhang Q, Huo X, Hao Y. (2014) Blood Lead Levels and Associated Factors among Children in Guiyu of China: A Population-Based Study. PLOS|One 9:e105470.

35. Chen K, Huang L, Yan B, Li H, Sun H, Bi J. (2014) E□ect of Lead Pollution Control on Environmental and Childhood Blood Lead Level in Nantong, China: An Interventional Study. Environmental Science and Technology. 48:12930−12936.

36. Zhao T, Chen B, Wang H, Wang R, Zhang H. (2013) Evaluation of toxic and essential elements in whole blood from 0- to 6 year old children from Jinan, China. Clinical Biochemistry 46:612-616.

37. Ilmiawati C, Yoshida T, Itoh T, Nakagi Y, Saijo Y, Sugioka Y, Sakamoto M, Ikegami A, Ogawa M, Kayama F. (2015) Biomonitoring of mercury, cadmium, and lead exposure in Japanese children: a cross-sectional study. Environmental Health and Preventive Medicine.20:18–27.

38. Nishioka E, Yokoyama K, Matsukawa T, Vigeh M, Hirayama S. Ueno T, Miida T, Makino S, Takeda S. (2014). Evidence that birth weight is decreased by maternal lead levels below 5 µg/dL in male newborns. Reproductive Toxicology. 47:21-26.

39. Kim N, Ahn J, LeeB, Park J, Kime Y. (2017) Environmental exposures to lead, mercury, and cadmium among South Korean teenagers (KNHANES 2010–2013): Body burden and risk factors. Environmental Research. 156:468-476.

40. Burn E, Song I, Ha M, Kim Y, Lee K, Kim H, Lim S, Kim S, Lee C, Kim S, Cheong H, Sakon J, Kang H, Son M, Oh G, Kim Y, Yang J, Song S, Seo H, Jeongseon K, Oh S, Yu J, Change S, Kwon H, Choi Y, Choi W, Kim S, Yu S. (2016) Representative levels of blood lead, mercury, and urinary cadmium in youth: Korean environmental health survey in children and adolescents (KorEHS-C), 2012-2014. International Journal of Hygiene and Environmental Health. 219;412-416.

41. Lim S, Ha M, Hwang S, Son M, Kwon H. (2015) Disparities in Children's Blood Lead and Mercury Levels According to Community and Individual Socioeconomic Positions. International Journal of Environmental Research and Public Health. 12:6232-6248.

42. Kim Y, Ha E, Park H, Ha M, Kim Y, Hong Y, Kim E, Kim B. (2013) Prenatal lead and cadmium co-exposure and infant neurodevelopment at 6 months of age: The mothers and children's environmental health (MOCEH) study. Neurotoxicology 35:15-22.

43. Kim Y, Chung J, An H, Park S, Kim B, Bae J, Han M, Cho Y, Hong Y. (2015) Biomonitoring of Lead, Cadmium, Total Mercury, and Methylmercury Levels in Maternal Blood and in Umbilical Cord Blood at Birth in South Korea. International Journal of Environmental Research and Public Health. 12:13482-13493.

44. Choi J, Chang J, Hong J, Shin S, Park J, Oh S. (2017) Low-Level Toxic Metal Exposure in Healthy Weaning-Age Infants: Association with Growth, Dietary Intake, and Iron Deficiency. International Journal of Environmental Research and Public Health. 14:388.

45. Iyer S, Sengupta C, Velumani A. (2015) Lead toxicity: An overview of prevalence in Indians. Clinica Chimica Acta 451:161-164.

46. Iriani D, Matsukawa T, Tadjudin M, Itoh H, Yokoyama K. (2012) Cross-sectional Study on the Effects of Socioeconomic Factors on Lead Exposure in Children by Gender in Serpong, Indonesia. International Journal of Environmental Research and Public Health. 9:4135-4149.

47. Khosravi N, Izadi A, Noorbakhsh S, Javadinia S, Tabatabaei A, Ashouri S, Asgarian R. (2014) Assessments of blood lead levels in children with febrile convulsion. Medical Journal of the Islamic Republic of Iran. 28:97.

48. Poursafa P, Ataee E, Motlagh M, Ardalan G, Tajadini M, Yazdi M, Kelishadi R. (2014) Association of serum lead and mercury level with cardiometabolic risk factors and liver enzymes in a nationally representative sample of adolescents: the CASPIAN-III study. Environmental Science and Pollution Research. 21:13496–13502.

49. Parajuli R, Fujiwara T, Umezaki M, Furusawa H, Watanabe C. (2014) Home environment and prenatal exposure to lead, arsenic and zinc on the neurodevelopment of six-month-old infants living in Chitwan valley, Nepal. Neurotoxicology and Teratology 41:89-95.

50. Fatmi Z, Sahito A, Ikegami A, Mizuno A, Cui X, Mise N, Takagi M, Kobayashi Y, Kayama F. (2017) Lead Exposure Assessment among Pregnant Women, Newborns, and Children: Case Study from Karachi, Pakistan. International Journal of Environmental Research and Public Health. 14:413.

51. Afridi S, Malik F, Khan M, Ahmad S.(2016) Prevalence of Blood Lead Levels in children visiting tertiary care hospitals of Peshawar from February to April 2015: A pilot study. Journal of the Pakistani Medical Association.66:1350-1354.

52. Rahman M, Rahman B, Ahmad M, Blann A, Ahmed N. (2012) Blood and hair lead in children with different extents of iron deficiency in Karachi. Environmental Research 118:94-100.

53. Khan D, Ansari W, Khan F. (2011) Synergistic effects of iron deficiency and lead exposure on blood lead levels in children. World Journal of Pediatrics 7:150-154.

54. Solon O, Riddell T, Qumbo A, Butrick E, Ayeward G, Bacate M, Peabody J. (2008) Associations between cognitive function, blood lead concentration and nutrition among children in the central Philippines. Journal of Pediatrics 152:237-243.

55. Riddell T, Solon O, Quimbo S, Tan C, Butricka E, Peabody J. (2007) Elevated blood-lead levels among children living in the rural Philippines. Bulletin of the World Health Organization. 85:674–680.

56. Williams P, Sergeyev O, Lee M, Korrick S, Burns J, Humblet O, DelPrato J, Revich B, Hauser R. (2010) Blood Lead Levels and Delayed Onset of Puberty in a Longitudinal Study of Russian Boy. Pediatrics. 125:e1088–e1096.

57. Al-Saleh I, Shinwari N, Nester M, Mashhour A, Moncari L, Mohamed G, Rabahd A. (2008) Longitudinal Study of Prenatal and Postnatal Lead Exposure and Early Cognitive Development in Al-Kharj, Saudi Arabia: A Preliminary Results of Cord Blood Lead Levels. Journal of Tropical Pediatrics. 54: 300-307.

58. Hsiao C, Wu K, Wan K. (2011) Effects of environmental lead exposure on T helper cell-specific cytokines in children. Journal of Immunotoxicology. 8:284-287.

59. Swaddiwudhipong W, Tontiwattanasap W, Khunyotying W, Sanreun C. (2013) Blood lead levels among rural Thai children exposed to lead-acid batteries from solar energy conversion systems. Southeast Asian Journal of Tropical Medicine and Public Health 6: 1079-1087.

60. Neesanan N, Kasemsup R, Ratanachuaeq S, Kojaranjit P, SakulnoomK, Padunqtod C. (2011) Preliminary study on assessment of lead exposure in Thai children aged between 3-7 years old who live in Umphang district, Tak Province. Journal of the Thai Medical Association. 94:S113-S120.

61. Kayaalti A, Kaya-Akyuslu D, Soylemez E, Soylemezoglu T. (2015) Maternal hemochromatosis gene H63D single-nucleotide polymorphism and lead levels in placental tissue, maternal and umbilical cord blood. 140:456-461.

62. Sanders A, Miller S, Nguyen V, Kotch J, Fry R. (2014) Toxic metals in children residing in a smelting craft village in Vietnam: A pilot study. BioMed Central Public Health 14:114.

63. Daniell W, Tung V, Wallace R, Havens D, Karr C, Diep B, Croteau G, Beaudet N, Duy Bao N. (2015) Childhood lead exposure from battery recycling in Vietnam. Biomedical Research International. Article ID 193715.

Australia

64. Gulson B, Mizon K, Taylor A, Korsch M, sTauber J, Davis JM, Louie H, Wu M, Swan H. (2006) Changes in manganese and lead in the environment and young children associated with the introduction of methylcyclopentadienyl manganese tricarbonyl in gasoline-preliminary results. Environmental Research 100:100-114.

65. Lyle D, Phillips A, Balding W, Burke H, Stokes D, Corbett D, Hall J. Dealing with lead in Broken Hill-Trends in blood lead levels in young children 1991-2003. (2006) Science of the Total Environment. 359:111-119.

Europe

66. Fierens T, Van Holderbeke M, Standaert A, Cornelis C, brochot C, Ciffroy P, Johansson E, Bierkens J. (2016) Multimedia and PBPK modelling with MERLIN-Expo versus biomonitoring for assessing PB exposure of pre-school children in a residential setting. Science of the Total Environment. 568:785-793.

67. Louekari K, Mroueh U, Maidell-Munster L, Balkonen S, Tuomi T, K Savolainen. (2004) Reducing the risks of children living near the site of a former lead smeltery. Science of the Total Environment. 319:65-75.

68. Wilhelm M, Eberwein G, Holzer J, Gladtke D, Angerer J, Marczynski B, Behrendt H, Ring J, Sugiri D, Ranft U. (2007) Influence of industrial sources on children's health—Hot spot studies in North Rhine Wetphalia Germany. International Journal of Hygenie and Enviornmental Health. 210:591-599.

69. Schulz C, Conrad A, Becker K, Kolossa-Gehring M, Seiwert M, Seifert B. (2007) Twenty years of the German environmental survey: Human biomonitoring—Temporal and spatial (West German/East Germany) differences in population exposure. International Journal of Hygenie and Enviornmental Health. 2010. 271-297.

70. Kapitsinou A, Soldatou A, Tsitsika A, Kossiva L, Tsentidis Ch, Nisianakis P, Theocharis S, Garoufi A. (2015) Risk factors for elevated blood lead levels among children aged 6–36 months living in Greece. Child: care, health and development. 1199-1206.

71. Sanna S, De Micco A, Vallascas E. (2011) Evaluation of Association between Biomarkers of Lead Exposure in Sardinian Children (Italy). Biological Trace Element Research. 143:1383–1392.

72. Chelchowska M, Ambroszkiewicz J, Jablonka-Salach K, Gajewska J, Maciejewski T, Bulska E, Laskowska-Klita T, Leibschang J. (2013) Tobacco Smoke Exposure During Pregnancy Increases Maternal Blood Lead Levels Affecting Neonate Birth Weight. Biological Trace Element Research. 155:169–175.

73. Polańska K, Hanke W, Sobala W, Trzcinka-Ochocka M, Ligocka D, Strugała-Stawik H, Magnus P. (2014) Predictors of environmental lead exposure among pregnant women – a prospective cohort study in Poland. Annals of Agricultural and Environmental Medicine 21:49–54.

74. Kapka L, Baumgartner A, Swin ´ska E, Knudsen L, Anderson D, Mielzynka D. (2007) Environmental lead exposure increases micronuclei in children. Mutagenesis 22:201–207.

75. Bas P, Luzardo O, Pena-Quitana L, Gonzalez J, Pena J, Gracia J, Zumbado M, Boada L. (2012) Determinants of blood lead levels in children: A cross-sectional study in the Canary Islands (Spain). 215: 383-388.

76. Gerhardsson L, Lundh T. (2010) Metal Concentrations in Blood and Hair in Pregnant Females in Southern Sweden. Journal of Environmental Health. 72:37-41.

North and Central America

77. Charalambous A, Demoliou K, Mendez M, Coye R, Solorzano G, Papanastasiou E. (2009) Screening for lead exposure in children in Belize. Rev Panama Salud Publica. 25:47–50.

78. Levallois P, St-Laurent J, Gauvin D, Courteau M, Pre´vost M, Campagna C, Lemieux F, Nour S, D'Amour M, Rasmussen P. (2014) The impact of drinking water, indoor dust and paint on blood lead levels of children aged 1–5 years in Montre´al (Que´bec, Canada). Journal of Exposure Science and Environmental Epidemiology 24:185–191.

79. Ngueta G. (2016) Assessing the Influence of Age and Ethnicity on the Association Between Iron Status and Lead Concentration in Blood: Results from the Canadian Health Measures Survey (2007–2011) Biological Trace Element rEsearch. 171:301–307.

80. Farías P, Álamo-Hernández U, Mancilla-Sánchez L, Texcalac-Sangrador J, Carrizales-Yáñez L, Riojas-Rodríguez H. 2014. Lead in School Children from Morelos, Mexico: Levels, Sources and Feasible Interventions. International Journal of Environmental Research and Public Health. 11:12668-12682.

81. Garcia-Vargas G, Rothenberg S, Silbergeld E, Weaver V, Zamoiski R, Resnick C, Rubio-Andrade M, Parsons P, Steuerwald A, Navas-Acién A, Guallar E. 2014. Spatial clustering of toxic trace elements in adolescents around the Torreón, Mexico lead–zinc smelter. Journal of Exposure Science and Environmental Epidemiology. 24:634–642.

82. Meza-Montenegro M, Valenzuela-Quintanar A, BAlderas-Cortes J, Yanez-Estrada L, Gutierrez-Coronado M, Cuevas-Robles A, Gandolphi A. 2013. Exposure assessment of organochlorine pesticides, arsenic and lead in children from the major agricultural areas in Sonora, Mexico. Archives of Environmental Contamination and Toxicology. 64:519–527.

83. Ochoa-Martinez A, Orta-Garcia S, Rico-Escobar E, Carrizales-Yan ˜ez L, Martin Del Campo J, Pruneda-Alvarez G, Ruiz-Vera T, Gonzalez-Palomo A, Pin ˜a-Lopez I, Torres-Dosal A, Pe ´rez-Maldonado I. 2016. Exposure Assessment to Environmental Chemicals in Children from Ciudad Juarez, Chihuahua, Mexico. Archives of Environmental Contamination and Toxicology. 70:657–670.

84. Tamayo y Ortiz M, Tellez-Rojo M, Hu H, Hernandez-Avila M, Wright R, Amarasiriwardena C, Lupoli N, Mercado-Garcia A, Pantic I, Lamadrid-Figueroa H. 2016. Lead in candy consumed and blood lead levels of children living in Mexico City. 147:497-502.

85. Pelallo-Martı ´nez N, Batres-Esquivel L, Carrizales-Ya ´n ˜ez L, Martı ´nez Dı ´az-Barriga F. 2014. Genotoxic and Hematological Effects in Children Exposed to a Chemical Mixture in a Petrochemical Area in Mexico. Archives of Environmental Contamination and Toxicology. 67:1–8.

86. Perez-Maldonado I, Ochoa-Martinex A, Orta-Garcia S, Ruiz-Vera T, Varela-Silva, J. 2017. Concentrations of Environmental Chemicals in urine and blood samples of children from san Luis Potos'i, Mexico. Bulletin of Environmental Contamination and Toxicology, 99:258-263.

87. Soto-Jimenez M, Flegal A. 2011. Childhood lead poisoning from the smelter in Torreon, Mexico. Enviormental Research 111:590-596.

88. Raymond J and Brown MJ. Childhood Blood Lead Levels—United States 2007-2012. MMWR October 23, 2015 / 62(54);76-80.

89. Wheeler W and Brown MJ. Blood lead levels in children aged 1-5 years— United States, 1999-2010. 2013 MMWR April 5, 2013 / 62(13):245-248.

90. Tsoi M, Cheung Cm Cheung T, Cheung B. (2016) Continual decrease in blood lead levels in Americans: United States national health and nutrition examination survey 1999-2014. American Journal of Medicine. 129:1213-1218.

91. Kennedy C, Yard E, Dignam T, Buchanan S, Condon S, Brown MJ, Raymond J, Schurz Rogers H, Sarisky J, de Castro R, Arias I and Breysse P. (2016) Blood lead levels among children aged <6 years—Flint Michigan 2013-2016. MMWR June 24, 2016 / Early Release 65.

92. Dignam T, Rivera García B, De León M, Curtis G, Creanga A, Azofeifa A, O'Neill M, Blanton C, Kennedy C, Rullán M, Caldwell K, Rullán J, Brown MJ. (2016) Prevalence of blood lead levels and environmental risk factors among children aged < 6 years living in Puerto Rico, 2010. Journal of Public Health Practice and Management. 22:1-14.

93. Ritchey MD, Sucosky MS, Jefferies T, McCormick D, Hesting A, Blanton C, Duwve J, Bruner R, Daley R, Jarrett J and Brown MJ. (2011) Lead Poisoning Among Burmese Refugee Children—Indiana, 2009. Clinical Pediatrics 50: 648-656.

94. Hore P, Ahmed M, Sedlar S, Saper R, Nagin D, Clark N. (2016). Blood Lead Levels and Potential Risk Factors for Lead Exposures Among South Asians in New York City. Journal of Immigrant Minority Health. DOI 10.1007/s10903-016-0403-5.

95. Brown MJ, Raymond J, Homa D, Kennedy C, and Sinks T. (2011) Association between Children's Blood Lead Levels, Lead Service Lines, and Water Disinfection, Washington, DC, 1998–2006. Environmental Research. 111:67-74.

South America

96. Martınez S, Simonella L, Hansen C, Rivolta S, Cancela L, Virgolini M. (2013) Blood lead levels and enzymatic biomarkers of environmental lead exposure in children in Cordoba, Argentina, after the ban of leaded gasoline. Human and Experimental Toxicology 32:449–463.

97. Martins E, Varea A, Apezteguia M, Gonzalez H, Girardelli A, Caro L, Lobisuto M, Delgado G, Disalvo L. (2014) Prenatal lead exposure and relationship with maternal exposure determinants in a public maternity hospital of La Plata Argentina. Science of the Total Environment. 473-473:43-47.

98. Martins E, Varea A, Hernández K, Sala M, Girardelli A, Fasano V, Disalvo L. (2016). Archivos Argentinos de Pediatria. 114:543-548.

99. Ruiz-Castelle M, Paco P, Barbieri F, Duprey J, Forns J, Casrsin A, Freydier R, Casiot C, Sunyer J, Gardon J. (2012) Child neurodevelopment in a Bolivian mining city. Enviromental Research 112:147-154.

100. Moura M, Valente J. (2002). Blood lead levels during pregnancy in women living in Rio de Janeiro, Brazil. The Science of the Total Environment 299:123–129.

101. Menezes-Filho·Gustavo J, de Sousa Viana F, Paes C. (2012) Determinants of lead exposure in children on the outskirts of Salvador, Brazil. Environmental Monitoring and Assessment. 184:2593–2603.

102. Paoliella M, De Capitani E, da Cunha F, Matsuo T, Caravalho M, Sakume Al Fgueiredo B. (2002) Exposure of children to lead and cadmium from a mining area of Brazil. Environmental Research Section A 88:120-128.

103. FerronI M, de LimaII A, SaldivaIII P, Gouveia N. (2012). Environmental lead poisoning among children in Porto Alegre state, Southern Brazil. Revista de Saúde Pública. 46:226-33.

104. Kira Cm Skuma A, De Capitani E, Freitas Cl Cardoso M, Gouveia N. (2016) Associated factors for higher lead and cadmium blood levels, and reference values derived from general population of Sao Paulo, Brazil.

105. Lisboa L, Klarián J, Campos R, Iglesias V. (2016) Proximity of residence to an old mineral storage site in Chile and blood lead levels in children. Cad. Saúde Pública, Rio de Janeiro 32:e00023515.

106. Perez-Bravo F, Ruz M, Moran-Jimenez MJ, Olivares M, Rebolledo A, CodoceoAJ, Sepulveda V, JenkinA, Santos JL, Fontanellas A. (2004) Association Between Aminolevulinate Dehydrase Genotypes and Blood Lead Levels in Children from a Lead-Contaminated Area in Antofagasta, Chile. Archives of Environmental Contamination and Toxicology. 47:276-280.

107. Filigrana P, Méndez F. (2012) Blood Lead Levels in Schoolchildren Living Near an Industrial Zone in Cali, Colombia: The Role of Socioeconomic Condition. Biological Trace Element Research. 149:299–306.

108. Olivero-Verbel J, Duarte D, Echenique M, Guette J, Johnson-Restrepo B, Parsons P. (2007) Blood lead levels in children aged 5-9 years living in Cartagena, Colombia. Science of the Total Environment 372:707–716.

109. Anticona C, Bergdahl I, Lundh t, Alegre Y, San Sebastian M. (2011) Lead exosure in indigenous communities of the Amazon basin, Peru. International Journal of Hygiene and Environmental Health 215:59-63.

110. Kordas K, Queirolo E, Ettinger A, Wright R, Stoltzfuse R. (2011) Prevalence and predictors of exposure to multiple metals in preschool children from Montevideo, Uruguay. 408:4488–4494.

From: 'Jean Balent'
Sent: Wed, 2 May 2018 21:15:16 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: May 14, 2018 Internet Seminar Registration Confirmation for Henry Falk
Attachments: 653217811.ics, Connect-Guide-for-Participants.pdf

Registration Summary for
Henry Falk

Registration ID:	653217811
Seminar Title:	New Approaches and Alternatives for Toxicity Testing: Session I - Toxicity Testing Strategies and Model Systems
Date:	May 14, 2018
Time:	1:00 PM - 3:00 PM, Eastern Daylight Time (17:00 PM - 19:00 PM Greenwich Mean Time)
Seminar Web Site:	http://www.clu-in.org/conf/tio/NewApproachesTesting1/

Check In & Go to Seminar | **Cancel Registration** | **CLU-IN Studio** | **Download Presentation**

Thank you for registering for the May 14, 2018 Internet seminar titled *New Approaches and Alternatives for Toxicity Testing: Session I - Toxicity Testing Strategies and Model Systems*. This note confirms your registration.

Do you need to cancel? Click here. If you cannot attend please be considerate of wait-listed registrants by cancelling your registration.

Before Seminar Day: This seminar will be delivered through Adobe® Connect™ with streaming audio delivered through your computer speakers or headphones. We strongly encourage you to test your computer or mobile app prior to attending this seminar using the links below. Technical support on the day of the seminar will be very limited and subject to significant delays.

Adobe® Connect™ Meeting Connection Diagnostic & Troubleshooting Tips

Adobe® Connect™ Mobile Apps

The Adobe® Connect™ Visual Quick Start Guide is also attached if you are not familiar with Adobe® Connect™.

Seminar Day, checking in: Go to: http://www.clu-in.org/conf/tio/NewApproachesTesting1/ then click on "GO TO SEMINAR," enter your exact first and last name as you registered and enter the number of people attending at your location

(including yourself). You should then be taken to the Adobe® Connect™ meeting room.

Moving through slides: The presenters will control what slide you are viewing. You may submit questions online for the instructors to answer during the seminar by typing in the "Q & A" area. It is not necessary to wait until the question and answer periods to submit questions.

Feedback & Links to Additional Resources: At the end of the seminar you will be guided to our feedback form and links to additional resources, including the complete PowerPoint presentation. These links will remain active after the seminar.

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It is EPA's policy to make reasonable accommodation to persons with disabilities wishing to participate in the agency's programs and activities, pursuant to the Rehabilitation Act of 1973, 29 U.S.C. 791. Any request for accommodation should be made to Sara Amolegbeat 919-213-4906 or samolegbe@michaeldbaker.com, preferably one week or more in advance of the seminar, so that EPA will have sufficient time to process the request. EPA would welcome specific recommendations from requestors specifying the nature or type of accommodation needed, such as closed captioning.

If you have questions regarding the content of this Internet seminar, please contact Sara Amolegbeat 919-213-4906. Technical questions can be directed to the CLU-IN webmaster by visiting our comments page.

Jean Balent
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ADOBE® CONNECT™
VISUAL QUICK START GUIDE

Partcipate in Adobe Connect Meetings

Adobe Connect is an enterprise web conferencing solution for online meetings, eLearning and webinars used by leading corporations and government agencies. This Visual Quick Start Guide provides you with the basics participating in an Adobe Connect meeting, virtual classroom, or webinar.

Attend an Adobe Connect meeting

1. It is recommended that you test your computer prior to attending a meeting. You can do this by going to http://admin.adobeconnect.com/common/help/en/support/meeting_test.htm

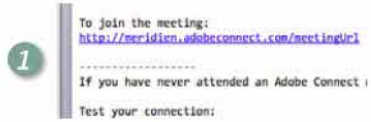
2. The **Connection Test** checks your computer to make sure all system requirements are met. If you pass the first three steps of the test, then you are ready to participate in a meeting.

> **Tip:** The fourth step of the **Connection Test** is for the Adobe Connect Add-in which is only required for Meetings Hosts and Presenters who need to share their screen. Installing the add-in is not required, but may enhance your meeting experience.

3. If you do not pass the test, perform the suggested actions and run the test again.

Join a meeting

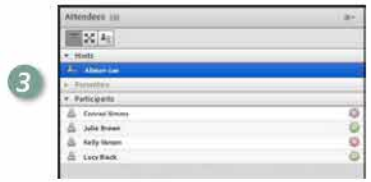
1. You have likely received an email invitation with meeting access information. When the meeting time arrives, click on the link or enter the URL into your favorite web browser.



2. The meeting login screen appears. If you do not have a username or password for the Adobe Connect account, choose ***Enter as a Guest***, type in your first and last name, and click ***Enter Room.***

3. The meeting launches in your browser. If the meeting host has not yet arrived to the meeting or meeting security requires the host to approve your attendance, you will be placed in a waiting room.

4. Once the meeting host accepts you into the meeting, the meeting room interface appears.



> **Tip:** Adobe Connect only requires that you have an internet connection, a web browser, and Adobe Flash Player version 10.1 or greater to attend a web conference. Adobe Connect supports nearly any operating system including Windows, Macintosh, Linux and Solaris, as well as the most widely used browsers including Internet Explorer, Firefox, Safari, and Chrome.

Meeting audio

Meeting hosts have control over how the audio portion of your meeting is conducted. They can choose to use Voice-over-IP (VoIP), Integrated Telephony, or Universal Voice (a non-integrated teleconference).

Option 1: Voice-over-IP

When this option is selected, you can hear meeting audio through your computer speakers. If a meeting attendee is speaking using VoIP, you will see a microphone icon next to their name.

In some cases, meeting hosts may give you the ability to broadcast audio using VoIP. When this is the case, a dialog will alert you that you have the rights to use your microphone. Clicking the ***Speak Now*** link will activate the microphone icon in the **Application Bar** at the top of your screen.

> **Tip:** If you are having issues using VoIP, it is recommended that you run through the Audio Setup Wizard to optimize your experience. To do this, select '***Audio Setup Wizard...***' from the **Meeting** menu.

Option 2: Integrated Telephony

If the meeting host has set up the room to use an integrated teleconference, then Adobe Connect will prompt participants to select how they would like to hear the audio. You can select to listen through your computer speakers if the host has enabled this, you can view the dial-in information, or you can have Adobe Connect dial-out to your telephone by entering your phone number and clicking ***Connect.***

This dialog can also be launched by clicking the telephone icon in the **Application Bar.**

Option 3: Universal Voice

Adobe Connect can also bridge non-integrated audio conferences into a meeting room so that the meeting can be recorded and the audio can be broadcast through the computer speakers of the participants. If the meeting host has selected a non-integrated teleconference (Universal Voice), you can listen to the audio through your computer speakers. If you'd prefer to listen over the phone, you can click the telephone icon in the **Application Bar** to see the dial-in information.

If the meeting host gives you the rights to speak, you can use your computer's microphone or your telephone handset to speak to the other meeting attendees.

ADOBE® CONNECT™
VISUAL QUICK START GUIDE

Share webcam video

The meeting host may ask you to use your webcam to share video. When this is the case, a button enabling you to share your webcam will appear on the video pod. To share your camera, make sure your web cam is plugged in and click the ***Share My Webcam*** button. Adobe Flash may prompt you for permission. After granting permission, a webcam video preview appears. If you're happy with the preview, click ***Start Sharing*** to share your video with all participants.

You can also click the webcam icon in the **Application Bar** to access your webcam and preferences.

Change your status

Within a meeting, you can also change your status to provide feedback to the presenter and other attendees.

To change your status, click the arrow on the ***Status Options*** dropdown list on the **Application Bar** and select your desired status option.

If you select an option above the line such as ***Agree*** or ***Step Away***, you status remains until you choose ***Clear Status***. If you choose an option below the line such as ***Speed Up*** or ***Applause***, your status automatically clears itself after a number of seconds.

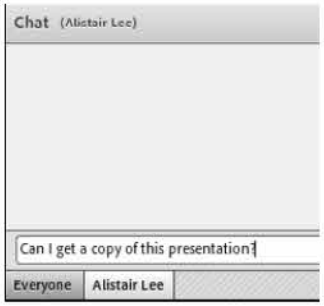
When you set your status, an icon appears next to your name in the **Attendees** pod.

Chat

To send a message to everyone, simply type your message in the chat pod and hit enter or click the send icon.

If the meeting host has enabled private chat, you can send messages to a specific attendee or group within the meeting. To do this, use the **Attendees** pod to hover over the name of the attendee you'd like to chat with, and select ***Start Private Chat***. Alternatively, you can use the Pod Options menu in the top right hand corner of the pod to select an individual or group by clicking ***Start Chat With***. Private chat messages show up in additional tabs to make it easy to distinguish between private and public chat.

If the host is using a **Q&A** pod instead of a **Chat** pod, then all messages are moderated and private chat is not available.



Troubleshooting

Issue	Solution
I cannot get into the meeting	If you are having trouble joining a meeting try the following: 1. Enter the meeting as a Guest user by entering in your First and Last Name in the Guest field. 2. Click the Help link on the Meeting Login page. This takes you to the Test Meeting Connection page where you can verify that your computer meets all necessary requirements. If you do not pass the test you will be given instructions for what you need to do. 3. Make sure popup blocking software is not blocking your meeting window. 4. You may be using a proxy server. To resolve this in Internet Explorer, select Tools > Internet Options > Advanced tab. Then enable the setting Use HTTP 1.1 through proxy connections. After doing this, clear your cookies, close all browser windows and attempt to re-enter the meeting.
I cannot hear any audio	1. Verify that your computer speakers are on and your computer's volume is at an audible level. 2. Check to see if the meeting host has provided teleconference information. If this is the case, you need to dial in via telephone to hear meeting audio.
I have been granted rights to speak, but no one can hear me	If you are having trouble sharing your voice try the following tasks: 1. Make sure your computer microphone is not muted. 2. Run through the Audio Setup Wizard. To do this, select ***Meeting > Audio Setup Wizard***. The wizard guides you through five steps in which your computer is tuned for optimal VoIP. 3. You may have elected to deny the Flash Player access to your computer's microphone. To verify this, right click in the meeting window and choose ***Settings*** to view your Flash Player settings. In the dialog box, choose ***Allow.***
The host is sharing their screen, but it is fuzzy	If you are having trouble seeing a hosts screen, try the following: 1. Click the Full Screen button on the top of the Share pod. 2. View the full resolution by using the pod options menu in the top right hand corner of the pod to select ***Change View > Zoom In.***

Learn More

You can find additional resources by visiting the Adobe Connect User Community at www.connectusers.com

From: EPA Media Relations
Sent: Wed, 24 Aug 2016 12:26:25 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Obama Administration to Help Appalachian Communities Revitalize Downtowns through Broadband Service

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

Contact:
Robert Daguillard
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FOR IMMEDIATE RELEASE:
August 24, 2016

Obama Administration to Help Appalachian Communities Revitalize Downtowns through Broadband Service

WASHINGTON –Today, the U.S. Environmental Protection Agency (EPA), the U.S. Department of Agriculture (USDA) and the Appalachian Regional Commission (ARC) announced the selection of 10 communities in six states that will participate in the Cool & Connected planning assistance program, an innovative initiative to help people use broadband service for downtown revitalization and economic development.

"Cool & Connected will help create vibrant, thriving places to live, work, and play," said EPA Administrator Gina McCarthy. "We're excited to be working with these local leaders and use broadband service as a creative strategy to improve the environment and public health in Appalachian communities."

Through Cool & Connected, partner communities will receive direct technical assistance from a team of experts to develop strategies and an action plan for using expected or existing broadband service to create connected, economically vibrant main streets and small-town neighborhoods. By combining broadband service with other local assets, such as cultural and recreational amenities, communities can attract and retain investment and people, revitalize downtowns and diversify local economies. Cool & Connected also protects the environment by encouraging the reuse of existing infrastructure and by improving walkability. For example, strategies that help communities reinvest in established areas can help preserve open spaces and farmlands and protect air and water quality.

EPA support for Cool & Connected is provided through the Office of Sustainable Communities, which helps communities develop in ways that protect public health and the natural environment by creating walkable, livable, economically vibrant communities, and supporting reinvestment in existing neighborhoods.

USDA support is provided by the Rural Utilities Service, which provides funding for critical infrastructure

including electricity generation and transmission, water and waste water facilities and telecommunications for rural America.

The Appalachian Regional Commission support is through the Obama Administration's Partnership for Opportunity and Workforce and Economic Revitalization initiative (POWER), a multi-agency effort to invest federal resources in communities and regions that have relied on the coal industry and are impacted by the changing energy landscape.

Cool & Connected Partner Communities:

- Haleyville, Ala: To pursue a downtown broadband strategy that promotes business recruitment and development, diversifies the economy, and connects the library and City Hall to people through digital archives and e-government initiatives.

- Portsmouth, Ohio: To help the Southern Ohio Port Authority use their historic and commercial districts' broadband and public Wi-Fi capabilities to increase the number of people who walk and open businesses. The plan will also connect downtown amenities to recreation areas by using information kiosks and QR Code/smart phone technology.

- Zanesville, Ohio: To increase new employment opportunities, support an emerging arts scene, and develop an app for visitors to explore their walkable downtown.

- Clarion, Penn.: To increase their local communications capacity to market nature-based tourism, motivate people to invest along the historic Main Street, and create an incentive for students at Clarion University to stay in the community.

- Curwensville, Penn.: To support the Curwensville Regional Development Corporation in creating a downtown co-working space for professionals, students, or entrepreneurs to use as an alternative to working from home or commuting long distances.

- Erwin, Tenn.: To help the city and Erwin Utilities develop a comprehensive marketing plan for their downtown broadband connection, with the goal of attracting young professionals, visitors, and investors.

- Jonesville and Pennington Gap, Va.: To market and develop Wi-Fi zones, extend broadband service, and promote main street development by attracting potential anchor tenants.

- Bluefield, W. Va.: To develop a plan for their downtown area to take advantage of the available broadband and market their businesses through the best outlets.

- Weirton, W. Va: To help the Mary H. Weir Public Library and community partners develop a plan to increase and expand broadband services and Wi-Fi zones, in order to bring visitors, new families, and businesses to the downtown area.

- Williamson, W. Va.: To support the Williamson Health and Wellness Center in leveraging broadband access and Wi-Fi zones downtown and at educational institutions to cultivate a skilled workforce, help people open businesses, and enhance the use of heath care technology.

For more information on Cool & Connected: https://www.epa.gov/smartgrowth/cool-connected

For information on EPA's Office of Sustainable Communities: https://www.epa.gov/smartgrowth

For more information on the Appalachian Resources Commission: http://www.arc.gov

For information on USDA Rural Utilities Service: http://www.rd.usda.gov/about-rd/agencies/rural-utilities-

service

For more information on the POWER initiative: https://www.eda.gov/power/files/2016/funds-announcement.pdf

R131

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: Mccann, Ellie
Sent: Thu, 19 Jan 2017 21:35:00 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Bandemehr, Angela
Subject: Oops, sorry

Dear Helen and Henry,

Oops, our apologies! We are so sorry we were not able to follow through with our scheduled call at 3 pm to catch up with you on CDC-related topics! EPA folks are all working from home today because of the inauguration logistics chaos in downtown DC, and Angela got tied up in a conference call that ran past 3 pm. Now Angela cannot get email access, and asked me to send you our apologies. We will reschedule (again!) in a couple of weeks, when Angela returns from a week-long work trip to Mexico next week.

Best wishes to you both.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Bandemehr, Angela
Sent: Fri, 2 Sep 2016 16:07:16 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: PAHO

Henry:
Our meeting with PAHO went well. They are interested in doing an event during the week of action. It may end up being more of a webinar for folks in LAC but it might also include a face to face component. Not clear yet.

Have a great weekend.

Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: U.S. EPA Media Relations
Sent: Fri, 20 May 2016 14:14:50 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RELEASE: Administrator McCarthy Announces $55.2 Million to Assess and Clean Up Contaminated Sites

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

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FOR IMMEDIATE RELEASE
May 20, 2016

Administrator McCarthy Announces $55.2 Million to Assess and Clean Up Contaminated Sites, Promote Economic Redevelopment Nationwide

Brownfields grants to transform and uplift communities, leverage jobs

WASHINGTON – At an event at a former brownfield site in Burlington, Vermont, U.S. Environmental Protection Agency (EPA) Administrator Gina McCarthy announced today the selection of 218 new grant investments totaling $55.2 million to 131 communities across the U.S. Recipients will receive approximately $200,000 - $820,000 in funding toward EPA cooperative agreements. The Assessment, Revolving Loan Fund and Cleanup (ARC) grants go to communities that are underserved and economically disadvantaged, including neighborhoods where environmental cleanup and new jobs are most needed.

"These grants will empower communities to transform idle, languishing lands into vibrant hubs for business, jobs, and recreation," said EPA Administrator Gina McCarthy. "It's all about providing that initial funding, and sparking that first conversation to set stalled sites on a path toward smart, safe redevelopment that directly benefits communities."

Today's event highlighted progress made in cleaning up and redeveloping a formerly contaminated site in Burlington, the Maiden Lane project. Public and private investment in the site, including by ARC grant recipient Chittenden County Regional Planning Commission (CCRPC), led to the development of 28 housing units, including four affordable housing units. The CCRPC invested $38,000 in assessment funding from a previous assessment grant at the site, which leveraged private investment of more than $5

million.

EPA's Brownfields Program strives to expand the ability of communities to recycle vacant and abandoned properties for new, productive reuses. The investments will provide communities with the funding necessary to assess, clean up and redevelop contaminated properties, boost local economies and leverage jobs while protecting public health and the environment. Brownfields ARC grants provide resources early on, which is critical for the success of communities' abilities to leverage additional partnerships and resources. Partnerships between neighborhoods, local developers and governments are essential for impacted communities to acquire the resources needed to meet their revitalization goals.

Approximately $14 million of the assessment and cleanup funding will go to applicants who are also EPA Brownfields Area-Wide Planning grant recipients and Dept. of Housing and Urban Development (HUD)/Dept. of Transportation (DOT)/EPA partnership communities. Funding will help communities clean up and reuse brownfield sites to create community assets such as housing, recreation and open space, health facilities, employment, education, social services, transportation options, infrastructure and commerce opportunities. For example, Dubuque, Iowa's new $200,000 cleanup grant will address contamination at the Blum property, a former scrap yard and recycling facility, and will lead to the development of a pocket park for residents of the distressed Washington Neighborhood within Dubuque. In addition to the benefits gained by creating more community spaces, this funding will also build upon Dubuque's 2010 DOT TIGER grant and 2015 EPA Brownfields Area-Wide Planning grant which support the revitalization of the Washington Neighborhood.

Studies have shown that residential property values near brownfields sites that are cleaned up increased between 5 and 15 percent. Data also shows that brownfields clean ups can increase overall property values within a one-mile radius. Preliminary analysis of 48 brownfields sites shows that an estimated $29 million to $97 million in additional tax revenue was generated for local governments in a single year after cleanup. This is two to seven times more than the $12.4 million the EPA contributed to the cleanup of these brownfields.

This latest funding advances EPA's broader commitment to making a visible difference in communities by focusing on coordinating federal investments to help environmentally overburdened, underserved, and economically distressed communities address local priorities. The Brownfields Program invests in communities where there are multiple federal agency partnerships at work. Aligning federal resources allows agencies to better meet communities' needs and for communities to more effectively reap the benefits of collaborative investments. ARC grantees demonstrate a high level of preparedness to undertake specific projects, as they have firm commitments of leveraged funds to move projects forward. An impressive 70 percent of recipients have secured public and private resources which will directly align and further the efforts of proposed projects.

There are an estimated 450,000 abandoned and contaminated waste sites in America. Since the inception of the EPA's Brownfields Program in 1995, cumulative brownfields program investments have leveraged more than $20 billion from a variety of public and private sources for cleanup and redevelopment activities. This equates to an average of $17.79 leveraged per EPA brownfields dollar expended. These investments have resulted in approximately 108,924 jobs nationwide. EPA's Brownfields Program empowers states, communities and other stakeholders to work together to prevent, assess, safely clean up, and sustainably reuse brownfields sites.

List of the FY 2016 Applicants Selected for Funding: https://www.epa.gov/brownfields/brownfields-fy16-arc-grants-selected-funding

More on ARC grants: https://www.epa.gov/brownfields/types-brownfields-grant-funding

More on EPA's Brownfields Program: https://www.epa.gov/brownfields

More on successful Brownfields stories: https://www.epa.gov/brownfields/brownfields-success-stories

R093

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: U.S. EPA Media Relations
Sent: Thu, 3 Nov 2016 13:18:36 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RELEASE: EPA Enforcement Actions Help Protect Vulnerable Communities from Lead-Based Paint Hazards

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
Tricia Lynn
lynn.tricia@epa.gov
(202) 564-2615
(202) 564-4355

FOR IMMEDIATE RELEASE
November 3, 2016

EPA Enforcement Actions Help Protect Vulnerable Communities from Lead-Based Paint Health Hazards

WASHINGTON – The U.S. Environmental Protection Agency (EPA) today announced over 100 federal enforcement actions completed over the last year that require entities like renovation contractors, landlords and property managers to protect communities and public health from exposure to lead. Lead paint is the main way people are exposed to lead in the United States, and lead exposure can cause a range of health problems, from behavioral disorders and learning disabilities to seizures and death, putting young children and their developing nervous systems at the greatest risk.

"Renovation companies and their contractors must protect children and other vulnerable people from lead-based paint exposure, especially in minority and low-income communities where housing with lead-based paint is more common," said Cynthia Giles, assistant administrator for EPA's Office of Enforcement and Compliance Assurance. "These enforcement actions show that EPA will hold companies accountable when they put public health at risk, and they promote a level playing field for businesses that follow the rules."

From October 2015 through September 2016, EPA entered into 123 settlements for alleged violations of one or more of the three lead-based paint rules--the Renovation, Repair and Painting (RRP) Rule; the Lead Disclosure Rule; and the Lead-based Paint Activities Rule for abatements--and filed six complaints for ongoing actions. Each settlement requires that the alleged violator return to compliance and, in most cases, pay civil penalties. Collectively, the settlements require violators to pay $1,046,655 in penalties.

The three rules are part of the federal Toxic Substances Control Act and the Residential Lead-Based Paint Hazard Reduction Act and apply to housing built before 1978 and child-occupied facilities. Ensuring compliance with all three rules enables EPA to identify and address a variety of lead exposure risks that occur in communities across the nation. These risks can occur when lead paint deteriorates or is disrupted during home renovation and remodeling activities. A blood lead test is the only way to

determine if a child has a high lead level. Parents who think their child has been in contact with lead dust should contact their child's health care provider.

In September 2016, EPA and the U.S. Department of Justice announced a settlement with Sears Home Improvement Products Inc. that resolves alleged violations of the Lead RRP Rule for work performed by Sears' contractors during home renovation projects across the country. Under the settlement, Sears will implement a comprehensive, corporate-wide program to ensure that the contractors it hires to perform work minimize lead dust from home renovation activities and pay a $400,000 civil penalty.

In three of the settlements, entities agreed to fund voluntary environmental projects collectively valued at up to $409,429 to address lead risks and poisoning. Every project requires lead-based paint abatement, including post-construction clearance testing to ensure that no hazards remain. The complaints propose penalties of up to $197,743 for alleged violations of the RRP Rule and/or Lead Disclosure Rule.

Renovation, Repair and Painting (RRP) Rule Enforcement Action

Of the total settlements reported during fiscal year 2016, 116 cited alleged RRP Rule violations involving repair, renovation or painting projects where lead-based paint is disturbed. Approximately 63 percent of this year's cases alleged failure to obtain EPA certification and almost half cited non-compliance with requirements to ensure lead-safe work practices.

The following are highlights from settlements involving significant penalties and/or supplemental environmental projects:

- Hammer and Hand, Inc., located in Oregon, paid a $69,398 penalty for alleged RRP Rule work practice and recordkeeping violations.
- Clearview Home Improvements, located in California, paid a $58,450 fine for alleged noncompliance with RRP Rule requirements for certification, pre-renovation education, firm responsibility, and recordkeeping.
- Zidan Management Group, Inc., located in Indiana, agreed to perform an abatement project valued at up to $41,500 and paid a $3,675 fine to settle alleged violation of RRP Rule work practice and certification requirements.

The RRP Rule requires that individuals performing renovations are properly trained and certified, give owners and occupants EPA's Renovate Right lead hazard information pamphlet before beginning work and follow specific lead-safe work practices during renovations.

Lead Disclosure Rule Enforcement Actions

Five of the settlements reported in fiscal year 2016 alleged Lead Disclosure Rule violations. This rule continues to be an important tool for reducing lead exposures and increasing awareness of lead risks. The rule generally requires lessors and sellers to disclose to prospective tenants and purchasers specific information about lead-based paint and lead-based paint hazards.

In one case, a landlord in Illinois, committed to perform a $308,000 lead abatement project and pay a $5,000 cash penalty to settle alleged Lead Disclosure Rule infractions. This case was a joint enforcement action by EPA and the U.S. Department of Housing and Urban Development, prosecuted by the U.S. Department of Justice.

In another case, Carrington Real Estate Services, LLC and Carrington Mortgage Services, LLC, both in California, agreed to spend at least $59,929 to donate blood-lead test equipment to non-profit community health clinics, and pay a $19,976 penalty to settle alleged Lead Disclosure Rule infractions.

Lead-based Paint Activities Rule - Abatement Enforcement Actions

The Lead-based Paint Activities Rule requires that abatement contractors be trained and certified, and

follow abatement-specific lead-safe work practices. EPA-authorized states typically implement and enforce the abatement requirements of this rule. However, during fiscal year 2016, EPA took action in two cases. In one case, Lead Me Out Environmental Services, Inc. of New York paid a civil penalty of $20,000 for alleged abatement violations.

More information about all of EPA's actions to enforce lead-based paint regulations during fiscal year 2016 is available at https://www.epa.gov/enforcement/fy2016-enforcement-actions-lead-renovation-repair-and-painting-rule-rrp.

More information about the lead-based paint regulations and hiring a certified renovation company is available at www.epa.gov/lead or by calling the National Lead Information Center at 1 (800) 424-LEAD.

R174

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: U.S. EPA Media Relations
Sent: Thu, 18 Aug 2016 11:28:31 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RELEASE: Harley-Davidson to Stop Sales of Illegal Devices that Increased Air Pollution

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
Julia P. Valentine (**News media only**)
valentine.julia@epa.gov
(202) 564-2663
(202) 564-4355

FOR IMMEDIATE RELEASE
August 18, 2016

Harley-Davidson to Stop Sales of Illegal Devices that Increased Air Pollution from the Company's Motorcycles

WASHINGTON – The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Justice (DOJ) today announced a settlement with Harley-Davidson, Inc., Harley-Davidson Motor Company Group, LLC, Harley-Davidson Motorcycle Company, Inc., and Harley-Davidson Motor Company Operations, Inc. (collectively Harley-Davidson), that requires the companies to stop selling and to buy back and destroy illegal devices that increase air pollution from their motorcycles, and to sell only models of these devices that are certified to meet Clean Air Act emissions standards. Harley-Davidson will also pay a $12 million civil penalty and spend $3 million to mitigate air pollution through a project to replace conventional woodstoves with cleaner-burning stoves in local communities.

The government's complaint, filed today along with the settlement, alleges that Harley-Davidson manufactured and sold approximately 340,000 illegal devices, known as "super tuners," that, once installed, caused motorcycles to emit higher amounts of certain air pollutants than what the company certified to EPA. Aftermarket defeat devices like these super tuners alter a motor vehicle's emissions controls and are prohibited under the Clean Air Act for use on vehicles that have been certified to meet EPA emissions standards. Harley-Davidson also made and sold more than 12,000 motorcycles that were not covered by an EPA certification that ensures a vehicle meets federal clean air standards.

"This settlement immediately stops the sale of illegal aftermarket defeat devices used on public roads that threaten the air we breathe," said Cynthia Giles, assistant administrator for EPA's Office of Enforcement and Compliance Assurance. "Harley-Davidson is taking important steps to buy back the 'super tuners' from their dealers and destroy them, while funding projects to mitigate the pollution they caused."

"Given Harley-Davidson's prominence in the industry, this is a very significant step toward our goal of stopping the sale of illegal aftermarket defeat devices that cause harmful pollution on our roads and in our communities," said Assistant Attorney General John C. Cruden, head of the Justice Department's

Environment and Natural Resources Division. “Anyone else who manufactures, sells, or installs these types of illegal products should take heed of Harley-Davidson’s corrective actions and immediately stop violating the law.”

Since January 2008, Harley-Davidson has manufactured and sold two types of tuners, which when hooked up to Harley-Davidson motorcycles, allow users to modify certain aspects of a motorcycle’s emissions control system. These modified settings increase power and performance, but also increase the motorcycles’ emissions of hydrocarbons and nitrogen oxides (NOx). These tuners have been sold at Harley-Davidson dealerships across the country.

The Clean Air Act requires motor vehicle manufacturers to certify to EPA that their vehicles will meet applicable federal emissions standards to control air pollution, and every motor vehicle sold in the U.S. must be covered by an EPA-issued certificate of conformity. The Clean Air Act prohibits manufacturers from making and selling devices that bypass, defeat, or render inoperative a motor vehicle’s EPA-certified emissions control system. The Act also prohibits any person from removing or rendering inoperative a motor vehicle’s certified emissions control system and from causing such tampering. The complaint alleges violations of both these provisions.

Under the settlement, Harley-Davidson will stop selling the illegal aftermarket defeat devices in the United States by August 23, 2016. Harley-Davidson will also offer to buy back all such tuners in stock at Harley-Davidson dealerships across the country and destroy them. The settlement requires the company to obtain a certification from the California Air Resources Board (CARB) for any tuners it sells in the United States in the future. The CARB certification will demonstrate that the CARB-certified tuners do not cause Harley-Davidson’s motorcycles to exceed the EPA-certified emissions limits. Harley-Davidson will also conduct tests on motorcycles that have been tuned with the CARB-certified tuners and provide the results to EPA to ensure that its motorcycles remain in compliance with EPA emissions requirements. In addition, for any super tuners that Harley-Davidson sells outside the United States in the future, it must label them as not for use in the United States.

The complaint also alleges that Harley-Davidson made and sold more than 12,000 motorcycles from model years 2006, 2007 and 2008 that were not covered by an EPA certificate of conformity. A certificate of conformity covers only the motorcycle models that were included in the certification application and that are listed on the certificate. These 12,000 motorcycles were models that were not included in Harley-Davidson’s applications and that were not listed as covered by the relevant certificate. Under the consent decree, Harley-Davidson will ensure that all of its future motorcycle models intended for sale in the United States are fully certified by EPA.

Hydrocarbon and NOx emissions contribute to harmful ground-level ozone, and NOx also contributes to fine particulate matter pollution. Exposure to these pollutants has been linked with a range of serious health effects, including increased asthma attacks and other respiratory illnesses. Exposure to ozone and particulate matter has also been associated with premature death due to respiratory-related or cardiovascular-related effects. Children, the elderly, and people with pre-existing respiratory disease are particularly at risk of health effects from exposure to these pollutants. The woodstove project, which Harley-Davidson will undertake in conjunction with an independent third party, will eliminate excess air pollution caused by using the illegal tuners by providing cleaner-burning stoves to designated local communities, thereby assuring better air quality in the future.

EPA discovered the violations through a routine inspection and information Harley-Davidson submitted after subsequent agency information requests.

The settlement, a proposed consent decree lodged in the United Stated District Court for the District of Columbia, is subject to a 30-day public comment period before it can be entered by the court as final judgment. To view the consent decree or to submit a comment, visit DOJ’s website: www.justice.gov/enrd/Consent_Decrees.html

More information about today’s settlement:

https://www.epa.gov/enforcement/harley-davidson-clean-air-act-settlement

R130

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: U.S. EPA Media Relations
Sent: Wed, 28 Sep 2016 15:08:00 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RELEASE: Sears to Improve Public Health Protections from Lead Pollution During Home Renovations

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
Julia P. Valentine (**News media only**)
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FOR IMMEDIATE RELEASE
September 28, 2016

Sears to Improve Public Health Protections from Lead Pollution During Home Renovations

WASHINGTON – The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Justice (DOJ) today announced a settlement with Sears Home Improvement Products Inc. that resolves alleged violations of the federal Lead Renovation, Repair and Painting (RRP) Rule for work performed by Sears' contractors during home renovation projects across the country. Under the settlement, Sears will implement a comprehensive, corporate-wide program to ensure that the contractors it hires to perform work minimize lead dust from home renovation activities. Sears will also pay a $400,000 civil penalty.

"Today's settlement will have a widespread impact across the home improvement industry, significantly reducing exposure to lead paint dust among children and other vulnerable people," said Cynthia Giles, Assistant Administrator for EPA's Office of Enforcement and Compliance Assurance. "In order to contract with Sears, a worker must follow lead safe practices. Contractors will carry this certification to every job they do. EPA expects all renovation companies to ensure their contractors follow these critical laws that protect public health."

"This settlement will help prevent children and workers' exposure to lead during home renovations in communities across the United States by ensuring that Sears' contractors are fully aware of their obligations under lead safety regulations," said Assistant Attorney General John C. Cruden for the Justice Department's Environment and Natural Resources Division. "Sears is required to implement system wide changes across the corporation which will provide additional protection for consumers and bring the company into compliance with the law."

EPA discovered the alleged violations through a review of Sears' records from projects performed by the company's renovation contractors at numerous projects in cities across California and in Georgia, Minnesota, Nevada, New York and Wisconsin.

The government also alleged that Sears failed to establish, retain, or provide compliance documentation showing that specific contractors had been certified by EPA, had been properly trained, had used lead-safe work practices, or had performed required post-renovation cleaning.

Under the settlement, Sears will implement a company-wide program to ensure that the contractors it hires to perform work for its customers comply with the RRP Rule during renovations of any child-occupied facilities, such as day-care centers and pre-schools and any housing that was built before 1978. For these projects, Sears must contract with only EPA-certified and state-certified firms and renovators, ensure they maintain certification and ensure they use lead safe work practices checklists during renovations.

Sears will also add a link on its website to EPA's content on lead-safe work practices and use a company-wide system to actively track the RRP firm and renovator certifications of its contractors. In addition, Sears must suspend any contractor that is not operating in compliance with the RRP Rule, investigate all reports of potential noncompliance and ensure that any violations are corrected and reported to EPA.

EPA reached a similar settlement with home improvement retailer Lowe's Home Centers in 2014 requiring the company to implement a comprehensive, corporate-wide compliance program at its over 1,700 stores nationwide to ensure that the contractors it hires to perform work minimize lead dust from home renovation activities.

The RRP Rule, which is a part of the federal Toxic Substances Control Act, is intended to ensure that owners and occupants of housing built before 1978, as well as any child-occupied facilities, receive information on lead-based paint hazards before renovations begin, and that individuals performing such renovations are properly trained and certified by EPA and follow specific work practices to reduce the potential for lead-based paint exposure. Home improvement companies such as Sears that contract with renovators to perform renovation work for their customers must ensure that those contractors comply with all of the requirements of the RRP Rule.

Lead-based paint was banned in 1978 but still remains in many homes and apartments across the country. Lead dust hazards can occur when lead paint deteriorates or is disrupted during home renovation and remodeling activities. Lead exposure can cause a range of health problems, from behavioral disorders and learning disabilities to seizures and death, putting young children at the greatest risk because their nervous systems are still developing. A blood lead test is the only way to determine if a child has a high lead level. Parents who think their child has been in contact with lead dust should contact their child's health care provider.

Renovation firms that are certified under EPA's RRP Rule are encouraged to display EPA's "Lead-Safe" logo on worker's uniforms, signs, websites and other material, as appropriate. Consumers can protect themselves by looking for the logo before hiring a renovation firm. Consumers can learn more about the RRP Rule and hiring a certified firm by calling the National Lead Information Center at 1 (800) 424-LEAD or visiting www.epa.gov/lead.

Sears Home Improvement Products is part of the Sears Home Services division, within Sears Holdings Corporation. The Home Services division makes over 12 million service and installation calls annually through a network of 6,700 technicians and Sears' 705 retail stores in the United States. Sears Home Improvement Products is headquartered in Longwood, Florida, does business in 45 states, and maintains 58 district offices.

The consent decree was lodged in the U.S. District Court for the Northern District Court of Illinois. Notice of the lodging of the consent decree will appear in the Federal Register allowing for a 30-day public comment period before the consent decree can be entered by the court as final judgment. To view the consent decree:www.justice.gov/enrd/Consent_Decrees.html

More information about today's settlement:
https://www.epa.gov/enforcement/sears-home-improvement-products-inc-lead-rrp-rule-settlement

R145

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: U.S. EPA Media Relations
Sent: Tue, 3 Nov 2015 15:50:27 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RELEASE: U.S. EPA Requires ASARCO to Cut Toxic Emissions at 103-Year-Old Arizona Copper Smelter

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
Julia P. Valentine (**News media only**)
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(202) 564-2663
(202) 564-4355

FOR IMMEDIATE RELEASE
November 3, 2015

U.S. EPA Requires ASARCO to Cut Toxic Emissions at 103-Year-Old Arizona Copper Smelter

WASHINGTON -- Today, the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Justice announced a settlement with ASARCO that requires the company to spend $150 million to install new equipment and pollution control technology to reduce emissions of toxic heavy metals at a large copper smelter in Hayden, Ariz. The company will also fund local environmental projects valued at $8 million, replace a diesel locomotive with a cleaner model for $1 million, and pay a $4.5 million civil penalty.

The federal enforcement action targeted hazardous air pollutants, including lead and arsenic, in particulate matter (PM). With the controls in place, the hazardous air pollutants should be reduced by at least 8.5 tons per year, and PM emissions are expected to be reduced by 3,500 tons per year. The new equipment and controls will slash the facility's sulfur dioxide (SO2) emissions by 19,000 tons per year, a reduction of more than 90%, according to EPA estimates. Currently, the ASARCO smelter is the largest source of SO2 emissions in Arizona.

"Big enforcement actions like this result in big returns for American communities," said Cynthia Giles, assistant administrator for EPA's Office of Enforcement and Compliance Assurance. "The upgraded pollution controls and advanced monitoring technologies ASARCO will install are key to a modern compliance program that cuts pollution around industrial plants."

“This settlement will bring tremendous benefits to public health and the environment in Arizona for generations to come through dramatic cuts to harmful air emissions,” said Assistant Attorney General John C. Cruden for the Justice Department's Environment and Natural Resources Division. “The requirements of this consent decree will not only bring ASARCO into compliance with the nation's clean air law, but will also result in testing for lead contamination in area homes, and improvements to nearby roads to further improve air quality.”

EPA's investigation found the company violated federal Clean Air Act standards by failing to adequately control emissions of hazardous air pollutants, such as arsenic and lead, from the Hayden smelter. Under the settlement announced today, ASARCO will install new and upgraded ventilation hoods to capture hot flue gases from its furnaces to better capture the PM, which includes the hazardous air pollutants, and SO2. The company will also replace an aging electrostatic precipitator with a new, cleaner baghouse and inject high performance lime to reduce SO2 emissions.

To reduce wind-blown dust from the facility, which contains varying levels of heavy metals, the company will implement an improved dust control plan, including the use of wind fences, upgraded water sprayers and the installation of concrete pads. In addition, ASARCO will operate five ambient air monitors in and around the Hayden and Winkelman communities to track levels of pollutants, including arsenic, lead and PM, and will make additional improvements to dust controls if levels are high.

The settlement requires ASARCO to spend $8 million to fund two environmental mitigation projects. Of this, $6 million will be used on a road paving project in Pinal County that will reduce dust pollution on local dirt roads close to the towns and residents exposed to PM emissions. In addition, $2 million will be provided to the Gila County Environmental Health Services to conduct lead-based paint testing and abatement in homes, schools and other public buildings in the towns of Hayden and Winkelman.

ASARCO will spend approximately $1 million to replace an existing diesel switch locomotive operated at the facility with a cleaner diesel-electric switch locomotive. The project will reduce emissions of nitrogen oxides, which are precursors to the formation of PM2.5, and greenhouse gases.

Long-term inhalation exposure to inorganic arsenic is associated with irritation of the skin and can affect the brain and nervous system. Exposure to lead can cause effects on the blood, as well as the nervous, immune, renal, and cardiovascular systems. Particulate matter, especially inhalable coarse particles (PM10) and fine particles (PM2.5), can cause coughing or difficulty breathing, decreased lung function, aggravated asthma, and even premature death in people with heart or lung disease. SO2 has also been linked to a number of adverse effects on the respiratory system, and SO2 is also a precursor to the formation of PM2.5. Fine particles are also the main cause of reduced visibility (haze) in parts of the United States, including national parks and wilderness areas. The PM2.5 and SO2 emission reductions achieved through compliance with this settlement will also serve to reduce visibility impairment owing to emissions from the facility.

Built in 1912 and expanded over the years, the ASARCO Hayden site is a copper ore processing, concentrating and smelter facility located adjacent to Hayden and Winkelman. The ASARCO plant includes a crusher, concentrator, smelter and tailings impoundment areas and produces 300 to 400 million pounds of copper and over half a million tons of sulfuric acid annually. ASARCO is owned by Grupo México, a Mexican consortium that owns Ferromex, the largest railroad in Mexico, and operates mines and smelters, including the one in Hayden, that make it the fourth largest copper producer in the world.

The settlement was lodged with the U.S. District Court of Arizona and is subject to a 30-day public comment period and final court approval.

For more information and to read the settlement, visit:
http://www2.epa.gov/enforcement/asarco-llc-settlement.

R301

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Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: Bandemehr, Angela
Sent: Fri, 12 Aug 2016 17:01:20 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Brown, Mary Jean (CDC/ONDIEH/NCEH)
Subject: revised points
Attachments: Bloomberg Lead in Paint Message 8-12-16 .docx

Thanks for your comments! I will remind Walker not to highlight the health piece. I added some thoughts on how existing Bloomberg programs might intersect.

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

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From: Bandemehr, Angela
Sent: Fri, 26 Jan 2018 21:06:06 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Buchanan, Sharunda D. (CDC/ONDIEH/NCEH);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie;Marzouk, Evonne
Subject: RE: Agenda for LPA team meeting on Friday

Excellent!
I will send out an MS Outlook meeting invite with a call-in number. We will also develop an agenda, maybe some slides that we will share shortly before the meeting.

Have a great weekend!
Angela

Angela L. Bandemehr • Senior International Program Manager
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EPA • Office of International and Tribal Affairs
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From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Friday, January 26, 2018 3:17 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; SDB4@cdc.gov; hhs0@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Feb 7 works for me. Thanks.

From: "Bandemehr, Angela" <Bandemehr.Angela@epa.gov>
Sent: Friday, January 26, 2018 1:52 PM
To: "Buchanan, Sharunda D. (CDC/ONDIEH/NCEH)" <sdb4@cdc.gov>,"Falk, Henry (CDC/ONDIEH/OD) (CTR)" <hxf1@cdc.gov>,"Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" <hhs0@cdc.gov>
CC: "Mccann, Ellie" <Mccann.Ellie@epa.gov>,"Marzouk, Evonne" <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Wednesday or Thursday afternoon would work best for us, but it does not appear that both Henry and Sharunda are available at those times. Should we look at the week after next? Now I'm thinking I'd like to also invite my Office Director, Walker Smith to the call, if possible, and it would be easier to involve her, if we have more lead time.

We could do Wednesday, February 7 at 2 or 3 pm. Would that work?

Thank you for your patience in scheduling!

Regards,
Angela

From: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) [mailto:sdb4@cdc.gov]
Sent: Friday, January 26, 2018 1:37 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; hhs0@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Next week's availability includes the following:

- Tues, Jan 30 -- 9:30 – 11:30
- Thurs, Feb 1 -- 1 – 3pm
- Fri, Feb 2 – 9:30 – 10:30 am

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, January 26, 2018 12:25 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>; Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Hi Henry:
Great idea for an introductory call with Sharunda. Since our lead on the AAP is out today and I'm not sure of her schedule on Monday, plus Ellie is out Monday, I think it would be better to wait to do an introductory call with Sharunda for later next week. Would that work? If so, please let us know what day would work best.

If you still want to talk about AAP on Monday, Evonne and I would be happy to call you.

Regards,

Angela

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Friday, January 26, 2018 10:18 AM
To: hhs0@cdc.gov; Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>;

SDB4@cdc.gov
Subject: Re: Agenda for LPA team meeting on Friday

I am free all day Monday. Perhaps it would also be a good time to introduce Sharunda to you. Helen, can you check if Sharunda available Monday?

From: "Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" <hhs0@cdc.gov>
Sent: Friday, January 26, 2018 10:13 AM
To: "Bandemehr, Angela" <Bandemehr.Angela@epa.gov>
CC: "Falk, Henry (CDC/ONDIEH/OD) (CTR)" <hxf1@cdc.gov>,"Mccann, Ellie" <Mccann.Ellie@epa.gov>,"Marzouk, Evonne" <Marzouk.Evonne@epa.gov>,"Buchanan, Sharunda D. (CDC/ONDIEH/NCEH)" <sdb4@cdc.gov>
Subject: Re: Agenda for LPA team meeting on Friday

I was going to mention this on the call today—Dr Sharunda Buchanan will be attending these meetings instead of me going forward. So please loop her into this and subsequent meetings. Unfortunately, she is unable to make the call today, but I've cc:d her so you can start adding her to invites.

Thanks! Helen

Helen S. Rogers, PhD
Senior Science Officer/ Lead Scientist
Water and Food Environmental Health Services Branch (proposed)
Division of Environmental Health, Service and Practice (proposed)
CDC/NCEH/Division of Emergency and Environmental Health Services
I telework Tuesday's and Fridays from 7-3:30.
404-784-2531 (cell)
404-663-1203 (blackberry)

On Jan 26, 2018, at 10:04 AM, Bandemehr, Angela <Bandemehr.Angela@epa.gov> wrote:

> Hi Henry:
> Happy to talk about the AAP engagement. Looping in Evonne, who is leading on this. What time would work for a call on Monday?
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>
> ---
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> **From:** Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
> **Sent:** Friday, January 26, 2018 10:00 AM
> **To:** Mccann, Ellie <Mccann.Ellie@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; hhs0@cdc.gov
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Thanks, Henry

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To: "Smith, Walker" <Smith.Walker@epa.gov>,"Falk, Henry (CDC/ONDIEH/OD) (CTR)" <hxf1@cdc.gov>,"Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" <hhs0@cdc.gov>,"Bandemehr, Angela" <Bandemehr.Angela@epa.gov>,"Tierney, Cate" <Tierney.Cate@epa.gov>,"Leonard, Darlene" <Leonard.Darlene@epa.gov>,"Cappuccilli, Eva" <cappuccilli.eva@epa.gov>,"Harrington, Glenn" <Harrington.Glenn@epa.gov>,"Ford, Joe" <Ford.Joe@epa.gov>,"Maher, Lauren" <Maher.Lauren@epa.gov>,"Marzouk, Evonne" <Marzouk.Evonne@epa.gov>,"Mccann, Ellie" <Mccann.Ellie@epa.gov>,"Ortega, Kellie" <Ortega.Kellie@epa.gov>,"Huber, Patrick" <Huber.Patrick@epa.gov>,"Sellars, Shayna" <sellars.shayna@epa.gov>,"Wolfson, Steve" <Wolfson.Steve@epa.gov>
CC: "Sims, JaniceHQ" <Sims.JaniceHQ@epa.gov>,"Shannon, Julie" <Shannon.Julie@EPA.GOV>
Subject: Agenda for LPA team meeting on Friday

All – agenda below and attached. See you tomorrow.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520

EPA Lead Paint Alliance Team meeting, January 26, 2018, 10:30 – 12:00
Location: EPA East Room 5207A; Call: 866-299-3188, 202-566-0520#

Invitees:
OITA: Walker Smith, Angela Bandemehr, Patrick Huber, Evonne Marzouk, Glenn Harrington, Janice Sims
OPPT: Ellie McCann, Darlene Leonard, Eva Cappuccilli, Shayna Sellars, Julie Shannon
OECA: Cate Tierney, Kellie Ortega
OGC: Lauren Maher, Steve Wolfson
OAR: Joe Ford
US CDC: Helen Rogers, Henry Falk

Key meetings/calls
Previous 2 weeks (Jan. 15-26):
Jan. 17 – EPA/ABA-ROLI call re GEF project
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

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Jan. 23-25 – SAICM regional mtg: Asia Pacific, in Bangkok, Thailand
Jan. 24 – EPA/WHO/UNEP/DOC call re activities in Eurasian Region (EAEU/CEE)
Jan 24 – EPA/UNEP-LAC re preparations for SAICM regional mtg in Panama on Jan. 29

Upcoming:
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Feb. 8 – OECD Chemicals Committee meeting
Feb. 9 – SAICM regional mtg: Western Europe & Other Groups, in Paris, France
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AGENDA

1. GEF Lead Paint Project planning – Angela
2. Spanish translations of model law - Ellie
3. Latin America & Caribbean activities - Patrick
    - Jamaica workshop follow-up
    - SAICM regional meeting for LAC (Jan. 29)
4. Central & Eastern Europe activities - Angela
    - Kazakhstan's draft LP law
    - SAICM regional meeting for CEE (Feb. 19)
5. Ukraine's draft LP law - Ellie
6. American Academy of Pediatrics: future work – Angela
7. LPA brand identity guidelines - Ellie

From: Bandemehr, Angela
Sent: Fri, 26 Jan 2018 17:25:02 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie;Marzouk, Evonne;Buchanan, Sharunda D. (CDC/ONDIEH/NCEH)
Subject: RE: Agenda for LPA team meeting on Friday

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Thanks! Helen

Helen S. Rogers, PhD

Senior Science Officer/ Lead Scientist
Water and Food Environmental Health Services Branch (proposed)
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I telework Tuesday's and Fridays from 7-3:30.
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> **To:** Mccann, Ellie <Mccann.Ellie@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; hhs0@cdc.gov
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> **Subject:** Agenda for LPA team meeting on Friday

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Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520

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From: Bandemehr, Angela
Sent: Thu, 9 Mar 2017 14:57:19 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Mccann, Ellie;Mance, Cassandra;Wolfson, Steve;Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Shafick Hoossein
Cc: Ana Luisa Gomes Lima
Subject: RE: Call on Lead in Paint with WB

Thank you all. I have moved the meeting to Friday. Talk to you then!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Wednesday, March 08, 2017 4:12 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Mance, Cassandra <mance.cassandra@epa.gov>; Wolfson, Steve <Wolfson.Steve@epa.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Shafick Hoossein <shoossein@worldbank.org>
Cc: Ana Luisa Gomes Lima <alima1@worldbank.org>
Subject: RE: Call on Lead in Paint with WB

Either one is fine with me.

From: "Bandemehr, Angela"
Sent: Wednesday, March 8, 2017 3:47 PM
To: "Mccann, Ellie" ,"Mance, Cassandra" ,"Wolfson, Steve" ,"Falk, Henry (CDC/ONDIEH/OD) (CTR)" ,"Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" ,Shafick Hoossein
CC: Ana Luisa Gomes Lima
Subject: RE: Call on Lead in Paint with WB

The World Bank has asked if we can change the meeting time from 3 pm to 4 pm tomorrow or 9 am on Friday.

Please let me know if one of those times works for you.
Thanks!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency

Ph: 202.564.1427

-----Original Appointment-----
From: Bandemehr, Angela
Sent: Monday, March 06, 2017 9:58 AM
To: Bandemehr, Angela; Mccann, Ellie; Mance, Cassandra; Wolfson, Steve; Henry Falk; Helen Rogers; Shafick Hoossein
Cc: Ana Luisa Gomes Lima
Subject: Call on Lead in Paint with WB
When: Thursday, March 09, 2017 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomRRB31213/Ronald-Reagan-Building

Proposed agenda:

- Brief update from EPA/CDC on the Lead Paint Alliance
- Update from the World Bank on the Lead Paint Report
- Next steps

Teleconference Line:

866-299-3188, access code 202 564 1427#

From: Bandemehr, Angela
Sent: Fri, 3 Mar 2017 20:47:44 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Mccann, Ellie;Mance, Cassandra
Subject: RE: Call with the World Bank next week

One correction – remove Friday at 2 pm from the list of possible times/dates. Thanks!

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Friday, March 03, 2017 3:43 PM
To: Henry Falk (hxf1@cdc.gov) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Ellie McCann <mccann.ellie@epa.gov>; Mance, Cassandra <mance.cassandra@epa.gov>
Subject: Call with the World Bank next week

When is a good time to have a call with the World Bank on the lead paint report next week?

For Ellie and I the following times are good:

- Tuesday at 9 or 1 or 2
- Thursday at 10 or 2
- Friday at 9 or 2 or 3

Please let me know what works for you and I'll notify the Bank on Monday. By the way, Mary Jean will be working on it for the Bank.

Thanks!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Marzouk, Evonne
Sent: Thu, 19 Oct 2017 20:06:35 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie;Bandemehr, Angela
Subject: RE: Discussion of lead and crime information

Dear Helen and Henry,
I hope this message finds you well! As you may recall we had rescheduled the conversation about lead and crime information (described below), due to other competing priorities and the emergency response. We wanted to follow up with you to see if now might be an appropriate time to schedule a meeting. Please let me know!

Thanks,
Evonne

Evonne Marzouk
Communications Specialist
Office of Global Affairs and Policy
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
202-564-7529
Marzouk.evonne@epa.gov
www.epa.gov/international
Follow us on Twitter! @EPAAllNations

From: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Sent: Friday, August 18, 2017 7:02 AM
To: Marzouk, Evonne
Cc: Mccann, Ellie; Bandemehr, Angela; hhs0@cdc.gov; Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Discussion of lead and crime information

Hi Evonne,

The summary is a great idea. Right now, my schedule is looking fairly clear the first week of September. My preferred days/times are Tuesday (9/5 all day) and Wednesday (9/6 afternoon). If those times don't work, we can check specific times on different days.

Can you share the information on lead and crime that you've found? I'd like to try to review it prior to our meeting.

Thanks! Helen

Helen Rogers, Ph.D.

Centers for Disease Control and Prevention
National Center for Environmental Health
Division of Emergency and Environmental Health Services

Associate Director for Science

Cell: 404-784-2531
BB: 404-633-1203
Office: 770-488-3431
I telework Tuesdays and Fridays

From: Marzouk, Evonne [mailto:Marzouk.Evonne@epa.gov]
Sent: Thursday, August 17, 2017 5:10 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: Discussion of lead and crime information

Hi Henry and Helen,
I know that you came across information about the correlation between lead and crime in the World Bank report. This topic has been of particular interest to Walker, and so we've done some research and developed a powerpoint summary on the information found. Angela and I were discussing this today, and we'd like to set up a time to discuss this with you and to get your impressions about whether and how this information might be used.

It's not urgent but since it's important to Walker we suspect it might come up in the lead-up to UNEA3, and so we'd like to keep the conversation moving. Can you tell us your availability in September, perhaps the first week or two of September?

Thanks,
Evonne

Evonne Marzouk
Communications Specialist
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Office of International and Tribal Affairs
U.S. Environmental Protection Agency
202-564-7529
Marzouk.evonne@epa.gov
www.epa.gov/international
Follow us on Twitter! @EPAAllNations

weak link between lead and crime when no socio-economic factors are at play. Interestingly, the editorial questions whether the link is, in fact, a weak one.

We are curious about your impressions on this study and how it compares to the others we've discussed which seemed to reach a different conclusion. Any insights you can offer would be helpful.

Thank you!

Best wishes,
Evonne

From: Marzouk, Evonne
Sent: Tue, 9 Jan 2018 21:21:16 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie;Bandemehr, Angela
Subject: RE: Discussion of lead and crime information
Attachments: Editorial - Need to include biological variables.pdf, BECKLEY_JAMAPED_LEAD-CRIME.pdf

Hi Henry and Helen,
Happy New Year! We appreciated the chance to talk to you a couple months ago about the potential association between lead and crime. We also read with interest the attached JAMA article and associated editorial, which Henry more recently brought to our attention. This study seems to indicate a weak link between lead and crime when no socio-economic factors are at play. Interestingly, the editorial questions whether the link is, in fact, a weak one.

We are curious about your impressions on this study and how it compares to the others we've discussed which seemed to reach a different conclusion. Any insights you can offer would be helpful.

Thank you!

Best wishes,
Evonne

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From: Bandemehr, Angela
Sent: Wed, 7 Mar 2018 15:21:42 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: EPA-CDC call

No, no, you are definitely welcome to join!! Yes, please ask Sharunda if its ok if I email you both or how she would like to do it.

Thanks!!

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Wednesday, March 07, 2018 10:01 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: RE: EPA-CDC call

No problem. If you want me to, I can join. You can ask Sharunda if you want. I just thought it would be interesting to hear what's happening. Helen always preferred I join whenever available; I'll ask Sharunda.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Wednesday, March 7, 2018 9:59 AM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: EPA-CDC call

Hi Henry!
Glad you can make it. I wrote directly to Sharunda and copied you. Not sure of the protocol. Hope that's ok.

:)

Angela

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Wednesday, March 07, 2018 9:48 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; SDB4@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: EPA-CDC call

March 14 at 11am would also be good for me and able to join.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
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From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Wednesday, March 7, 2018 9:38 AM
To: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: EPA-CDC call

Good morning, Sharunda!
We look forward to speaking with you on the team meeting call today, but I also wanted to reach out to you to set up a smaller call to discuss the new team structure, so that we can better answer any questions you may have. We can also use that time to strategize about how to work together in the future.

How does next week Wednesday, March 14 at 11 am look for you? If that doesn't work, please suggest a time that is convenient.

Best,
Angela

From: Bandemehr, Angela
Sent: Wed, 7 Mar 2018 14:58:40 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: EPA-CDC call

Hi Henry!
Glad you can make it. I wrote directly to Sharunda and copied you. Not sure of the protocol. Hope that's ok.

:)

Angela

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Wednesday, March 07, 2018 9:48 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; SDB4@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: EPA-CDC call

March 14 at 11am would also be good for me and able to join.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Wednesday, March 7, 2018 9:38 AM
To: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: EPA-CDC call

Good morning, Sharunda!
We look forward to speaking with you on the team meeting call today, but I also wanted to reach out to you to set up a smaller call to discuss the new team structure, so that we can better answer any

questions you may have. We can also use that time to strategize about how to work together in the future.

How does next week Wednesday, March 14 at 11 am look for you? If that doesn't work, please suggest a time that is convenient.

Best,
Angela

From: Mccann, Ellie
Sent: Sun, 4 Feb 2018 22:09:38 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Bandemehr, Angela;Buchanan, Sharunda D. (CDC/ONDIEH/NCEH);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Marzouk, Evonne
Subject: RE: EPA-CDC meeting

Wow Henry, that's a huge milestone – Happy Birthday! Sounds as if a lovely family celebration is planned. ☺

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Sunday, February 04, 2018 8:56 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; SDB4@cdc.gov; hhs0@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: EPA-CDC meeting

Hi all, the Wed 11am time slot in general is very good for me. Unfortunately, I won't be able to make this Wednesday's meeting.

PS. Wednesday is my 75th birthday, and my family just detailed for me the plans for the day, my son is flying in from San Francisco to participate, etc. Turns out this Wednesday is booked. All in a good cause. I plan to join the following Wednesdays. Sorry about this. I'll catch up with Sharunda after the meeting. Henry

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Thursday, February 1, 2018 2:33 PM
To: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: EPA-CDC meeting

Hi everyone!
Since we have now changed our Lead Paint Team meetings to the time for our EPA-CDC meeting (11 am on Wednesday, starting on Feb 7), I suggest the EPA-CDC discussion be the central agenda item for the team meeting call.

If we find that there are several topics where we need to follow up on a small group basis, we can do that subsequently.

Would this be acceptable to everyone?

Best,
Angela

From: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) [mailto:sdb4@cdc.gov]
Sent: Friday, January 26, 2018 2:05 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; hhs0@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Thanks, so much…this is a good time for me!

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, January 26, 2018 2:02 PM
To: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Hi Sharunda:
We could do 11 am. Would that work for you? We could keep it to 30-45 minutes to give you time before your afternoon meeting, if you like.

Would this work for you, Henry?

Thanks for your flexibility.

Angela

From: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) [mailto:sdb4@cdc.gov]
Sent: Friday, January 26, 2018 1:58 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; hhs0@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

February 7th, I'm scheduled for an afternoon meeting, 12:30 – 3:30 pm. I do have some availability on this day during the morning, however.

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, January 26, 2018 1:52 PM
To: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Wednesday or Thursday afternoon would work best for us, but it does not appear that both Henry and Sharunda are available at those times. Should we look at the week after next? Now I'm thinking I'd like to also invite my Office Director, Walker Smith to the call, if possible, and it would be easier to involve her, if we have more lead time.

We could do Wednesday, February 7 at 2 or 3 pm. Would that work?

Thank you for your patience in scheduling!

Regards,
Angela

From: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) [mailto:sdb4@cdc.gov]
Sent: Friday, January 26, 2018 1:37 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; hhs0@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Next week's availability includes the following:

- Tues, Jan 30 -- 9:30 – 11:30
- Thurs, Feb 1 -- 1 – 3pm
- Fri, Feb 2 – 9:30 – 10:30 am

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, January 26, 2018 12:25 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH)

<hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>; Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Hi Henry:
Great idea for an introductory call with Sharunda. Since our lead on the AAP is out today and I'm not sure of her schedule on Monday, plus Ellie is out Monday, I think it would be better to wait to do an introductory call with Sharunda for later next week. Would that work? If so, please let us know what day would work best.

If you still want to talk about AAP on Monday, Evonne and I would be happy to call you.

Regards,

Angela

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Friday, January 26, 2018 10:18 AM
To: hhs0@cdc.gov; Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>; SDB4@cdc.gov
Subject: Re: Agenda for LPA team meeting on Friday

I am free all day Monday. Perhaps it would also be a good time to introduce Sharunda to you. Helen, can you check if Sharunda available Monday?

From: "Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" <hhs0@cdc.gov>
Sent: Friday, January 26, 2018 10:13 AM
To: "Bandemehr, Angela" <Bandemehr.Angela@epa.gov>
CC: "Falk, Henry (CDC/ONDIEH/OD) (CTR)" <hxf1@cdc.gov>,"Mccann, Ellie" <Mccann.Ellie@epa.gov>,"Marzouk, Evonne" <Marzouk.Evonne@epa.gov>,"Buchanan, Sharunda D. (CDC/ONDIEH/NCEH)" <sdb4@cdc.gov>
Subject: Re: Agenda for LPA team meeting on Friday

I was going to mention this on the call today—Dr Sharunda Buchanan will be attending these meetings instead of me going forward. So please loop her into this and subsequent meetings. Unfortunately, she is unable to make the call today, but I've cc:d her so you can start adding her to invites.

Thanks! Helen

Helen S. Rogers, PhD
Senior Science Officer/ Lead Scientist
Water and Food Environmental Health Services Branch (proposed)
Division of Environmental Health, Service and Practice (proposed)
CDC/NCEH/Division of Emergency and Environmental Health Services

I telework Tuesday's and Fridays from 7-3:30.
404-784-2531 (cell)
404-663-1203 (blackberry)

On Jan 26, 2018, at 10:04 AM, Bandemehr, Angela <Bandemehr.Angela@epa.gov> wrote:

> Hi Henry:
> Happy to talk about the AAP engagement. Looping in Evonne, who is leading on this. What time would work for a call on Monday?
> Angela
>
> ---
>
> **From:** Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
> **Sent:** Friday, January 26, 2018 10:00 AM
> **To:** Mccann, Ellie <Mccann.Ellie@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; hhs0@cdc.gov
> **Subject:** Re: Agenda for LPA team meeting on Friday
>
> Just back from essentially a month of travel and unable to make today's call.
>
> I am interested in the AAP agenda item. Angela, if OK I would call you on Monday to learn more about that.
>
> Thanks, Henry
>
> ---
>
> **From:** "Mccann, Ellie" <Mccann.Ellie@epa.gov>
> **Sent:** Thursday, January 25, 2018 1:32 PM
> **To:** "Smith, Walker" <Smith.Walker@epa.gov>,"Falk, Henry (CDC/ONDIEH/OD) (CTR)" <hxf1@cdc.gov>,"Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" <hhs0@cdc.gov>,"Bandemehr, Angela" <Bandemehr.Angela@epa.gov>,"Tierney, Cate" <Tierney.Cate@epa.gov>,"Leonard, Darlene" <Leonard.Darlene@epa.gov>,"Cappuccilli, Eva" <cappuccilli.eva@epa.gov>,"Harrington, Glenn" <Harrington.Glenn@epa.gov>,"Ford, Joe" <Ford.Joe@epa.gov>,"Maher, Lauren" <Maher.Lauren@epa.gov>,"Marzouk, Evonne" <Marzouk.Evonne@epa.gov>,"Mccann, Ellie" <Mccann.Ellie@epa.gov>,"Ortega, Kellie" <Ortega.Kellie@epa.gov>,"Huber, Patrick" <Huber.Patrick@epa.gov>,"Sellars, Shayna" <sellars.shayna@epa.gov>,"Wolfson, Steve" <Wolfson.Steve@epa.gov>
> **CC:** "Sims, JaniceHQ" <Sims.JaniceHQ@epa.gov>,"Shannon, Julie" <Shannon.Julie@EPA.GOV>
> **Subject:** Agenda for LPA team meeting on Friday
>
> All – agenda below and attached. See you tomorrow.
>
> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520

EPA Lead Paint Alliance Team meeting, January 26, 2018, 10:30 – 12:00
Location: EPA East Room 5207A; Call: 866-299-3188, 202-566-0520#

Invitees:
OITA: Walker Smith, Angela Bandemehr, Patrick Huber, Evonne Marzouk, Glenn Harrington, Janice Sims
OPPT: Ellie McCann, Darlene Leonard, Eva Cappuccilli, Shayna Sellars, Julie Shannon
OECA: Cate Tierney, Kellie Ortega
OGC: Lauren Maher, Steve Wolfson
OAR: Joe Ford
US CDC: Helen Rogers, Henry Falk

Key meetings/calls
Previous 2 weeks (Jan. 15-26):
Jan. 17 – EPA/ABA-ROLI call re GEF project
Jan. 18 – EPA/UNEP-RONA mtg re Pb paint activities & coordination
Jan. 19 – EPA/UNEP/NCPCs re role in GEF project for National Cleaner Production Centers
Jan. 23 – EPA/AAP (American Academy of Pediatrics) call re opportunities to assist LPA
Jan. 23-25 – SAICM regional mtg: Asia Pacific, in Bangkok, Thailand
Jan. 24 – EPA/WHO/UNEP/DOC call re activities in Eurasian Region (EAEU/CEE)
Jan 24 – EPA/UNEP-LAC re preparations for SAICM regional mtg in Panama on Jan. 29

Upcoming:
Jan. 29-31 – SAICM regional mtg: Latin America & Caribbean, in Panama City, Panama
Jan/Feb (TBD) – UNEP submits to GEF the global lead paint project implementation plan
Feb. 6-8 – SAICM regional mtg: Africa, in Abidjan, Ivory Coast
Feb. 8 – OECD Chemicals Committee meeting
Feb. 9 – SAICM regional mtg: Western Europe & Other Groups, in Paris, France
Feb. 19-23 – SAICM regional mtg: Central & Eastern Europe, in Lodz, Poland
March (TBD) – World Bank annual staff training mtg; WB lead paint report to be published
March 13-15 – SAICM Second Intersessional Meeting (focus: SAICM beyond 2020)
April 12-13 – 2018 Summit of the Americas, Peru; possible lead paint presentation
April 23 – EPA/OEJ's Goldman Prize presentation for IPEN person's work on Philippine Pb paint law
October (TBD) – SAICM OEWG (Open-ended Working Group) meeting

AGENDA
1. GEF Lead Paint Project planning – Angela
2. Spanish translations of model law - Ellie

3. Latin America & Caribbean activities - Patrick
    - Jamaica workshop follow-up
    - SAICM regional meeting for LAC (Jan. 29)
4. Central & Eastern Europe activities - Angela
    - Kazakhstan's draft LP law
    - SAICM regional meeting for CEE (Feb. 19)
5. Ukraine's draft LP law - Ellie
6. American Academy of Pediatrics: future work – Angela
7. LPA brand identity guidelines - Ellie

From: Bandemehr, Angela
Sent: Fri, 12 Aug 2016 16:55:36 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Brown, Mary Jean (CDC/ONDIEH/NCEH)
Subject: RE: for call with bloomberg

Good points Henry. I told Walker about Jessica's background and about the 5 topics. But Walker is not so knowledgeable about the global burden of disease and monitoring aspects and will be focused on raising awareness to promote and getting lead paint laws. If it seems to be of interest, feel free to jump in.

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Friday, August 12, 2016 12:12 PM
To: Brown, Mary Jean (CDC/ONDIEH/NCEH) <mjb5@cdc.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: for call with bloomberg

I think the document is helpful and Mary Jean's comments are good ones. In general, as former environmental health director at NYC Health Department, Jessica knows lead poisoning issues well, so no need to dwell on that. Bloomberg is always interested in global burden of disease and monitoring data, so discussion along those lines and overall global impact of lead in paint will be of interest; it's also something she is probably not familiar with.

In terms of Bloomberg Philanthropies, there are 5 groups, and Jessica is within the Public Health group which is led by Kelly Henning. Jessica I think was brought on to help establish an environmental health component within the PH group, and that is why she is exploring topics like lead paint.

In general, I think they like to see some interaction and partnering among the 5 groups, so OK to inquire about potential interest from the other groups at Bloomberg; an obvious one would be their environmental group. We'll see what Jessica says on that one, but I suspect this is still preliminary enough that she hasn't canvassed the others yet.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Brown, Mary Jean (CDC/ONDIEH/NCEH)
Sent: Friday, August 12, 2016 11:11 AM
To: 'Bandemehr, Angela' <Bandemehr.Angela@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: for call with bloomberg

Here are some comments. I would focus on the second half of this agenda, Jessica is an expert in lead and lead poisoning, MJ

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, August 12, 2016 8:41 AM
To: Brown, Mary Jean (CDC/ONDIEH/NCEH) <mjb5@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: for call with bloomberg

Walker asked me to put together an internal EPA outline of the lead paint alliance work to help guide our message. Please find it attached. I also had the additional thoughts below based on a review of their annual report and would like your thoughts.

(b) (5)

Thanks
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Teichman, Kevin
Sent: Wed, 13 Apr 2016 18:33:20 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Sinks, Tom
Subject: Re: Hi Kevin

Henry:
So nice to hear from you and know you are well.
I will always remember our conversation outside The Malt Shoppe in Duluth. (Eat your heart out, Tom.)
I also thought you would enjoy my response to Tom when you conveyed your regards: "With or without hippopotamus sweat, Henry is a mensch."
Chag sameach v'kasher.
Kol tuv,
Kevin

Kevin Teichman
Senior Science Advisor
Office of Research and Development (8101R)
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

Phone: (301) 975-6421
Fax: (301) 975-4409

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Sent: Wednesday, April 13, 2016 2:26 PM
To: Sinks, Tom; Teichman, Kevin
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Hi Kevin

Kevin, I probably know as much as anybody else about hippopotamus sweat. I hope all is well!

My son worked one summer for a month at the Atlanta zoo when he was a teenager. His most memorable experience was immunizing the rhinoceros. There is apparently only one small spot on the rhinoceros where you get the needle through the body armor, and it took them about 4 hours to position the rhinoceros so that they could plunge the needle and then run away as fast as possible. I'm sure that collecting sweat from a hippo has its moments..

CDC Contact Info
Henry Falk, MD, MPH
Carter Consulting, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608

Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Sinks, Tom [mailto:Sinks.Tom@epa.gov]
Sent: Tuesday, April 12, 2016 11:12 AM
To: Teichman, Kevin <Teichman.Kevin@epa.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: Hi Kevin

I had lunch with Henry Falk yesterday and he made a point of asking me to say hello to you. I forgot to mention to Henry your fascinating research on hippopotamus sweat. I did tell him you were well.

Thomas Sinks, Ph.D.
Director, Office of the Science Advisor
Environmental Protection Agency
1200 Pennsylvania Ave NW
Room 41251 RRB, MC 8105 R
Washington DC, 20460
office: (202) 564-6811 mobile: (404) 226-6288
email: sinks.tom@epa.gov

From: Sinks, Tom
Sent: Mon, 21 Mar 2016 14:18:00 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Hi

Hi Henry – thanks for checking.

I will be home next Friday through Monday. But these will be the last 4 days I am home before the house goes on the market April 2. That weekend we all stay in DC. I spent every minute of the past 3 weekends cleaning up and cleaning out the house – it is hard to remove the 24 year old stain of occupancy a family of 5 (and a dog) leave on a house. This weekend will be scrambling to get things finished. So next weekend is not good. And the following weekend I will remain in DC.

So if you'd like let's set something up for some time Friday April 8 through Monday April 11.

Hope all is well with you and yours. Just heard that the "plans du jour" are to reduce the NCEH divisions to two and create an ATSDR Czar. I'm not surprised - but it is a perfect example of regression.

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Sunday, March 20, 2016 4:44 PM
To: Sinks, Tom <Sinks.Tom@epa.gov>
Subject: Hi

I saw Kelly in Chamblee on Friday, and she brought me up to date a little. She did say you'll be back next weekend. I would be happy to talk, have a coffee, or whatever; just wanted to hear how you are doing in DC. Let me know if any chance to talk. If next weekend busy, we can also talk any other time that is convenient for you. Hope all is well.

CDC Contact Info
Henry Falk, MD, MPH
Carter Consulting, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
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From: Bandemehr, Angela
Sent: Thu, 8 Sep 2016 20:11:19 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: HOLD: World Bank Lead Study Follow Up

Henry:
It went amazingly well! Shafick is on the very same page with us and Helen was also very helpful. Happy to update you later, but I'm heading out on a business trip for next week and will not have time until I get back.

Best,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Thursday, September 08, 2016 2:58 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: RE: HOLD: World Bank Lead Study Follow Up

Angela, I was out all day, just getting back now; sorry I missed this. I hope it went well, and hopefully Helen was on the call.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Thursday, September 08, 2016 10:54 AM
To: Shafick Hoossein <shoossein@worldbank.org>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Donald Edward Shriber <dshriber@worldbank.org>; Wolfson, Steve <Wolfson.Steve@epa.gov>; Maher, Lauren <Maher.Lauren@epa.gov>; Schurz Rogers, Helen

(CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Huber, Patrick <Huber.Patrick@epa.gov>
Subject: RE: HOLD: World Bank Lead Study Follow Up

Hi Shafick:
Great, I'm glad that works. I do not know yet if the CDC can make it though. If not, I suggest we keep it brief and plan a call when I get back from mission after next week.

I will send out an invite with a call-in number.

Thanks!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Shafick Hoossein [mailto:shoossein@worldbank.org]
Sent: Thursday, September 08, 2016 10:52 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Henry Falk (hxf1@cdc.gov) <hxf1@cdc.gov>; Donald Edward Shriber <dshriber@worldbank.org>; Wolfson, Steve <Wolfson.Steve@epa.gov>; Maher, Lauren <Maher.Lauren@epa.gov>; hhs0@cdc.gov; Huber, Patrick <Huber.Patrick@epa.gov>
Subject: RE: HOLD: World Bank Lead Study Follow Up

Dear Angela

I am available at 2pm indeed. Shall I call you on the same number as you sent last time?

Many thanks

Shafick

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Thursday, September 08, 2016 10:50 AM
To: Shafick Hoossein; Mccann, Ellie; Henry Falk (hxf1@cdc.gov); Donald Edward Shriber; Wolfson, Steve; Maher, Lauren; hhs0@cdc.gov; Huber, Patrick
Subject: RE: HOLD: World Bank Lead Study Follow Up

Hi Shafick!
I'm sorry to hear about your flight troubles. I'm available at 2 pm today. Does that work for you and others?
Best,
Angela

Angela Bandemehr

International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Shafick Hoossein [mailto:shoossein@worldbank.org]
Sent: Thursday, September 08, 2016 10:12 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Henry Falk (hxf1@cdc.gov) <hxf1@cdc.gov>; Donald Edward Shriber <dshriber@worldbank.org>; Wolfson, Steve <Wolfson.Steve@epa.gov>; Maher, Lauren <Maher.Lauren@epa.gov>; Huber, Patrick <Huber.Patrick@epa.gov>; Lemmond, Marc <Lemmond.Marc@epa.gov>; hhs0@cdc.gov
Subject: RE: HOLD: World Bank Lead Study Follow Up

Dear Angela

My apologies, due to unforeseen circumstances with the airline I arrived this morning. I am available for a chat at your convenience.

Many thanks

Shafick

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Wednesday, September 07, 2016 2:18 PM
To: Mccann, Ellie; Henry Falk (hxf1@cdc.gov); Donald Edward Shriber; Shafick Hoossein; Wolfson, Steve; Maher, Lauren; Huber, Patrick; Lemmond, Marc; hhs0@cdc.gov
Subject: RE: HOLD: World Bank Lead Study Follow Up

Hello All!
We were not able to connect with the World Bank and will reschedule the call. Shafick, please let me know another good time for a call. I am out of the office next week.

Best,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

-----Original Appointment-----
From: Bandemehr, Angela
Sent: Thursday, August 11, 2016 2:25 PM
To: Mccann, Ellie; Henry Falk (hxf1@cdc.gov); dshriber@worldbank.org; Shafick Hoossein; Steve Wolfson ; Maher, Lauren; Huber, Patrick; Lemmond, Marc; hhs0@cdc.gov

Subject: HOLD: World Bank Lead Study Follow Up
When: Wednesday, September 07, 2016 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: DCRoomRRB31213/Ronald-Reagan-Building

Adding call in number

(b) (6)

From: Bandemehr, Angela
Sent: Wed, 14 Feb 2018 15:06:14 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Introductions

From my view, absolutely. I assume it is Sharunda's call.

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Wednesday, February 14, 2018 10:02 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; SDB4@cdc.gov
Subject: RE: Introductions

If possible, I would be eager to join the call. I've already reviewed multiple drafts of the WB plan with Helen. Thanks.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Wednesday, February 14, 2018 9:59 AM
To: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>; Shafick Hoossein <shoossein@worldbank.org>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: Introductions

Good morning, Sharunda and Shafick!
I wanted to extend an email introduction for both of you to meet virtually. Dr. Sharunda Buchanan is EPA's new point of contact at CDC's National Center for Environmental Health for the Lead Paint Alliance. Shafick Hoossein is the Lead Paint Alliance point of contact for EPA and CDC at the World Bank. He has been spearheading the development of the lead paint report and had asked me to connect the two of you.

I have sent the draft report documents we had as of December 2017 or thereabouts to Sharunda. If it would be helpful, I would be happy to set up a teleconference, when needed and appropriate to discuss the report.

All the best,
Angela

Angela L. Bandemehr • Senior International Program Manager
Office of Global Affairs and Policy
EPA • Office of International and Tribal Affairs
+ 1 (202) 564-1427 | **bandemehr.angela@epa.gov** | **www.epa.gov/international**

From: Bandemehr, Angela
Sent: Thu, 4 Aug 2016 19:11:32 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Brown, Mary Jean (CDC/ONDIEH/NCEH);Huber, Patrick;Mccann, Ellie
Subject: RE: Inviting Henry Falk to EPA team meetings on lead paint

Hi Henry:
Welcome to the team! I would appreciate it, if you would include me in copy on the emails to Walker about the foundation matter. She is my office director and I am the lead staff for her on this particular issue.
Best,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Mccann, Ellie
Sent: Wednesday, August 03, 2016 4:22 PM
To: Henry Falk (hxf1@cdc.gov) <hxf1@cdc.gov>
Cc: Mary Jean Brown <mjb5@cdc.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Huber, Patrick <Huber.Patrick@epa.gov>
Subject: Inviting Henry Falk to EPA team meetings on lead paint

Hi Henry,

We are very glad you will be filling in for Mary Jean until CDC can hire her replacement.

The EPA LPA team meets every 2 weeks to review our activities, although we have skipped a few meetings this summer due to vacations and travel. The next team meeting is scheduled for August 12. I will send you an invitation to the whole series of meetings so they will show up on your calendar, and then you can accept them one at a time as you are available.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Bandemehr, Angela
Sent: Thu, 29 Mar 2018 19:23:55 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Re: Lead exposures

Precisely. We have no idea of the basis of their claims.

Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
Office of International and Tribal Affairs
US Environmental Protection Agency
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Washington, DC 20460
Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Sent: Saturday, March 24, 2018 4:28:37 PM
To: Bandemehr, Angela
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Lead exposures

Angela, perhaps I missed it, but I don't see any data on lead levels in paint in the article from Pure Earth; how are they making their judgments? Is this just an outdated assumption based on what might have been true years ago? Is there more to this than what I'm seeing?

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Sent: Wednesday, March 21, 2018 1:33 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: FW: Lead exposures

Hi Henry:
Here is the Pure Earth paper, which is being sent around to UNEP and to the World Bank and we are working to provide an update to explain the lead paint piece.

Would appreciate any information you can find out from Phil about the methodology used to reach the conclusions in this paper and why they are saying that lead paint has been solved.

Appreciate this being close hold.

Thanks!
Angela

From: Smith, Walker
Sent: Friday, March 16, 2018 5:14 PM
To: Jacob Duer <jacob.duer@un.org>; Ernesto Sanchez-Triana <esancheztriana@worldbank.org>
Cc: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: FW: Lead exposures

Dear Jacob and Ernesto,

I wanted to let you know that we are developing a paper that addresses the question of why lead paint is a major pathway for lead exposure in the developing world. We think this is important because some of the assertions in this report are incorrect and "paint" an inaccurate picture about the problem of lead paint exposure. This paper will be important messaging for the Lead Paint Alliance, and won't be responding to the Pure Earth paper but will explain the importance of addressing lead paint. In the meantime, please let Angela or I know if you have any questions.

Best regards,

Walker

Walker B. Smith
Director
Office of Global Affairs and Policy
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
202.564.4044

From: Richard Fuller [mailto:fuller@pureearth.org]
Sent: Tuesday, March 13, 2018 6:15 PM
To: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Jacob Duer <Jacob.DUER@unep.org>; Smith, Walker <Smith.Walker@epa.gov>
Cc: Rachael Vinyard <rachael@pureearth.org>; Bret Ericson <bret@pureearth.org>
Subject: Fwd: Lead exposures

All

Forgive me if you already received this- I am working off an iPad in Melbourne.

Jack and his local counterparts made professional estimates of likely exposures to lead from various

sources, in five countries where we have extensive experience.

It is the starting point for a proper source apportionment study, and extremely interesting in its own right. And when taken together with the new Lanphear study on mortality, frankly quite frightening.

Best

RF

From: Bandemehr, Angela
Sent: Tue, 30 May 2017 16:28:15 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Subject: RE: Lead Paint Module Team Meeting

Yes, it is. sorry that the timing does not work for you. We can touch bases afterwards. If you want to look at what Mary Jean sent and provide any thoughts before the call, that would be great.

Thanks,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Tuesday, May 30, 2017 12:26 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: hhs0@cdc.gov
Subject: FW: Lead Paint Module Team Meeting

Is the next meeting still for June 1st? I think Helen and I will both be out and will need to follow up afterwards.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: mary jean brown [mailto:mjb686@outlook.com]
Sent: Tuesday, May 30, 2017 11:43 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Shafick Hoossein <shoossein@worldbank.org>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Wolfson, Steve <Wolfson.Steve@epa.gov>; Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Maher, Lauren <Maher.Lauren@epa.gov>; Schurz Rogers,

Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Yewande Aramide Awe <yawe@worldbank.org>; Jiyun Gim <jgim@worldbank.org>
Subject: Lead Paint Module Team Meeting

Hi Everybody,
I have attached an update outline for the report and an updated draft of the document. I look forward to your comments, suggestions etc. before or curing our call.
Thanks,
Mary Jean

Sent from Mail for Windows 10

From: Bandemehr, Angela
To: Shafick Hoossein;Mccann, Ellie;Wolfson, Steve;Ernesto Sanchez-Triana;Maher, Lauren;hhs0@cdc.gov;Henry Falk (hxf1@cdc.gov);mary jean brown;Yewande Aramide Awe
Subject: Lead Paint Module Team Meeting
When: Thursday, June 1, 2017, 11:00 AM - 12:30 PM
Location: DCRoomRRB31213/Ronald-Reagan-Building

Bi-weekly meeting of the Lead Paint Module team. Agenda to follow.
Call-in number: + 1 866 299 3188 access code 202 564 1427#

From: Bandemehr, Angela
Sent: Tue, 6 Sep 2016 11:55:43 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Re: PAHO

2 pm works. Thanks!

Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
Office of International and Tribal Affairs
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, MC2660R
Washington, DC 20460

Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Sent: Monday, September 5, 2016 10:07:39 PM
To: Bandemehr, Angela
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: PAHO

Angela, I spoke with Helen Rogers at length on Friday afternoon; she was named by Patrick Breysse and Donna Knutson as the NCEH/ATSDR replacement for Mary Jean Brown in work with the Lead Paint Alliance.

Would you have time tomorrow for a short introductory call with me, you, and Helen? Best times for me are at 2pm, 4pm, or between 10am and noon. Let me know and I will alert Helen. Also, can you arrange a call in number as Helen and I may be in separate places for the call. I did alert her about the Wed calls, but you can fill in more detail when we speak.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, September 02, 2016 12:07 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: PAHO

Henry:
Our meeting with PAHO went well. They are interested in doing an event during the week of action. It may end up being more of a webinar for folks in LAC but it might also include a face to face component. Not clear yet.

Have a great weekend.

Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Tue, 15 Nov 2016 14:12:34 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mance, Cassandra
Subject: RE: Suggestions for World Bank contractors

Oh, and yes, Mary Jean is still on the list.
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Monday, November 14, 2016 10:33 AM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mance, Cassandra <mance.cassandra@epa.gov>
Subject: Re: Suggestions for World Bank contractors

Hi Henry:
This is indeed very helpful. Thanks! I know only Leo, so it is good to hear about the background and capabilities of others. I'll wait to hear from Helen also.

On the Wednesday call, you may have already figured it out, but it is a preparatory meeting between UNEP, WHO and EPA for the Advisory Group meeting on Monday next week. We generally agree on an agenda together before UNEP sends it out. I'm guessing, due to the length of the meeting that they may also want to discuss Secretariat-AG Chair matters, eg think strategically about various Alliance topics. EPA and CDC historically have advised UNEP and WHO directly on a number of matters. One of those may be the logo and brand of the Alliance. I am not positive however.

Finally, I have another favor to ask of you. Only if you can quickly access this information, however. Do you have any advice for where to find any lead in soil standards that may exist in the US? EPA standards, specifically? The WB is looking for this information. If you do not have it to hand, any advice on where to look would be appreciated.

Thanks and I hope your travels to India went well.

Best,
Angela

Angela Bandemehr, MSEE
International Program Manager

Global Affairs and Policy
Office of International and Tribal Affairs
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, MC2660R
Washington, DC 20460

Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Sent: Monday, November 14, 2016 9:42:33 AM
To: Bandemehr, Angela; Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mance, Cassandra; Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Suggestions for World Bank contractors

First, is Mary Jean still on the list?

I do know 3 of the 4 people on the list; I don't know Jennifer Gould, and I'm probably unlikely to know too many economists.

Leo Trasande used to be on our NCEH Board of Scientific Counselors. I knew him when he worked with Phil Landrigan at Mt Sinai; before that I think he did a stint as a visiting scientist type on children's environmental health issues with Hillary Clinton in DC when she was Senator from NY, so he's very familiar with policy type analyses. He's now at NYU and as you know has done some published cost-benefit type analyses on lead poisoning and other topics. He also worked on the since abandoned National Children's study. I think he is very capable of doing what is needed here.

Dave Jacobs has a long history working on housing and lead paint issues, including at HUD for many years. He's also very solid and experienced with these issues, and with doing reports, statements, etc. I also think he is very capable of doing what is needed here. I think Helen and I would know both Leo and David well, and could work very well with them.

I know Mark Miller, but not as well. He is a very sound pediatrician who was in practice for many years, and I interacted with him on the American Academy of Pediatrics Committee on Environmental Hazards; they have produced multiple committee statements on lead poisoning guidance for the Academy, so he is very familiar with lead issues, but perhaps mostly with the clinical and public health aspects. I think he is less academic than Leo and David, and so I am not as certain of his ability to pull off this type of report by himself. He would certainly be a good resource on lead issues, but I would probably rank Leo and David higher for this purpose.

Helen probably has separate experiences with this group than mine, so I would look forward to her thoughts; she also may have more recent experience with them than mine, for example with their contributions to CDC lead poisoning statements and reports, so important to hear from her.

Decades ago, Joel Schwartz who was then at EPA (now at Harvard School of Public Health) did a major cost benefit analysis for us at CDC on lead paint issues, and as you may know he did the EPA analysis for lead in gasoline. He is a super bright guy, whose work has now moved on to air pollution. I'm very

doubtful that he would have the time or interest to do this now, but he understands the issue better than almost anybody and might be a good source of recommendations for other people who could do this.

Scott Grosse at CDC (now in Birth Defects I believe) is also very familiar with cost-benefit issues in this area, and might also be a source for additional recommendations; Helen could follow up with him if needed.

I hope this is helpful. I just returned from India and see a conference call on the calendar for Wednesday morning; can you fill me in briefly on what that one is about? Many thanks, Henry

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Monday, November 14, 2016 9:07 AM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Mance, Cassandra <mance.cassandra@epa.gov>
Subject: Suggestions for World Bank contractors

Good morning!
I'm just now getting to this task the WB asked us to look into - recommending any other researchers who could work on their report. If you recall, they were looking both for an economist and a generalist.

I went back to some email exchanges I had last year with Mary Jean and others in the EPA Children's Health office and came up with this list. Do you know any of them? Would you recommend them? Any others?

Mark Miller - co-director: Western States Pediatric Environmental Health Unit (or one of his staff?)(http://wspehsu.ucsf.edu/about-us/our-team/ucsf-pehsu-staff/mark-miller-md-mph/)
Leo Trasande - NYU
David Jacobs - National Center for Healthy Housing

Jennifer Gould - Economic Policy Institute, Washington, DC, USA -
http://ehp.niehs.nih.gov/0800408/

Thanks!
Angela

Childhood Lead Poisoning: Conservative Estimates of the ...

ehp.niehs.nih.gov

Lead poisoning is a serious hazard for children and causes significant biological and neurologic damage linked to cognitive and behavioral impairment (Bellinger 2008a

Mark Miller, MD, MPH - Western States PEHSU

wspehsu.ucsf.edu

Dr. Mark Miller is an Assistant Clinical Professor in the Departments of Pediatrics and Internal Medicine (Division of Occupational and Environmental Health) at the University of California San Francisco (UCSF). He is also the Co-Director of the UCSF Pediatric Environmental Health Specialty Unit (PEHSU) and the director of the Children's Environmental Health Program at California Environmental ...

Thanks,
Angela

Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
Office of International and Tribal Affairs

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Washington, DC 20460

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From: Bandemehr, Angela
Sent: Mon, 14 Nov 2016 15:32:54 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mance, Cassandra
Subject: Re: Suggestions for World Bank contractors

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Thanks and I hope your travels to India went well.
Best,
Angela
Angela Bandemehr, MSEE
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Washington, DC 20460
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Website: http://www.epa.gov/international
From: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Sent: Monday, November 14, 2016 9:42:33 AM
To: Bandemehr, Angela; Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mance, Cassandra; Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Suggestions for World Bank contractors

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familiar with policy type analyses. He's now at NYU and as you know has done some published cost-benefit type analyses on lead poisoning and other topics. He also worked on the since abandoned National Children's study. I think he is very capable of doing what is needed here.

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I hope this is helpful. I just returned from India and see a conference call on the calendar for Wednesday morning; can you fill me in briefly on what that one is about? Many thanks, Henry

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Monday, November 14, 2016 9:07 AM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Mance, Cassandra <mance.cassandra@epa.gov>
Subject: Suggestions for World Bank contractors

Good morning!
I'm just now getting to this task the WB asked us to look into - recommending any other researchers who could work on their report. If you recall, they were looking both for an economist and a generalist.

I went back to some email exchanges I had last year with Mary Jean and others in the EPA Children's Health office and came up with this list. Do you know any of them? Would you recommend them? Any others?

Mark Miller - co-director: Western States Pediatric Environmental Health Unit (or one of his staff?)(http://wspehsu.ucsf.edu/about-us/our-team/ucsf-pehsu-staff/mark-miller-md-mph/)
Leo Trasande - NYU
David Jacobs - National Center for Healthy Housing
Jennifer Gould - Economic Policy Institute, Washington, DC, USA -
http://ehp.niehs.nih.gov/0800408/

Thanks!
Angela

Childhood Lead Poisoning: Conservative Estimates of the ...

ehp.niehs.nih.gov

Lead poisoning is a serious hazard for children and causes significant biological and neurologic damage linked to cognitive and behavioral impairment (Bellinger 2008a

Mark Miller, MD, MPH - Western States PEHSU

wspehsu.ucsf.edu

Dr. Mark Miller is an Assistant Clinical Professor in the Departments of Pediatrics and Internal Medicine (Division of Occupational and Environmental Health) at the University of California San Francisco (UCSF). He is also the Co-Director of the UCSF Pediatric Environmental Health Specialty Unit (PEHSU) and the director of the Children's Environmental Health Program at California Environmental ...

Thanks,
Angela

Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
Office of International and Tribal Affairs
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, MC2660R
Washington, DC 20460

Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: Bandemehr, Angela
Sent: Thu, 18 May 2017 11:52:45 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie
Subject: RE: WB read out

Thank you for letting me know about your schedules. Let me see if Tuesday or Friday would work. If not, we'll proceed with June 1. Perhaps we can touch bases ahead of time. The more I thought about it afterwards, the more concerned I am that the lead paint part is going to be buried in the larger lead publication. I agree with Henry that a standalone document may be difficult. And I also agree that some clarification of the e-book format would be helpful. And, finally, I'm very concerned about the June 30 deadline. That leaves no time to review any of the material that the economic consultant comes up with to ensure that the messaging on lead paint is along the lines we would prefer – e.g., pass laws to eliminate lead paint (vs measurement and studies for lead paint or taxing lead content – the latter an idea that the Bank had come up with earlier). Any thoughts about how to influence this without being too pushy would be welcome!

Cassie, on our EPA team, found the following on World Bank e-books:

The World Bank has over 20,000 of their publications available on their website, in their "Open Knowledge Repository." From their main page, you can scroll down just a little ways & there is a section titled, "Research." Clicking on "Browse Research and Publications" takes you to the Repository.

The Repository contains reports, books, & serial publications. These publications look just like all the reports & abstracts from IPEN, UNEP, & everywhere else. I had no idea what a serial publication was, so just in case you're in the same boat, here is the definition:

A "serial" is defined as any publication issued in successive parts which are intended to be continued indefinitely. These publications may be issued in print, non-print, and/or electronic format. Common types of serials include: abstracts and indexes. almanacs and yearbooks.

I'm going to look into the e-book angle further.

Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Wednesday, May 17, 2017 2:25 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; hhs0@cdc.gov
Subject: Re: WB read out

I was on for the first half and heard about the modular arrangement. That was fine, although in practice it may be difficult.

I can do Friday, June 2nd. Also, Tuesday, May 30, but that is very close to Memorial day and not sure how others feel. I am out Wed/Thurs that week.

From: "Bandemehr, Angela"
Sent: Wednesday, May 17, 2017 2:10 PM
To: "Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" ,"Falk, Henry (CDC/ONDIEH/OD) (CTR)"
Subject: WB read out

Hi!
I think Helen was on the phone for most, if not all, of the WB call today. Just checking in to say that I would like to give a read out about the meeting at the LPA team meeting. Do you feel the need to chat before that? If so, let me know. I'm about to send around notes from the meeting to everyone.

I think it went as well as can be expected. I think Ernesto is changing his story over time about the lead paint report but I'm glad that he agreed that it be a standalone module. Also, Shaffick wanted to make sure you were happy and made a point to check in with me afterward, as he was not sure Helen had stayed on.

I see that neither of you can make the next team meeting on June 1. Not sure what to suggest. Any ideas? What day would work better? Or do we keep it on that date? Since we have such a short deadline, missing a meeting could be critical. I'd like to make sure you feel that you are as engaged as you want to be. So let me know what I should suggest.

Thanks!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Thu, 18 May 2017 15:19:27 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie
Subject: RE: WB read out

Hi there again! Sorry for all the emails! But I have been thinking about this some more and now am convinced that having the lead paint as part of the larger lead publication will be a benefit, because we will get a broader audience to see the lead paint information. People who wouldn't read a document on lead paint but would read about lead exposure and risks, will now see that lead paint can be addressed.

I briefed Walker about this today and I also said that we can cull out the lead paint piece, either by printing is separately or creating a different document at a later date. She was ok with that. She is very excited that it will be done by the end of June.

She will be on our LPA team call tomorrow, so I wanted to let you know about that conversation.

Thanks,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Thursday, May 18, 2017 7:53 AM
To: 'Falk, Henry (CDC/ONDIEH/OD) (CTR)' <hxf1@cdc.gov>; hhs0@cdc.gov
Cc: Ellie McCann <mccann.ellie@epa.gov>
Subject: RE: WB read out

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Angela

Angela Bandemehr
International Program Manager
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U.S. Environmental Protection Agency
Ph: 202.564.1427

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Subject: Re: WB read out

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Thanks!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Mon, 14 Nov 2016 15:26:51 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Subject: Re: WebEx meeting invitation: Wednesday16Nov5pm(GT)Pre-webinar for preparing to the Lead Paint Alliance's AG Meeting

Hi Henry!
Not sure we need 2.5 hours. The meeting seems to be only via internet, so you would have to click on the link from your computer and then input the code (the 737 number) to access the audio. If that is not possible for you, I can ask if they can also send a call-in number. It might be an international number, in which case, I will dial into the international number and provide a domestic call in number for everyone else.
If you (and/or Helen) can't stay on the whole time, no worries, I can bring you up to speed afterwards.
Angela
Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
Office of International and Tribal Affairs
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, MC2660R
Washington, DC 20460
Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international
From: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Sent: Monday, November 14, 2016 9:49:02 AM
To: Bandemehr, Angela
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Subject: RE: WebEx meeting invitation: Wednesday16Nov5pm(GT)Pre-webinar for preparing to the Lead Paint Alliance's AG Meeting

Angela, do I just dial 1-737…to call in? Also, is this actually a 2.5 hour meeting? I have a lunch appointment at 1pm, so at best I could stay on from 11:00 (do I have that right for East coast time) till 12:30.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Monday, November 14, 2016 8:14 AM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: Fw: WebEx meeting invitation: Wednesday16Nov5pm(GT)Pre-webinar for preparing to the Lead Paint Alliance's AG Meeting

In case you did not get this. Here is the access information for the webex.
Best,
Angela

Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
Office of International and Tribal Affairs
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, MC2660R
Washington, DC 20460

Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: Juan-Manuel Barbeito <messenger@webex.com>
Sent: Monday, November 14, 2016 6:46 AM
To: Bandemehr, Angela
Subject: WebEx meeting invitation: Wednesday16Nov5pm(GT)Pre-webinar for preparing to the Lead Paint Alliance's AG Meeting

Hello,

Juan-Manuel Barbeito invites you to join this WebEx meeting.

Wednesday16Nov5pm(GT)Pre-webinar for preparing to the Lead Paint Alliance's AG Meeting
Wednesday, 16. November 2016
17:00 | Europe Time (Paris, GMT+01:00) | 2 hrs 30 mins

Meeting number: 737 240 398

Meeting password: AsAXAY6W

Add to Calendar

When it's time, join the meeting.

Can't join the meeting?

IMPORTANT NOTICE: Please note that this WebEx service allows audio and other information sent during the session to be recorded, which may be discoverable in a legal matter. By joining this session, you automatically consent to such recordings. If you do not consent to being recorded, discuss your concerns with the host or do not join the session.

From: Bandemehr, Angela
Sent: Thu, 27 Oct 2016 14:20:35 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Subject: RE: World Bank Report

Hi Henry:
Thanks for reviewing. Given Ernesto's latest draft terms of reference for a consultant, I have a feeling the outline will change a lot. We'll find out today.
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Thursday, October 27, 2016 10:19 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: World Bank Report

Angela, I think the changes to the outline look good. Sorry if I didn't reply sooner.

I think you have the right types of information in Chapter 2, but I haven't tried to edit yet given your comments below. Helen and I can work on that whenever you think appropriate. Thanks

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Monday, October 17, 2016 12:27 PM
To: Mccann, Ellie <Mccann.Ellie@epa.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH)

<hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Wolfson, Steve <Wolfson.Steve@epa.gov>; Maher, Lauren <Maher.Lauren@epa.gov>; Samtani, Riddhi <samtani.riddhi@epa.gov>; Sims, JaniceHQ <Sims.JaniceHQ@epa.gov>
Subject: World Bank Report

I'm working on the chapters of the World Bank report and wanted to share what I have so far. I'd really like your thoughts on where I'm heading with this. I have taken what the Bank started with and moved content around. I have not added much content yet, though I made a start. I also revised the outline, based on how the report seems to be shaping up as I edit it.

All: see the revised outline - especially the report objectives

Helen/Henry: Please see chapter 2. Any glaring omissions?
Ellie: Please see chapter 3. Still need to refine the discussion on lead paint laws. Any references I'm missing?

Plan going forward:
- share revised outline with the World Bank for this week's call.
- agree on report objectives
- finish revisions on Chapters 1-3 and send to the Bank
- start writing chapter 7 (possible government policies)
- compile information on industry best practices (chapter 6), IPEN paint studies (chapter 3), case studies (chapter 4) and other chapters.
- once WB contractor hired, work closely to review drafts

I'd like to share the revised outline with the Bank for the Thursday call. I think I'll hold off on the chapters, until I have had a chance to review more closely. Please let me know what you think.

Angela

Angela Bandemehr, MSEE
International Program Manager
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Office of International and Tribal Affairs
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, MC2660R
Washington, DC 20460

Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: Bandemehr, Angela
Sent: Fri, 1 Sep 2017 13:43:56 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: world Bank update

I will talk to Evonne and mention it would be better to wait. This is not urgent. Thanks for letting me know.
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Friday, September 01, 2017 9:42 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: RE: world Bank update

Thanks.

Also, not sure what to do about the meeting next Wednesday with Evonne to discuss lead and crime data; I am happy to do it, but I suspect might be better to reschedule for when Helen will be available. That migh take a couple of weeks however; problems from Harvey are not going to be a quick fix. I'll do whatever you prefer.

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, September 1, 2017 9:36 AM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: world Bank update

Good question, Henry. Ernesto is quite senior. He is the Bank lead on Environmental Health globally. Where exactly he sits in the hierarchy, I do not know. He is also a good friend of our Assistant Administrator and worked with her when she was at the Bank. She was in a senior position and they were on equal footing.

Shafick is a staff person and reports to Ernesto and others as well, as the Bank has a matrix system of reporting.

I hope this helps. Sorry I do not have more definitive answers. I probably should know this.

Angela

Angela Bandemehr
International Program Manager

Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Friday, September 01, 2017 9:11 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: RE: world Bank update

Angela, I should have asked this long ago. What are Ernesto's and Shafick's positions at the World Bank? Just trying to gauge their level of seniority and location at the Bank. Thanks

---

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, September 1, 2017 8:14 AM
To: Mccann, Ellie <Mccann.Ellie@epa.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Mance, Cassandra <mance.cassandra@epa.gov>
Cc: Sims, JaniceHQ <Sims.JaniceHQ@epa.gov>
Subject: world Bank update

I spoke with Shafick recently and he's confirmed with his management that the World Bank is going to shoot for launching the report at UNEA3. See email exchange below. Stay tuned for a call with the World Bank next week. Any preferred days/times?

Thanks,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Thursday, August 31, 2017 8:26 AM
To: 'Shafick Hoossein' <shoossein@worldbank.org>
Cc: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Ana Luisa Gomes Lima <alima1@worldbank.org>; Yewande Aramide Awe <yawe@worldbank.org>
Subject: RE: Lead in Paint

Hi Shafick!
Thanks very much for this summary of next steps. Yes, this is in line with what we discussed. I do have a number of follow up questions to make sure I understand what is probably understood in the timeline reflected below. Given the December launch date, I assume that the timeline still holds of a review of the draft in October, polishing/editing in November? And I also assume that in addition to Chapter 5 (economic analysis), the draft in October will also include the chapters on best practices (chapter 6), recommendations (chapter 7) and conclusions (chapter 8) to be drafted by the Bank.

Would you like me to set up a time for the team meeting next week? If so, do you have a preference?

Regards,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Shafick Hoossein [mailto:shoossein@worldbank.org]
Sent: Wednesday, August 30, 2017 11:01 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Ana Luisa Gomes Lima <alima1@worldbank.org>; Yewande Aramide Awe <yawe@worldbank.org>
Subject: Lead in Paint

Dear Angela

Thank you for taking the time to meet telephonically with me last week. Based on our conversation I have updated Ernesto with regards to the outcome of our meeting. Please note the following:

1. The consultant will begin the work on the Economic chapter asap
2. We are updating some of the BLL data in the chapters
3. The plan is to have the launch of the publication in December 2017 at the UN Environment Assembly in Nairobi in a side event during science week. The air and water training courses are also planned to also be launched as separate side events.
4. We plan to have a team call during the course of next week to get the rest of the team up to speed with progress so far

This is a brief update, but if there anything I have missed or your need clarity on, please do not hesitate to contact me. Thank you for all your help in getting us in contact with the water team, it is most appreciated.

Many thanks

Shafick

Shafick Hoossein
Environmental Scientist
Environment and Natural Resources Global Practice
The World Bank
T+1 (202) 473 2480
M+1 (202) 294 5934
E shoossein@worldbank.org

W www.worldbank.org
A 1818 H Street, Washington DC, USA
s.hoossein7

WORLD BANK GROUP
Environment & Natural Resources

From: Bandemehr, Angela
Sent: Fri, 1 Sep 2017 13:42:09 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Mccann, Ellie;Mance, Cassandra
Cc: Sims, JaniceHQ;Marzouk, Evonne
Subject: RE: world Bank update

Hi Henry:
I will look for times/dates on Tues-Thurs.

As for reactions to our comments, Shafick said he thought they were "fine." We discussed in particular EPA/CDC comments on the health chapter about being more balanced in portraying the various health impacts and outcomes. He agreed with us and said they will work on that. He also agreed with our comments about focusing the material to higher level decision makers and putting certain detailed information in appendixes rather than in the body of the text, so as not to dilute the messages. I told him that MJ did not agree with this and he understood that it would have to be a Bank call on what to do. He said that they definitely plan to have an editor go over the entire report to make it more cohesive and balanced. He also seemed to think we can stick with the current outline of the report, which contains several chapters dedicated to lead paint. So that's good.

Stay tuned for a meeting invite to further discuss with the Bank.

Best,
Angela

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Cc: Sims, JaniceHQ <Sims.JaniceHQ@epa.gov>
Subject: RE: world Bank update

I am out of the office on travel Friday next week. I am relatively free on Tuesday through Thursday, but please check the time for a call.

Angela, was there any response from the World Bank to the comments you had forwarded on the last draft?

From: Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Sent: Friday, September 1, 2017 8:47 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Mance, Cassandra <mance.cassandra@epa.gov>
Cc: Sims, JaniceHQ <Sims.JaniceHQ@epa.gov>
Subject: RE: world Bank update

Good morning!

I am presently at the CDC emergency operations center responding to Hurricane Harvey. My schedule is pretty full—please go ahead and schedule conference calls without me. If I can find free time, I'll call in.

Best, Helen

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, September 01, 2017 8:14 AM
To: Mccann, Ellie <Mccann.Ellie@epa.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Mance, Cassandra <mance.cassandra@epa.gov>
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Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Thursday, August 31, 2017 8:26 AM
To: 'Shafick Hoossein' <shoossein@worldbank.org>
Cc: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Ana Luisa Gomes Lima <alima1@worldbank.org>; Yewande Aramide Awe <yawe@worldbank.org>
Subject: RE: Lead in Paint

Hi Shafick!
Thanks very much for this summary of next steps. Yes, this is in line with what we discussed. I do have a number of follow up questions to make sure I understand what is probably understood in the timeline reflected below. Given the December launch date, I assume that the timeline still holds of a review of the draft in October, polishing/editing in November? And I also assume that in addition to Chapter 5

(economic analysis), the draft in October will also include the chapters on best practices (chapter 6), recommendations (chapter 7) and conclusions (chapter 8) to be drafted by the Bank.

Would you like me to set up a time for the team meeting next week? If so, do you have a preference?

Regards,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Shafick Hoossein [mailto:shoossein@worldbank.org]
Sent: Wednesday, August 30, 2017 11:01 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Ana Luisa Gomes Lima <alima1@worldbank.org>; Yewande Aramide Awe <yawe@worldbank.org>
Subject: Lead in Paint

Dear Angela

Thank you for taking the time to meet telephonically with me last week. Based on our conversation I have updated Ernesto with regards to the outcome of our meeting. Please note the following:

1. The consultant will begin the work on the Economic chapter asap
2. We are updating some of the BLL data in the chapters
3. The plan is to have the launch of the publication in December 2017 at the UN Environment Assembly in Nairobi in a side event during science week. The air and water training courses are also planned to also be launched as separate side events.
4. We plan to have a team call during the course of next week to get the rest of the team up to speed with progress so far

This is a brief update, but if there anything I have missed or your need clarity on, please do not hesitate to contact me. Thank you for all your help in getting us in contact with the water team, it is most appreciated.

Many thanks

Shafick

Shafick Hoossein
Environmental Scientist
Environment and Natural Resources Global Practice
The World Bank
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WORLD BANK GROUP
Environment & Natural Resources

From: Bandemehr, Angela
Sent: Fri, 1 Sep 2017 13:35:42 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: world Bank update

Good question, Henry. Ernesto is quite senior. He is the Bank lead on Environmental Health globally. Where exactly he sits in the hierarchy, I do not know. He is also a good friend of our Assistant Administrator and worked with her when she was at the Bank. She was in a senior position and they were on equal footing.

Shafick is a staff person and reports to Ernesto and others as well, as the Bank has a matrix system of reporting.

I hope this helps. Sorry I do not have more definitive answers. I probably should know this.

Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Friday, September 01, 2017 9:11 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: RE: world Bank update

Angela, I should have asked this long ago. What are Ernesto's and Shafick's positions at the World Bank? Just trying to gauge their level of seniority and location at the Bank. Thanks

---

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, September 1, 2017 8:14 AM
To: Mccann, Ellie <Mccann.Ellie@epa.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Mance, Cassandra <mance.cassandra@epa.gov>
Cc: Sims, JaniceHQ <Sims.JaniceHQ@epa.gov>
Subject: world Bank update

I spoke with Shafick recently and he's confirmed with his management that the World Bank is going to shoot for launching the report at UNEA3. See email exchange below. Stay tuned for a call with the World Bank next week. Any preferred days/times?

Thanks,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Thursday, August 31, 2017 8:26 AM
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Cc: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Ana Luisa Gomes Lima <alima1@worldbank.org>; Yewande Aramide Awe <yawe@worldbank.org>
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Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Shafick Hoossein [mailto:shoossein@worldbank.org]
Sent: Wednesday, August 30, 2017 11:01 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Ana Luisa Gomes Lima <alima1@worldbank.org>; Yewande Aramide Awe <yawe@worldbank.org>
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Many thanks

Shafick

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WORLD BANK GROUP
Environment & Natural Resources

From: U.S. EPA Media Relations
Sent: Wed, 30 Nov 2016 12:00:49 -0500
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Robust Technical Analysis Supports Leaving Carbon Pollution Standards for Cars and Light Trucks in P

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACTS:
Christie St. Clair
stclair.christie@epa.gov
(202) 564-2880

FOR IMMEDIATE RELEASE
November 30, 2016

Robust Technical Analysis Supports Leaving Carbon Pollution Standards for Cars and Light Trucks in Place Through 2025, EPA Administrator Finds

Automakers on track to meet standards at lower than expected cost

WASHINGTON — Based on extensive technical analysis that shows automakers are well positioned to meet greenhouse gas (GHG) emissions standards for model years 2022-2025, U.S. Environmental Protection Agency (EPA) Administrator Gina McCarthy today proposed leaving the standards in place, so the program that was established in 2012 will stay on track to nearly double fuel economy, dramatically cut carbon pollution, maintain regulatory certainty for a global industry, and save American drivers billions of dollars at the pump.

"Given the auto industry's importance to American jobs and communities and the industry's need for certainty well into the future, EPA has reanalyzed these clean car standards and sought further input," said EPA Administrator Gina McCarthy. "It's clear from the extensive technical record that this program will remain affordable and effective. This proposed decision reconfirms our confidence in the auto industry's capacity to drive innovation and strengthen the American economy while saving drivers money at the pump and safeguarding our health, climate and environment."

Today's proposed determination is based on years of technical work, including an exhaustive technical report released earlier this year, and the agency's thorough review and consideration of comments received on that report. This extensive body of analysis shows that manufacturers can meet the standards at similar or even a lower cost than what was anticipated in the 2012 rulemaking, and that the standards will deliver significant fuel savings for American consumers, as well as benefits to public health and welfare from reducing the pollution that contributes to climate change. Full implementation of the standards will cut about 6 billion metric tons of GHG emissions over the lifetimes of the vehicles sold in model years 2012-2025. Cars and light trucks are the largest source of GHG emissions in the U.S. transportation sector.

Although EPA's technical analysis indicates that the standards could be strengthened for model years 2022-2025, proposing to leave the current standards in place provides greater certainty to the auto industry for product planning and engineering. This will enable long-term planning in the auto industry, while also benefiting consumers and the environment.

Today's announcement builds on years of success under EPA's vehicle emission standards. Auto manufacturers are innovating and adopting fuel economy technologies at unprecedented rates. Car makers have developed more technologies to reduce GHG emissions, and these technologies are entering the fleet faster than expected. These technologies include gasoline direct injection, more sophisticated transmissions, and stop-start systems that reduce idling fuel consumption. At the end of 2015, all large automakers were in compliance with the standards. In fact, automakers on average out-performed the model year 2015 standards by seven grams per mile. These gains are happening at a time when the car industry is thriving, and domestic vehicle sales have increased for six consecutive years, while maintaining consumer choice across a full range of vehicle sizes and types.

As part of the rulemaking establishing the model year 2017-2025 light-duty vehicle GHG standards, EPA committed to conduct a Midterm Evaluation of standards for model years 2022-2025. The public comment period for this action begins today and will end on December 30, 2016. After the comment period has ended and consideration of the input, the Administrator will decide whether she has enough information to make a final determination on the model year 2022-2025 standards.

For more information on today's announcement, go to: https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas-ghg.

To provide comment on today's proposed determination, go to Docket EPA-HQ-OAR-2015-0827 at www.regulations.gov.

R184

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: Bandemehr, Angela
Sent: Tue, 1 May 2018 15:33:53 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Buchanan, Sharunda D. (CDC/ONDIEH/NCEH);Cappuccilli, Eva;Chase, Genevieve;Mccann, Ellie;Ford, Joe;Huber, Patrick;Juarez, MariaElena;Leonard, Darlene;Maher, Lauren;Mance, Cassandra;Marzouk, Evonne;Samtani, Riddhi;Tierney, Cate;Wolfson, Steve
Subject: SAICM GEF project proposal draft
Attachments: 9771 SAICM_FSP_1.05.2018.docx

Hi Alliance Team!
Finally we have received a draft of the Lead Paint proposal for the GEF Project!! We are making progress.

Best,
Angela

Angela L. Bandemehr • Senior International Program Manager
Office of Global Affairs and Policy
EPA • Office of International and Tribal Affairs
+ 1 (202) 564-1427 | **bandemehr.angela@epa.gov** | **www.epa.gov/international**

From: Desiree Raquel Narvaez [mailto:desiree.narvaez@un.org]
Sent: Tuesday, May 01, 2018 11:10 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Sara Brosche <sarabrosche@ipen.org>; Jay Monteverde <jay.monteverde@abaroli.org>; branko.dunjic <branko.dunjic@tmf.bg.ac.rs>; VICKERS,Carolyn <vickersc@who.int>; TEMPOWSKI,Joanna Helena <tempowskij@who.int>
Cc: Jacqueline Alvarez <jacqueline.alvarez@un.org>; Eloise Touni <eloise.touni@un.org>; Melanie Ashton <melanie@iisd.org>
Subject: 9771 SAICM_FSP_1.05.2018.docx

Dear Colleagues,

With thanks to Eloise and Melanie, the SAICM GEF project document with the lead in paint component is now ready to be shared with all of you for comments! It has now addressed comments by the UN Environment Project Review Committee (PRC). While it is now back to PRC colleagues for final review, we are sharing this draft in parallel before it finally goes to the GEF secretariat for approval.

PLEASE DO NOT TRACK CHANGE ON THE DOCUMENT; please write your message in the body of the email with clear reference to page number and paragraph. Kindly send me back your comments on or before 17 May. We are getting there!!!

Thanks much in advance,
Desiree

F-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

IECT TYPE: FULL-SIZED PROJECT
: OF TRUST FUND:GEF TRUST FUND

. . . .more information about GEF, visit TheGEF.org

PART I: PROJECT INFORMATION

Project Title: Global best practices on emerging chemical policy issues of concern under SAICM			
Country(ies):	Global	GEF Project ID:[1]	9771
GEF Agency(ies):	UNEP (select) (select)	GEF Agency Project ID:	01571
Other Executing Partner(s):	SAICM Secretariat	Submission Date:	xx May 2018
GEF Focal Area (s):	Chemicals and Wastes	Project Duration (Months)	48
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐	Corporate Program: SGP ☐	
Name of Parent Program	NA	Agency Fee ($)	778,050

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in $)	
			GEF Project Financing	Co-financing
(select) CW-1 Program 1 (select)	Countries have appropriate decision-making tools and economic approaches to promote the removal of barriers preventing the sound management of harmful chemicals and waste; Innovative technologies are successfully demonstrated, deployed and transferred	GEFTF	6,000,000	20,603,000
(select) CW-2 Program 3 (select)	Quantifiable and verifiable tonnes of POPs eliminated or reduced	GEFTF	1,000,000	3,233,495
(select) CW-2 Program 6 (select)	Capacity of LDCs and SIDS to manage harmful chemicals and waste is enhanced	GEFTF	1,190,000	1,420,000
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
	Total project costs		8,190,000	25,246,495

B. PROJECT DESCRIPTION SUMMARY

[1] Project ID number remains the same as the assigned PIF number.
[2] When completing Table A, refer to the excerpts on GEF 6 Results Frameworks for GETF, LDCF and SCCF and CBIT programming directions.

Project Objective: Accelerate adoption of national and value chain initiatives to control Emerging Policy Issues (EPIs), and contribute to the 2020 SAICM goal and 2030 Agenda for Sustainable Development						
Project Components/ Programs	Financing Type[3]	Project Outcomes	Project Outputs	Trust Fund	(in $) GEF Project Financing	Confirmed Co-financing
1. Promoting regulatory and voluntary action by government and industry to phase out lead in paint	TA	Countries legislate and implement legislation to restrict the use of lead in paint (LiP, 40 countries)	1.1 Demonstration pilots with paint manufacturers in Small and Medium Enterprises executed in eight countries 1.2 Policy support and awareness raising to generate support for local phase-out.	GEFTF	3,050,000	10,576,906
2. Lifecycle management of chemicals present in products	TA	Governments and value chain actors in the building products, toys, and electronics sectors track and manage chemicals of concern (CoC) in their products	2.1 New tools and guidance to reduce the use of CoCs in the building, electronics and toys sectors 2.2 Training and support for government and value chain actors to trial and adopt new guidance and tools	GEFTF	2,400,000	3,521,875
3. Knowledge management and stakeholder engagement	TA	A broad group of SAICM stakeholders access information and participate in communities of practice for peer-to-peer learning exchanges	3.1 Collaboration and engagement with the SDG and scientific communities to promote EPIs. 3.2 Knowledge Management platform provides a repository of information and forum for exchange of scientific and policy information	GEFTF	2,000,000	7,220,442
Monitoring and evaluation	TA		4.1 Quarterly financial reports and annual progress reports monitoring status of project execution 4.2 Midterm and Terminal evaluations of project impacts shared with SAICM stakeholders	GEFTF	350,000	
			Subtotal		7,800,000	0
			Project Management Cost (PMC)[4]	GEFTF	390,000	3,927,272
			Total project costs		8,190,000	**25,246,495**

[3] Financing type can be either investment or technical assistance.

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount ($)
Others	Secretariat of the Strategic Approach to International Chemical Management	In-kind	7,854,545
CSO	International POPs Elimination Network (IPEN)	Cash	2,000,000
CSO	IPEN	In-kind	2,000,000
CSO	World Health Organization (WHO)	In-kind	1,400,500
Other	American Bar Association – Rule of Law Initiative (ABA-ROLI)	In-kind	1,500,000
Government	US Environmental Protection Agency (USEPA)	In-kind	100,000
Government	USEPA	Cash	25,000
Government	Peru Ministry of Environment	In-kind	492,568
Other	Peru National Cleaner Production Centre (NCPC)	In-kind	246,000
Government	Jordan Ministry of Industry	In-kind	15,000
Other	Jordan Cleaner Production Unit	In-kind	40,000
Other	Sustainable Consumption and Production Regional Activity Centre (SCPRAC)	In-kind	120,219
Other	China NCPC	In-kind	150,000
CSO	Nigeria SRA-Dev	In-kind	5,000
CSO	Indonesia – BaliFokus	In-kind	5,000
CSO	Serbia NCPC	In-kind	30,000
Private Sector	LARPAINT Peru	In-kind	5,000
Private Sector	J&S Ferreteria (Peru)/ Universal Colours	In-kind	20,000
Private Sector	Pinturas Azteca	In-kind	83,000
Other	International Paint and Printing Ink Council (IPPIC)	In-kind	25,000
Other	Life Cycle Initiative	In-kind	350,000
Other	USEtox International Centre	In-kind	300,000
Other	Sri Lanka NCPC	In-kind	30,000
Other	Sri Lanka Green Building Council (GBC)	In-kind	40,000
Other	Basel Convention Regional Centre for Training and Technology Transfer for the Asia and Pacific Region (BCRC)	In-kind	242,100
Other	China BCRC	Cash	207,900
Other	Green Electronics Council (GEC)	In-kind	60,000
Government	Government of Colombia	In-kind	244,539
Other	International Sustainable Chemistry Collaborative Centre (ISC3)	In-kind	1,109,169
Other	OECD Environment Directorate	In-kind	514,000
Other	University of Cape Town	In-kind	30,000
CSO	International Institute for Sustainable Development (Knowledge Management Programme)	In-kind	300,000
GEF Agency	UN Environment Economy Division (including Special Programme)	Cash	1,940,080
GEF Agency	UN Environment Economy Division (including Special Programme)	In-kind	3,761,875
Total Co-financing			**19,544,540**

D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee a) (b)[2]	Total (c)=a+b
UNEP	GEF TF	Global	Chemicals and Wastes	SAICM	8,190,000	778,050	8,968,050
(select)	(SELECT)		(select)	(select as applicable)			0
(select)	(SELECT)		(select)	(select as applicable)			0
Total Grant Resources					8,190,000	778,050	8,968,050

a) Refer to the Fee Policy for GEF Partner Agencies

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[5]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	*hectares*
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	*hectares*
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	*Number of freshwater basins*
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	*Percent of fisheries, by volume*
4. 4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	metric tons
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	*metric tons*
	Reduction of 1000 tons of Mercury	*metric tons*
	Phase-out of 303.44 tons of ODP (HCFC)	*ODP tons*
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	*Number of Countries: 40*
	Functional environmental information systems are established to support decision-making in at least 10 countries	*Number of Countries: 3*

B. F. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? NO

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/CBIT Trust Fund) in Annex D.

PART II: PROJECT JUSTIFICATION

[5] Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the Corporate Results Framework in the GEF-6 Programming Directions, will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

A.1. ***Project Description. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area[6] strategies, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.***

This full size project (FSP) is submitted as a package together with the recently submitted medium-sized project (MSP) titled "Global best practices on emerging policy issues of concern under SAICM (Highly Hazardous Pesticides, Environmentally Persistent Pharmaceutical Products [EPPPs] and Endocrine Disrupting Chemicals [EDCs])". **Together** these projects address the SAICM priority issues identified at ICCM4 and included in the GEF6 strategy.

1) Global environmental problems and/or adaptation problems

Global contaminants such as Persistent Organic Pollutants (POPs) or mercury are regulated by Multilateral Environmental Agreements (MEAs), namely the Stockholm and Minamata Conventions respectively. A number of additional 'Emerging Policy Issues' (EPIs) have been nominated for voluntary, cooperative risk reduction actions by countries through the Strategic Approach for International Chemicals Management (SAICM). In 2002, Governments identified the goal of "by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment"[7].

This project focuses on two EPIs: Lead in Paint; and Chemicals in Products. These EPIs present particular environmental and health problems which are outlined in the following paragraphs. The project also focuses on the need for knowledge management, information exchange and strategic planning to ensure concerted and coordinated action on all EPIs.

Lead in paint: Lead is a cumulative toxic element particularly harmful to young children and pregnant women. The cost of reduced cognitive potentials (measured through loss of IQ points) due to preventable childhood lead exposure in low and middle-income countries is estimated as $977 billion annually[8]. The Institute for Health Metrics and Evaluation (IHME) has estimated that in 2015 lead exposure accounted for 494,550 deaths due to long-term effects on health, with the highest burden in low and middle-income countries. IHME also estimated that lead exposure accounted for 12.4% of the global burden of idiopathic intellectual disability, 2.5% of the global burden of ischaemic heart disease and 2.4% of the global burden of stroke[9]. Lead in paint is a major source of childhood lead exposure, for example via contaminated dust in homes that can be inhaled or ingested (UNEP

[6] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving..

[7] Johannesburg Plan of Implementation, paragraph 23, adopted at the World Summit on Sustainable Development

[8] Attina and Trasande (2013) Economic Costs of Childhood Lead Exposure in Low- and Middle-Income Countries (http://ehp.niehs.nih.gov/1206424)

[9] Institute for Health Metrics and Evaluation (IHME). 2015 GBD Compare. Seattle, WA: IHME, University of Washington, (http://vizhub.healthdata.org/gbd-compare, accessed 26 Aug 16)

2010)[10]. Even relatively low levels of exposure to lead can cause serious and irreversible neurological damage, there is no safe level of lead exposure[11].

The cost of removing existing decorative lead paint from surfaces in homes, schools, and other buildings is significant. By contrast, the economic cost for eliminating the use of lead compounds in new decorative paints is low. Many manufacturers have successfully reformulated their paint products to avoid the intentional addition of lead[12]. However, the continued use of lead in paint around the world remains a significant source of human exposure. To protect human health laws, regulations, or enforceable standards are needed in every country to stop the manufacture and import and sale of lead containing paints and lead based pigments used in the manufacture of paints locally.

Chemicals in products: Chemicals that are mutagenic, carcinogenic, toxic to reproduction, endocrine disrupters (EDCs), neurotoxic, persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) may have serious and often irreversible effects on human health and the environment. Only a few of these chemicals are currently regulated or banned under the Stockholm and Minamata Conventions. These hazardous chemicals are found in consumer products all over the world, resulting in exposures by workers during manufacture[13], by consumers during use[14], by informal sectors involved in recycling and disposal with emphasis on women and children[15], and to the environment via wastewater and sewage sludges[16]. Toxic contaminants in products can also be a barrier to a shift towards a circular economy, as shown by the example of plastic from products containing brominated flame retardants being recycled into toys, resulting in high levels (up to 1194ppm) of the new POPs PBDE and/or HBCD being detected in some cases[17].

In 2017, the UN Environment Assembly proposed a science-based approach to prioritize harmful 'hard-hitting' pollutants. These chemicals of concern (CoC) are grouped into three categories according to the level of scientific evidence to justify interventions [18] (Table 1). The first category are globally recognized hazardous chemicals for which international multilateral environmental agreements exist, including POPs, mercury and ozone depleting substances. The second category are chemicals for which scientific evidence is well established, and includes heavy metals and SAICM EPIs including lead paint, perfluorinated compounds such as PFOS, and environmentally

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[10] UNEP 2010 Final review of scientific information on lead; http://www.unep.org/hazardoussubstances/Portals/9/Lead_Cadmium/docs/Interim_reviews/UNEP_GC26_INF_11_Add_1_Final_UNEP_Lead_review_and_apppendix_Dec_2010.pdf

[11] UN Environment (2017), Update on the Global Status of Lead in Paint: September 2017, accessed 5 January 2018: http://wedocs.unep.org/bitstream/handle/20.500.11822/22001/Glbbal%20Update%20Final%20Version%2011_Oct.pdf?sequence=1&isAllowed=y.

[12] Ibid

[13] https://chemicalchallenge.org/

[14] Kuang et al (2017) Brominated flame retardants in black plastic kitchen utensils: Concentrations and human exposure implications https://www.ncbi.nlm.nih.gov/pubmed/28847134

[15] Grant (2013) Health consequences of exposure to e-waste: a systematic review, The Lancet Global Health https://www.sciencedirect.com/science/article/pii/S2214109X13701013

[16] Molander (2012) Are chemicals in articles an obstacle for reaching environmental goals? — Missing links in EU chemical management https://www.ncbi.nlm.nih.gov/pubmed/22858536

[17] IPEN (2017) Toy or Toxic Waste? An analysis of 41 plastic toy and beauty products made from toxic recycling

[18] UNEA 3 – Executive Directors Report https://papersmart.unon.org/resolution/uploads/k1708347e.pdf p51, Types of action required per category of pollutant, based on scientific evidence

persistent pharmaceutical products (EPPP). Many of these chemicals are known to be highly problematic and have been banned or regulated in many countries/ regions, even where a global ban is not yet in place or proposed. The third category is chemicals for which scientific evidence is still emerging such as endocrine disrupting chemicals (EDCs). Chemicals in this third category may be restricted in more developed countries/regions and by pioneering global brands, but are not widely regulated on a global level. Existing restrictions are based on hazard-based lists such as the SIN list[19], the Clean Production Action's GreenScreen List Translator, US state lists of chemicals hazardous for children[20], the EU REACH annexes, the Endocrine Disruption Exchange list of potential EDC, the Green Science Policy Institute 'six classes' approach[21].

TABLE 1: CHEMICALS OF CONCERN WIDELY USED IN THE BUILDINGS, ELECTRONICS AND TOYS SECTORS

Sector	International pollution reduction action already agreed (MEAs)	Scientific evidence exists to advance action	Emerging scientific evidence
Buildings	POPs - Brominated flame retardants – plastics, foams; PFOS – paints, textiles; HBCD – insulation; short chain chlorinated paraffins (SCCP) – coatings, paints, cables Asbestos (ILO Asbestos Convention 1986) Mercury – lighting and switches	Lead, VOCs and vinyl chloride – coatings Other heavy metals – cadmium PFCs – paints, textiles	Methylene Diphenyl Diisocyanates
Electronics	POPs - Brominated flame retardants – plastics, foams ; PFOS – paints, textiles; HBCD – insulation; SCPP – coatings, paints, cables Mercury – switches	Additional RoHS restricted chemicals - cadmium, hexavalent chromium and flame retardants such as PBB Lead batteries PFCs – paints, textiles	Phthalates (DEHP, BBP, DBP, DIBP) Restricted substances on individual electronics company lists
Toys	POPs such as Brominated flame retardants from recycled plastic and PFOS in textile toys	Lead (jewellery, paint and batteries) Cadmium in batteries Perfluorinated chemicals – paints, textiles	EDC in plastics: Phthalates and Bisphenol A Polycyclic aromatic hydrocarbons (PAHs)

Substitution of these hazardous substances following global or national regulatory action is often difficult to implement as it is undermined by the available replacements often being CoC themselves. The easiest substitutions may be with chemically similar alternatives, however the similarity in function may be accompanied by similar hazard profiles. Such 'regrettable substitutions' may thus lead to comparable negative impacts or shift burden from one impact to another, requiring further action by manufacturers. Examples include the replacement of brominated flame retardants (classified as POPs), with organophosphate chemicals which are suspected

[19] http://chemsec.org/business-tool/sin-list/

[20] State of Vermont list of 60 chemicals of very high concern to children, http://www.healthvermont.gov/sites/default/files/documents/2016/11/Env_CDP_chemicals_high_concern_childrens_products_rule.pdf

[21] http://greensciencepolicy.org/topics/six-classes/ - highly fluorinated chemicals, antimicrobials, flame retardants, bisphenols and phthalates, organic solvents, and certain metals

carcinogens (TCIPP, TBOEP), neurotoxins (TCEP, TNBP) or endocrine disruptors (TPHP, TDCPP)[22]. These chemicals may also present a higher exposure risk as they are present as additives in building products or electronics and are not chemically bonded into the articles as in the case of the POPs originals. The alternatives are therefore more prone to leach out of the products making them more available to enter human and environmental endpoints. Many other examples are available including the substitution of the chemical bisphenol S with bisphenol A, or the use of perfluorinated alkyl substances (PFASs) instead of pefluorooctane sulfonic acid (PFOS)[23].

Knowledge management and strategic planning: In many developing countries, there is often a limited degree of mainstreaming, political commitment and coordination between initiatives to promote sound management of chemicals, particularly in the second and third categories of Table 1, i.e. chemicals for which no legally binding MEA exists. The recent independent evaluation of SAICM activities (2006-2015) concluded that "while the identification of EPIs are generally regarded as a major success of SAICM, it is apparent that the degree of progress was not uniform across the EPIs with no common means to measure progress."[24] Also according to the evaluation the slow progress in taking forward work on the EPIs is due in part to "institutional constraints facing The Inter-Organization Programme for the Sound Management of Chemicals (IOMC) organizations" that is, because SAICM is not their governing body.

Organizations and countries have nonetheless delivered numerous projects, initiatives and consultations on EPIs, and in the process have developed publications, guidance and scientific research (see Baseline section for Component 3). Currently however, this material is dispersed across many online and offline platforms and not readily accessible for national policymakers, intergovernmental organizations, civil society organizations and other prospective users of such information, including users of CoCs, consumers and the interested general public. All stakeholders who produce this material have a common interest in widely disseminating their knowledge, but are constrained by the lack of direct access to the diverse potential communities who need the information; and by a lack of communication expertise in how to target and develop outreach materials to serve the needs of the intended audience. This project proposes SAICM Secretariat facilitate this wide dissemination of the knowledge held by diverse stakeholders, by providing a platform and specialized communication support/expertise for all actors to share this wealth of resources and information.

The independent evaluation also points to the current under-capacity of SAICM that this project proposes to address. It notes the Secretariat's "inability to establish and make operational an information-clearing house (one of the mandated functions of the Secretariat)," and points to both "the lack of resources within the SAICM Secretariat but also due to capacity constraints of the government national focal points"[25].

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[22] Wei et al, 2015, Organophosphorus flame retardants and plasticizers: Sources, occurrence, toxicity and human exposure, Environmental Pollution 196

[23] Fantke (2015) From incremental to fundamental substitution in chemical alternatives assessment, Sustainable Chemistry and Pharmacy 1

[24] Nurick, R. 2018, Independent Evaluation of the Strategic Approach from 2006 – 2015, http://www.saicm.org/Beyond2020/IntersessionalProcess/SecondIntersessionalmeeting/tabid/6193/language/en-US/Default.aspx (accessed 30 March 2018)

[25] Ibid

Root causes and barriers that need to be addressed

SAICM's overall objective is the achievement of the sound management of chemicals throughout their life cycle so that by the year 2020, chemicals are produced and used in ways that minimize significant adverse impacts on the environment and human health. The independent evaluation of SAICM notes than much of SAICM's implementation "at the national level rests with the national focal points," expected to facilitate multi-sectoral engagement in SAICM[26]. However, the evaluation notes that the "SAICM model rests on one government national focal point per country, with at least 80% of them based within the ministries of environment, with few within ministries of health, agriculture and foreign affairs[27]." The need for SAICM to be implemented through a multi-stakeholder approach, within this context of limited stakeholder activity and engagement beyond ministries of environment is a key barrier to meeting the overall SAICM objective.

The following paragraphs outline specific root causes and barriers.

a. Specific root causes and barriers to phasing out lead in paint: The issue of lead in paint is not new but it qualified as an emerging issue under SAICM as no appropriate global action had been taken to address it. Two main barriers have identified:

- **Lack of regulations** to phase out lead in paints: The lack of capacity in developing countries to introduce and then enforce lead limits is both a specific root cause and barrier to phasing out lead in paint at the national level. Support is needed to overcome this lack of capacity to ensure effective regulation can be drafted.
- **Technical barriers** are faced by small and medium sized enterprises (SMEs) wishing to eliminate lead from paint. Even in countries with regulations on lead in paint there is evidence that small paint manufacturers struggle to comply as they have limited technical capacity or resources to formulate lead free paint. Studies on this issue by the University of Cincinnati compared Brazil, India, Armenia and Kazakhstan and found that paint manufactures responded quickly to legislation, formulating lead-free paint[28]. In Brazil for example, a 2009 study identified paints with lead concentrations above 36,000 ppm, and in 2014 these paints had lead concentrations <9 ppm. Unfortunately, though this improvement was not observed in paint brands from small paint manufacturers, which continue to produce paint above the legal limits. This mirrors results in India, where major Indian paint manufacturers decreased the lead concentrations in their paints with the help of NGOs. Similarly to Brazil, in India these improvements were almost completely absent from small manufacturers.

Specific root causes and barriers to managing Chemicals in Products: While chemicals are increasingly present in consumer products, action to identify and manage potential negative impacts has not kept pace with this increase. Four main barriers have been identified:

- Lack of **transparency in supply chains** results from limited uptake (particularly in developing and emerging regions) of available tools to monitor and report the presence of hazardous chemicals. The Chemicals in

[26] Ibid

[27] Ibid

[28] Clark, C. S., Kumar, A., Mohapatra, P., Rajankar, P., Nycz, Z., Hambartsumyan, A., Peng, H. (2014). Examination of lead concentrations in new decorative enamel paints in four countries with different histories of activity in lead paint regulation. Environmental Research, 132, 233-243. doi:10.1016/j.envres.2014.03.006

Products Programme has identified many tools and mechanisms to track and report on the presence of hazardous chemicals[29], but these are not systematically adopted or closely coordinated by companies within a sector, or enforced by regulators. Even when information is available within a particular value chain it is not widely available outside e.g. to regulators or consumers of products.

- Lack of **economic and market based incentives** for producers to track and manage hazardous chemicals in their products and supply chains. Overall, public procurement represents up to 30% of the GDP of a developing country[30] with electronics and building products both being sectors with heavy public procurement. Sustainable Public Procurement and sustainable finance policies, standards and experiences are being developed in both sectors but focus more on other sustainability aspects (energy, water, resource use) and inadequately cover hazardous chemical considerations and restrictions. In banking, which is generally the dominant sector within the financial systems of developing countries, the engagement with small and medium material manufacturers and suppliers is through vendor finance and credit facilities. Green or non-toxic materials tend to be more niche products and thus lack economies of scale for lenders to treat them differently.
- Lack of **regulatory drivers** for increased transparency: There is a lack of regulations globally requiring disclosure or phase-out of hazardous chemicals in products, apart from a very few chemicals e.g. POPs or heavy metals. Such regulations, where they do exist, are highlighted by companies as being one of the main drivers to increase reporting and tracking of chemicals in supply chains[31].
- Lack of **quantitative sustainability assessment** of hazardous chemicals and their alternatives, leading to 'regrettable substitutions'. Despite this, currently quantitative frameworks are not used at all in identifying and evaluating alternatives to hazardous chemicals. A review of different frameworks for assessing impacts concluded that "*Many alternatives assessment practitioners, particularly those in smaller firms, do not have significant technical or financial resources to conduct detailed quantitative assessments (e.g., of exposure or life-cycle impacts). There is a need for approaches that are thoughtful, yet time- and resource-efficient, as well as for technical and research support for those conducting assessments.*"[32]

Specific root causes and barriers to stakeholder engagement and knowledge management: The SAICM Secretariat is mandated to provide advice to countries on implementation of the Strategic Approach through an information clearinghouse[33]. Currently, the SAICM Secretariat facilitates information sharing, through its website, regional meetings and globally during ICCM, Open Ended Working Groups and other inter-sessional events. However, the relevant documents containing a wealth of relevant data and experience remain hidden in workshop reports and are not extracted and compiled in an easy-to-access open data format. The recent independent evaluation notes Secretariat's "inability to establish and make operational an information-clearing house (one of the mandated functions of the Secretariat)," and points to lack of resource as a specific barrier to this. A global mechanism is

[29] CiP webpage http://drustage.unep.org/chemicalsandwaste/what-we-do/science-and-risk/chemicals-products/cip-information-systems/cip-information-system

[30] United Nations Environment Programme (2017). *Global Review of Sustainable Public Procurement*. Available at:http://www.scpclearinghouse.org/resource/2017-global-review-sustainable-public-procurement

[31] The Business Case for Knowing Chemicals in Products and Supply Chains (UNEP 2014) - http://drustage.unep.org/chemicalsandwaste/sites/unep.org.chemicalsandwaste/files/publications/UNEP%20CiP%20Business%20case_En.pdf

[32] Alternatives assessment frameworks: research needs for the informed substitution of hazardous chemicals, 2016. https://ehp.niehs.nih.gov/1409581/

[33] Overall Orientation and Guidance, para 65, http://www.saicm.org/Portals/12/Documents/OOG%20document%20English.pdf

needed to catalogue, store and distribute knowledge and information so providing a comprehensive overview of stakeholders, activities and studies. Currently no global coordinating platform exists to allow the outcomes of knowledge exchange instruments to be shared, nor long-term engagement of stakeholders to be fostered. Three main barriers have been identified:

- Lack of **coordinated and meaningful participation of different stakeholders** in the SAICM and beyond 2020 process. While SAICM is a multi-stakeholder approach, it has had more success in engaging certain stakeholders than others on EPIs, namely environment sector and government representatives. Fewer than 15% of participants in ICCM4 and OEWG2 were from the science and the academic community, compared with 55% coming from government[34].
- Lack of **context-specific data and high-quality information relating chemicals management and EPIs** to different sector agendas, including specific policy and product sectors, to allow stakeholders to make decisions and take appropriate action on chemical hazards, exposure and management.
- Lack of **centralised platform, or space, for sustained, long-term engagement and connectivity of stakeholders** on knowledge related to chemicals management. There is currently no space or forum for stakeholders to share knowledge, experiences, expertise, research and information on specific EPIs. This hampers progress on taking action on EPIs, that is either through individual governments, or in concert, as part of larger initiatives.

2) Baseline scenario

Lead in paint: In 2009 the Second International Conference on Chemicals Management (ICCM2), through resolution II/4B, endorsed a global partnership to promote the phasing out of lead in paints and invites all stakeholders to become partnership members. The resolution requested the partnership to adopt its terms of reference using the draft terms of reference presented to ICCM2 and to develop a business plan with milestones for progress in relation to: awareness raising on the toxicity of lead and on alternatives, guidance and assistance to identify potential lead exposure, assistance to industry, prevention programmes to reduce exposure and promotion of national regulatory efforts. The ICCM further invited UNEP and WHO, within their respective mandates, to serve as the partnership's Secretariat.

The Global Alliance to Eliminate Lead Paint (the Alliance herein) is a voluntary partnership formed by UN Environment and the World Health Organization to prevent exposure to lead, while promoting the phase-out of paints containing lead. The Lead paint Alliance is guided by an advisory group chaired by the United States of America through the Environmental Protection Agency (US EPA) and consisting of Government representatives from Colombia, Republic of Moldova, Kenya, Thailand, IPEN International POPs Elimination Network (IPEN), Health and Environmental Alliance (HEAL), International Paint and Print Ink Council (IPPIC), AkzoNobel (a paint company), and United Nations Industrial Development Organization (UNIDO).

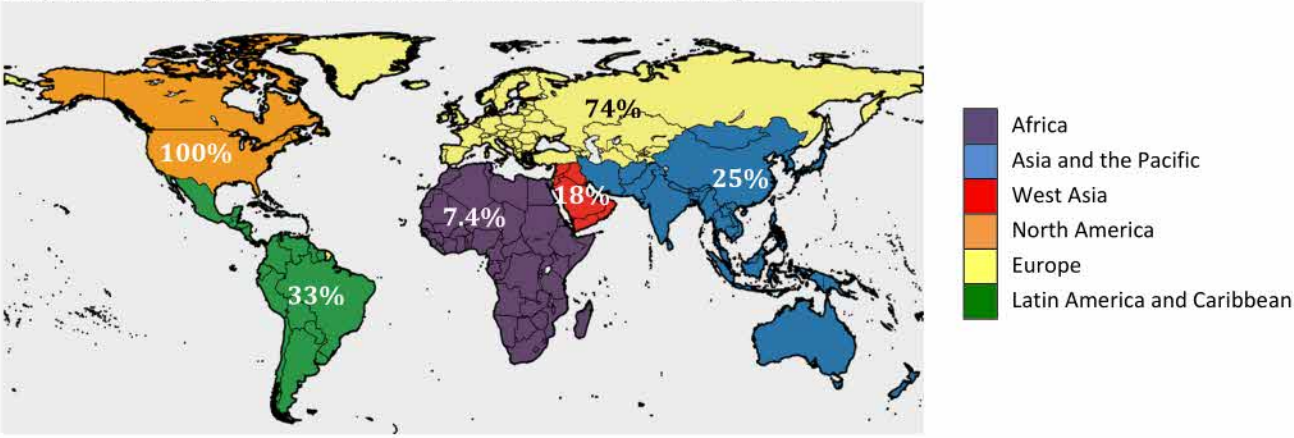
The overall aim of the Alliance is to prevent children's exposure to paint containing lead and to minimize occupational exposure to lead paint. The goal is to phase out the manufacture and sale of lead paint and to

[34] Lists of participants from meetings including http://saicm.org/About/ICCM/ICCM4/tabid/5464/language/en-US/Default.aspx http://saicm.org/Portals/12/Documents/meetings/ICCM4/ICCM4%20Side%20Events%20Schedule.pdf http://saicm.org/Portals/12/documents/meetings/OEWG1/inf/OEWG1%20INF19%20_LOP.pdf

eliminate the lead poisoning risks. The Alliance's specific objectives include to: raise the awareness of government authorities and regulators, the private sector, manufacturers, consumers, workers, trade unions and health-care providers about the toxicity of lead in paints and the availability of technically superior and safer alternatives; catalyse the design and implementation of appropriate prevention-based programmes to reduce and eliminate risks from the use of lead in paints and products coated with lead paints; help identify paint manufacturers and formulators that continue to produce and market paints containing lead so as to foster actions to phase out lead from their products; promote the establishment of appropriate national regulatory frameworks to stop the manufacture, import, export, sale and use of lead paints and products coated with lead paints. The Alliance's aim is that all countries will have legislation to ban lead in paint by 2020[35].

According to the Alliance **68 countries** have banned lead in paint[36]. However, as many as 100 low and middle-income countries do not yet have legal limits on lead in paint, and some countries have limits that are too lax to protect public health, or have gaps in enforcement of lead paint laws. The following map provides a visual representation of lead in paint regulations across regions. Progress in developing new lead paint legislation has been slow, with only 14 countries added between 2014-2017.

Map 1: Percentage of countries in regions with Lead Paint legislation



Data Source: World Health Organization: Regulations and controls on lead paint, September 2017, Created 28 September 2017

The 2017-2018 Action Plan sets out activities to assist governments in enacting legal limits on lead in paint, activities to support industry in voluntarily eliminating lead in paint and general awareness raising activities on the dangers of lead in paint. The Lead Paint Alliance Action Plan for 2017-18 highlights the need for near-term efforts, by national governments around the world, to achieve the phase-out of the manufacture and sale of paints containing lead[37]. New laws and regulations should establish legal limits on the lead content of these paints, by

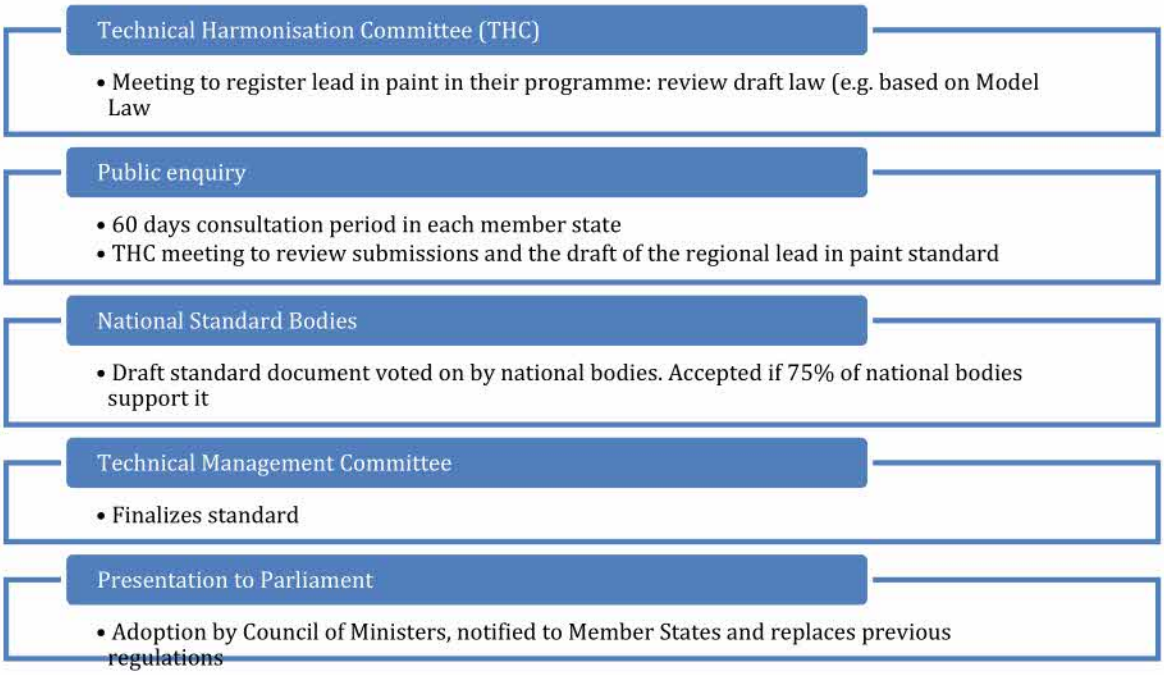
[35] Lead Paint Alliance Business Plan (2012), Accessed, 5 January 2018: http://www.who.int/ipcs/assessment/public_health/business_plan.pdf

[36] UN Environment (2017), Update on the Global Status of Lead in Paint: September 2017, accessed 5 Janury 2018: http://wedocs.unep.org/bitstream/handle/20.500.11822/22001/Glbbal%20Update%20Final%20Version%2011_Oct.pdf?sequence=1&isAllowed=y. (Update notes 67, but Cameroon have since regulated, taking the total to 68).

[37] Lead Paint Alliance 2017-2019, Action Plan. Accessed, 4 January 2018 https://wedocs.unep.org/bitstream/handle/20.500.11822/20954/Draft_LPA_Action_Plan_2017-18_Final.pdf?sequence=1&isAllowed=y

either banning lead additives or severely limiting the total amount of lead content. In countries where legal limits are not currently in place such actions will help prevent new exposures to lead from paint, especially for children in homes and schools. The Action Plan focuses on encouraging: governments in countries where legal limits are not currently in place to establish and enforce national legal limits on lead in paints to achieve the phase-out of the manufacture and sale of paints containing lead; and industry activities to voluntarily stop the manufacture and sale of lead paints in countries where legal limits are not currently in place. The Alliance will also work to increase awareness of the health and environmental risks posed by lead paint, to help prompt actions by governments and manufacturers to stop the production and sale of lead paints; and focus on increasing and diversifying the number of Alliance partners, and increase opportunities for partners to engage.

Regional standards are an important pathway for development of national legislation and to control sub-regional trade. The ECOWAS Commission was mandated by its Member States at the 16th African Ministerial Conference on the Environment (AMCEN) meeting to develop such a standard on lead in paint in 2017. The steps/ activities towards this regional standard are presented in the flowchart below:



As part of efforts to accelerate progress on lead paint phase out, in December 2017, the third session of the **UN Environment Assembly** of the UN Environment Programme adopted a resolution on lead paint and promoting the environmentally sustainable management of lead-acid batteries (UNEP/EA.3/L.24). The resolution commits governments to reducing exposure to lead through eliminating lead paint. Specifically, it encourages governments yet to do so, to develop, adopt and implement legislation on lead paint. It mandates the UN Environment Executive Director to work with WHO to assist countries by providing tools, capacity building, and assistance in developing national legislation.

In May 2017, the Seventieth **World Health Assembly** approved a Chemicals Road Map[38] to enhance health sector engagement in SAICM towards the 2020 goal and beyond. The road map outlines four action areas: risk reduction; knowledge and evidence; institutional capacity; and, leadership and coordination. On lead paint, the Road Map commits to finalizing guidelines on the prevention and management of lead poisoning; implementing the guidelines; and phasing out paints containing lead by 2020 as per the objectives of the Global Alliance to Eliminate Lead Paint. WHO is currently developing guidelines for managing lead exposure, and guidelines for the prevention of lead exposure. These guidelines are being developed through a rigorous process of systematic evidence review and quality assessment, in accordance with WHO policies. Completion of the prevention guidelines is anticipated towards the end of 2019, following which WHO will undertake implementation activities in countries including training and workshops. The prevention guidelines will recommend a range of interventions including eliminating non-essential uses of lead in consumer products, including paint, through regulations and policies, and have strong links with the work of this project.

The preparatory phase of this project involved extensive baselining activities. Consultations were undertaken directly with countries lacking lead in paint legislation, by UN Environment Regional Offices, to ascertain progress on lead in paint activities. Alliance partners WHO, IPEN, and US EPA also provided information on countries they have been engaged with. Regional Economic Commissions were also consulted. This desktop review and primary data collection exercise resulted in countries falling into several distinct categories, that serve as a useful framework for analysing the evolution of lead in paint regulation. That is, the process of a country moving from a lack of legally protective limits on lead in paint, to legally binding regulation, and is outlined in the flowchart below. Countries were categorized according to this framework. This categorization is presented below as Table 2.

[38] WHO (2017), Chemicals Road Map. Accessed: 15 January 2018 http://www.who.int/ipcs/saicm/ChemicalsRoadMapbrochure_en.pdf?ua=1

Table 2: Framework of evolution of Lead in Paint legislation at national level, and classification of target countries

UN E Region	Reg. Collab	Growing national concerns	Initiated work	Law assessment/ first steps	Non-Protective Legislation	LP legislation in process or being drafted.
Latin America and the Caribbean	CARICOM	Barbados Suriname Bahamas Belize Grenada Haiti Saint Kitts and Nevis Saint Vincent and Grenadines	Jamaica	Antigua and Barbuda Saint Lucia		
	Andean Region		Bolivia	Peru Ecuador		Colombia Brazil
		Honduras	Guatemala	El Salvador		Paraguay?
Asia-Pacific	ASEAN		Vietnam	Malaysia Indonesia		Cambodia Lao People' DR
		Fiji Palau	Mongolia Bangladesh	Pakistan	China	
Africa	ECOWAS	Liberia Burkina Faso Niger Sierra Leone Cabo verde Guinea-Bissau Mali	Gambia Benin Ghana Guinea Nigeria Senegal Togo	Cote d'ivoire		
	SADC	Madagascar	Mozambique D. Republic of the Congo Zambia			Swaziland Mauritius
	EAC		Burundi Rwanda South Sudan Uganda			
			Sudan Tunisia	Egypt	Morocco	Ethiopia Gabon
West Asia				Lebanon	Jordan	
Europe	EAEU				Armenia Belarus Kazakhstan Kyrgyzstan	
		Uzbekistan	Azerbaijan Georgia Tajikistan	Moldova Ukraine Israel		Bosnia and Herzegovina
Total n= 76		20	25	14	7	10

To provide assistance to countries in enacting regulations on lead in paint by 2020, in 2017 the Alliance launched a **Model Law and Guidance for Regulating Lead Paint** (the "Model Law"). This serves as a reference for countries

to develop legislation suited to national or regional regulatory structures and legal systems[39]. It recommends a **concentration limit of 90ppm of total lead** and proposes: a delivery approach for project partners to assist in building a sustaining momentum among stakeholders; serving as working-level contacts; and coordinating with technical and legal experts. It also outlines the need for legal experts to: evaluate national regulatory structures to identify pathways for mandatory phase out of lead paint; support drafting of proposed lead phase-out legal text or amendments to existing legislation in partnership with local actors (to ensure country ownership); training national officials and stakeholders; and raising awareness.

The Alliance has an **on-line Toolkit for Establishing Laws to Control the Use of Lead in Paint[40]**, and a **Model Law and Guidance on Regulating Lead Paint[41]**. The materials form the basis of training and outreach to governments and stakeholders to promote lead paint laws.

As part of the project preparation process, UN Environment worked closely with **project partners** (Alliance members) who are already providing support to countries working towards regulating lead in paint. UN Environment and consulted extensively with **legal specialists,** specifically the Rule of Law Initiative (ROLI), of the American Bar Association, an international development program that promotes justice, economic opportunity and human dignity through the rule of law. The initiative works in more than 100 countries to strengthen legal institutions, to support legal professionals, to foster respect for human rights and to advance public understanding of the law and of citizen rights. ROLI's in-country partners include government ministries, judges, lawyers, bar associations, law schools, court administrators, legislatures and civil society organizations.

In terms of **technical barriers**, there are very limited efforts to provide technical guidance for the replacement of lead additives (mainly driers and pigments). In 2015, IPEN commissioned two reports by Safinah Ltd that provide technical guidance to small paint manufacturers that may not have access to technical experts for reformulation[42]; while in 2016, UNIDO's Innovative Approaches to the Sound Management of Chemicals and Chemical Waste (IAMC) has produced a technical guidance on paints and varnishes which includes lead[43]. The documents detail potential problems reformulating paint, provide a list of raw material manufacturers and industry feedback on lead pigment replacement. Both documents target SMEs that would otherwise not have access to the technical information required to reformulate their paints. Implementing these technical guidelines will be critical to the effectiveness of regulations limiting lead in paint. Although these documents exist there is no evidence of

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[39] Model Law, accessed 5 January 2018:
http://wedocs.unep.org/bitstream/handle/20.500.11822/21843/Lead%20Paint%20Model%20Law%20and%20Guidance%20FINAL10.04.17.pdf?sequence=1&isAllowed=y

[40] UNEP, Toolkit for Establishing Laws to Control the Use of Lead in Paint:
http://web.unep.org/chemicalsandwaste/noleadinpaint/toolkit (Accessed 23, January 2018)

[41] UNEP 2017, Model Law and Guidance for Regulating Lead Paint:
https://wedocs.unep.org/bitstream/handle/20.500.11822/22417/Model_Law_Guidance_%20Lead_Paint.pdf?sequence=1&isAllowed=y (accessed 23 January, 2018)

[42] Lead drier replacement in solvent based alkyd decorative paints (pp. 1-24, Tech. No. 1049CIPE002R). (31 July 2015). England: Safinah Ltd. http://www.safinah.co.uk/wp-content/uploads/2017/02/Lead-drier-replacement-in-solvent-based-alkyd-decorative-paints.pdf

[43] UNIDO, 2016, Innovative Approaches to the Sound Management of Chemicals and Chemical Waste (IAMC) – Paints and Varnishes toolkit. Accessed on 6 February 2018:
https://iamc-toolkit.org/sites/default/files/G2_Draft_PaintVarnishes_FINAL%20DRAFT_16_08_2016-MM.pdf

widespread dissemination or take up by SMEs, and as such they have not yet served to assist small companies in overcoming the technical barriers.

The IAMC technical guidance was developed by UNIDO to provide producers of chemicals, formulators and industrial users of chemical products with approaches and specific technical solutions to chemicals and chemical waste management. The manual was developed after UNIDO completed work in Colombia, Egypt, El Salvador, Morocco and Peru on the identification and implementation of innovative alternatives and solutions in the following subsectors: industries in the paint formulation, paint application, textile finishing and polymers domains. The manual aims to trigger innovative ideas, providing cost-effective innovative solutions for companies in developing countries and subsectors to implement environmentally sound management of chemicals and chemical waste with high impact. The manual includes a section on eliminating lead paint. It recommends strengthening technical assistance for industries to help them to eliminate lead paint step-by-step from their production processes. It also promotes collaboration between industry and governments to come up with guidelines on suitable substitutes for the lead compounds used in paint manufacturing.

Recognizing the need to address both **capacity constraints** and **technical barriers** (outlined in the barriers and root causes above) to removing lead in paint, and the need to help SMEs to ensure efficient reformulation of paint, UN Environment also consulted extensively with National Cleaner Production Centres (NCPCs) and IPEN during the project preparation phase. NCPCs are mandated to raise awareness of the benefits and advantages of Resource Efficient and Cleaner Production (RECP) network**;** demonstrate the environmental, financial and social benefits of RECP through in-plant assessments and demonstration projects; help obtain financing for RECP; provide policy advice to national and local governments; and disseminate technical information.

IPEN has undertaken significant lead in paint reduction activities in Asia and Africa. The NCPC in Serbia was noted to have significant expertise in paint reformulation, and provided technical support and contribution to project development.

The Regional Activity Centre for Sustainable Consumption and Production (www.cprac.org) is the Regional Centre of the Stockholm and Barcelona Convention in Spain. Within the SwitchMed Programme (www.switchmed.eu/en) they produced a publication on how to prevent the use of 20 toxic chemicals in products in the Mediterranean region. Out of these 20 case studies, a small number of pilot projects was selected for countries of the Middle East/North Africa region. Substitution of Lead in Paint in Tunisia was selected as the pilot project, and a similar approach will be adopted to the BAT/BEP demonstration projects planned by the GEF project.

Jordan, Peru, Ecuador, Colombia, China, Indonesia and Nigeria have paint industries still using lead and are countries moving to regulate lead in paint. A brief overview of the baseline in each of these countries is included in the following paragraphs.

Jordan: Jordan has nonprotective legislation allowing a maximum of 600ppm lead in paint. The government is planning on introducing a more stringent limit. However, significant barriers exist, as paint manufactures are struggling to overcome technical barriers are concerned about cost increases and losing market share due to cheaper imported paint (which also contains lead) and are in turn lobbying the Government of Jordan. According to baseline information provided by NCPC Jordan there are 86 companies in Jordan manufacturing paint and several of these are microenterprises with less than 10 employees. Public awareness is also very low. One barrier

is the import of cheap lead paints from neighbouring countries such as Lebanon and Egypt, which limits the ability of national companies to adopt even slightly increased cost formulation options and alternative raw materials. A 2012 IPEN study collected samples from 16 companies, and found 18% had lead concentrations >90ppm[44].

Peru: According to baselining activities by NCPC Peru, there are over 300 companies either producing or importing paint in Peru. Of these, a significant portion are very small manufacturers. In terms of technical barriers, faced by manufacturers, NCPC identified: limited know how of lead free alternatives; limited suppliers; high prices for alternative raw material for industry paint; and low awareness of end-users. A 2009 IPEN study tested 10 solvent-based paints from two paint companies. The results indicated 90% of paints had lead concentrations greater than 90 ppm, and 40% of paints had concentrations greater than 10,000 ppm[45].

While Peru lacks legislation on lead in paint, it does have legislation on lead in toys and furniture, which the NCPC has been closely involved in. Since 2013 to date, over 8450 puzzles, toys and stationeries containing lead have been seized. The Government of Peru has expressed interest in regulating lead in paint, and has attended a meeting of the Alliance.

Colombia: NCPC Colombia (CNPMLTA) has extensive experience working on chemicals and specifically paint. It has executed several projects on the innovation and development of new products with Colombian companies, including resins and paints, and the elimination of heavy metals. CNPMLTA has established contact with small and medium enterprises of paint sector including Pinturas Azteca, Tintas y Pinturas Especiales, PINTUCO and CORONA.

According to baselining activities completed by NCPC Colombia, there are 79 large companies producing paint in the country and approximately 80 SMEs. NCPC Colombia also consulted SMEs and several have expressed interest in participating in the project. Although specific information on lead in paints is not available, according to NCPC Colombia's baselining activities over 900 tons of waste contaminated with lead was reported by paint companies in 2010, indicating significant use of lead in paint manufacture. In 2016, IPEN analyzed 39 solvent-based paints from 11 brands. The analysis found that 64% of paints samples had lead concentrations greater than 600 ppm, with 59% of paints with lead concentrations greater than 10,000 ppm[46]. While Colombia lacks legislation regulating lead in paint, it has regulated lead content in toys. The Government of Colombia has expressed interest in receiving technical support through the project to regulate lead in paint.

China: NCPC China (CNCPC) was established in 1994, and focuses on policy advice to national and local governments, developing innovative cleaner production techniques, and producing sector-based cleaner production guidelines. According to national baselining completed by NCPC China[47], there more than 2,100 paint companies producing paint in China. Key paint production hot spots were identified as Guangdong, Shanghai, Jiangsu, Hunan and Shandong provinces. At present, lead-based paint is widely used in furniture, toys and school supplies in China. According to an IPEN study which analysed 141 paints, 34% of paints contained lead

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[44] IPEN 2017, Global Lead Paint Elimination Report. Accessed 9 February 2018. http://ipen.org/sites/default/files/documents/ipen-global-lead-report-2017-v1_2-en.pdf

[45] Ibid

[46] Ibid

[47] Market Analysis Report of Promoting Elimination of the Use of Lead Paints in China, Solid Waste and Chemicals Management Centre, Ministry of Environmental Protection of China (2017)

concentrations above 10,000 ppm[48]. The Government of China has enacted regulation addressing soluble lead content in paint for various uses, as opposed to total lead. The **soluble** lead content in all paints is limited to between 90mg/kg (90 ppm) and 1000mg/kg (1000 ppm), depending on the use of the paint. This is considered to be unprotective, and in need of revision.

Ecuador: Ecuador is a producer and exporter of paint. The country produces over 58,000 tons per year, with four countries holding 95% of the market share. These companies have been consulted on the project, and have confirmed their participation in the project through submission of co-finance letters. While no protective regulation exists for lead paint, lead content in toys is regulated by the technical standard NTE INEN-ISO 8124-3, Safety of Toys. A paint study completed by IPEN in 2009 found 70% of paints samples had lead concentrations greater than 90 ppm[49].

Indonesia: In 2013 and 2015, IPEN completed paint analysis as part of the IPEN Asia Lead Paint Elimination Project[50]. According to the report, in 2012 Indonesia's paint market equated to US$ 962 million), a 10% increase on the previous year. Two paint companies, PT. Nipsea Paint and Chemicals and ICI Paints Indonesia, Nippon, and Avian have over 62% of the market share. The remainder of the paint market is held by eight smaller manufacturers, and 10% of the market is held by small firms. The IPEN project analysed paint from 52 manufacturers. A total of 83% had lead concentrations greater than 90ppm, with 78% having concentrations greater than 600 ppm. Most concerningly, 41% of paints had a lead concentration greater than 10,000ppm. All paints from market leaders Avian, Nippon, Danapaint, Kansai, RJ London's paints had lead concentrations between 600ppm and 10,000ppm[51]. According to the report, alternatives supplier Clariant is active and expanding in Indonesia, meaning lead free pigments are available.

Nigeria: In 2016 IPEN's Global Lead Elimination Campaign, funded by the Swedish Government, investigated lead content in decorative paints in Nigeria. The local partner SRADev Nigeria purchased 54 cans of solvent-based paint intended for home use from stores in Lagos, Nigeria, sampling 18 different brands produced by 16 manufacturers[52]. The study found that 74% of paints sampled to have lead concentrations greater than 90 ppm. In 54% lead concentrations were greater than 10,000 ppm[53]. The highest lead concentration detected was 160,000 ppm in a yellow Finecoat Paint sold for home use[54]. Nigeria currently has no regulation in place limiting the amount of lead in paint for household and decorative use.

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[48] IPEN 2017, Soluble and Total Lead Content of Solvent Based Paint for Home Use in China. Accessed 6 February 2018. http://ipen.org/sites/default/files/documents/ipen-china-lead-report-v1_3-en.pdf

[49] IPEN 2017, Global Lead Paint Elimination Report. Accessed 9 February 2018. http://ipen.org/sites/default/files/documents/ipen-global-lead-report-2017-v1_2-en.pdf

[50] IPEN 2016, Lead n Indonesia's New Enamel Household Paints. Accessed 9 February 2018 http://ipen.org/sites/default/files/documents/National%20Report%20Lead%20in%20Indonesia%27s%20New%20Enamel%20Household%20Paints.pdf

[51] Ibid

[52] IPEN 2017, Lead in Solvent Based Paints for Home Use in Nigeria. Accessed 22 February 2018. http://ipen.org/sites/default/files/documents/ipen-nigeria-lead-report-v1_1-en.pdf

[53] Ibid

[54] Ibid

Chemicals in Products: Baseline initiatives cover all three of the main barriers to managing the risks of chemicals in products, namely promoting transparency in supply chains; promoting wider adoption of these and chemical management / risk reduction decisions, including substitution based on scientific assessment. Sector-specific baseline information is given in the following section.

Life cycle assessment (LCA) is a standardized methodology to assess the environmental impacts connected with the lifecycle of products, processes and activities. One widely used model to assess toxicity of chemicals within LCA is USEtox, the UNEP/Society of Environmental Toxicology and Chemistry (SETAC) scientific consensus model for characterising human and ecotoxicological impacts of chemical emissions in life cycle assessment[55]. This model is the result of a multi-year consensus building process to provide a science-based method and global guidance for assessing fate, exposure and effects of chemical emissions, which is now formally endorsed by the Life Cycle Initiative[56] and widely accepted and used as the default tool for toxicity/ecotoxicity in a number of LCA impact methods (including the European Commission's International Reference Life Cycle Data System[57], the US EPA Tool for Reduction and Assessment of Chemicals and Other Environmental Impacts[58], and the Life-cycle Impact Assessment (LCIA) Method based on Endpoint modelling (LIME) from the National Institute of Advanced Industrial Science and Technology[59]). The model proposes characterization factors for human toxicity and freshwater ecotoxicity, which allow users to quantitatively calculate and compare the potential impacts associated with exposure to chemicals of concern. While the model has achieved a broad consensus on the characterization factors it includes, these focus on 'far-field' exposure routes (e.g. indirect exposure pathways such as via consumption of food with residues) and do not adequately represent "near-field" or direct exposure routes such as occupational exposure or by consumers or hand-mouth behaviour by children in respect of toys.

Under the Life Cycle Initiative project on Global Guidance on Life Cycle Impact Assessment Indicators and Methods, a prototype has been developed for four sectors (buildings, food contact packaging, personal care products and detergents) which includes parameters for calculating near-field exposures and pathways, notably indoor air quality, volatization and dermal exposure. These prototypes are still in development phase, and while the parameters and some data sources and values have been added, these require validation by manufacturers and governments. While most priority CoC are already included in the model (with emission/ exposure / impact factors from scientific literature available for quantitative calculations), there is still considerable scope for producers of alternative materials to provide equivalent data on alternatives to allow comparative calculation of potential impact. The consensus approach of USEtox would also require thorough peer review and validation for these prototype extensions to be fully incorporated into the model.

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[55] UNEP/SETAC scientific consensus model for characterizing human toxicological and ecotoxicological impacts of chemical emissions in life cycle assessment (2017) http://doi.org/10.11581/DTU:00000011

[56] The Life Cycle Initiative (www.lifecycleinitiative.org) is a public-private, multi-stakeholder partnership hosted by UN Environment since 2002, with the mission to bringing Life Cycle Thinking to the mind-sets of decision makers with the practical knowledge and tools to enhance the sustainability of their decisions.

[57] https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/international-reference-life-cycle-data-system-ilcd-handbook-general-guide-life-cycle

[58] https://www.epa.gov/chemical-research/tool-reduction-and-assessment-chemicals-and-other-environmental-impacts-traci

[59] https://www.aist-riss.jp/old/lca/cie/activity/project/lime/index.html

UN Environment's **Finance Initiative** works with investment and financiers to promote sustainable development. The Environmental and Social Risk Analysis Training Programme seeks to support banks in establishing and implementing effective environmental and social risk management systems, for example based on ecolabels such as the energy*. Some specific instruments relevant to pollution prevention include voluntary and mandatory pollution liability insurance, or the innovative "green supply chain finance[60]" which allows buyers and suppliers in supply chains to improve their working capital by allowing a supplier to sell its invoices to a bank at a discount as soon as they are approved by the buyer. That allows the buyer to pay later and the supplier to secure its money earlier.

Retailer and foreign trade initiatives, largely in developing countries, use consumer power to leverage safer chemicals policies in supply chains. In the US, the 2017 "*Who's Minding the Store? — A Report Card on Retailer Actions to Eliminate Toxic Chemicals*" is the second annual evaluation of the safer chemicals programs of thirty of the largest retailers in the United States[61]. The Mind the Store campaign of Safer Chemicals, Healthy Families has developed a comprehensive check list of retailers across different product sectors. Factories in the toy sector are mainly in China, while textiles in India and Bangladesh.

During the PPG phase, value chain actors in the three sectors were consulted to produce a screening of **supply chain transparency and risk reduction tools and initiatives** that already exist and could be effectively adapted and/or scaled up to deliver risk reduction from chemicals in products[62]. The priority tools are presented in Table 3, and were discussed at a stakeholder consultation meeting held during the PPG. The final project design reflects the prioritized approaches that were agreed by the participants at that workshop.

Table 3: Prioritization of tools and initiatives that address, or have a high potential to address, CiP

Tools and initiatives	Relevance to address key intervention points	Creation of an enabling environment/ Potential for knock-on effects	Potential for use in LMIC	Life-cycle perspective	Building on established tools and success stories
Sustainable Public procurement					
Eco-innovation					
Chemical Leasing					
Building certificates					
Cleaner Production					
Usetox					
Ecolabels					
National Multi-Stakeholder Platform on Voluntary Sustainability Standards					
Draft Guidelines for Providing Product Sustainability Information					
Chemical Footprint Project Assessment Tool					
Cradle to Cradle Certified Product Standard					
BizNGO Guide to Safer Chemicals					
The SIN (Substitute it Now!) List					
BOMCheck					
chemSHERPA					
Electronic Product Environmental Assessment Tool (EPEAT®)					
Restriction lists					

[60] http://lexicon.ft.com/Term?term=supply-chain-finance
[61] Safer Chemicals, Healthy Families (2017) http://retailerreportcard.com/wp-content/uploads/2017/11/retailerreportcard.com_2017_factsheet.pdf
[62] Issppro (2017) Chemicals in Products: Strengthening Action Workshop – Final Report

Tools and initiatives	Relevance to address key intervention points	Creation of an enabling environment/ Potential for knock-on effects	Potential for use in LMIC	Life-cycle perspective	Building on established tools and success stories
GreenScreen List Translator					
IMDS					
Pharos					
Chemical Management Database					

Colour coding (green = very suitable, orange = suitable, red = not particularly suitable).

Building products: UN Environment's Chemicals and Health Branch (CHB) Programme of Work includes a recently approved project on 'Advancing Sustainable Chemistry in Production, Products and Value Chains', piloting work in the building sector, with baseline studies to identify and assess chemicals of concern and potential safe alternatives, regulatory frameworks, existing guidance and initiatives, and intervention opportunities. It also aims to identify and establish partnerships in the sector, including with sustainable chemistry front-runner companies.

The World Green Building Council and its 73 national member councils advocate for green buildings, covering all impacts from climate, waste, energy, and including a focus on Indoor Air Quality and use of non-toxic materials[63]. In practice, most of the green building tools, such as rating systems, focus heavily on energy/climate and waste issues, for example the Green Star ecolabel. Emphasis on hazardous substances is often limited to volatile organic compounds (VOCs) and insufficient consideration of wider hazardous chemicals, taking into account the building construction phase, use phase, and demolition phase.

The Global Alliance for Buildings and Construction (GABC) is an initiative launched at the UN Framework on Climate Change (UNFCCC) COP21, as part of the Lima Paris Action Agenda. It aims to mobilise all stakeholders, including member states and non-state actors from the Buildings and Construction sector to scale up climate actions in the sector. The GABC focuses on the achievement of the low-carbon and energy transition through fostering the development of appropriate policies for sustainable, energy efficient buildings, which allows a concrete value-chain transformation of the sector. There is a focus on indoor air pollution, to which the chemicals are highly relevant, but to date there has been limited action on this part of the initiative.

The 10YFP Programme on Sustainable Buildings and Construction is a multi-stakeholder programme, led by Finnish ministry of Environment, and co-lead by RMIT university and UN Environment[64]. It has the following four priorities: enabling framework, sustainable housing, sustainability in the supply chain, and reducing climate impacts. The programme is implementation focused, on resource efficiency and circular economy. It would be useful to mainstream findings on chemicals of concern of the project into the Programme, and reach to its over 45 members. A working group co-led by Action Sustainability and the IISD will collect experiences and information on the topic of enhanced sustainability in infrastructures and construction through procurement.

During the PPG, a survey of the Resource Efficient and Cleaner Production Network (RECPnet) members from several countries mentioned that buildings and construction is important to the policies of their countries. However, only Colombia, Brazil, and a partner in Finland specifically referred to setting building and constructions

63 http://www.worldgbc.org/sites/default/files/Better%20Places%20for%20People%20-%20Schools%20Briefing%20Notes%20-IAQ.pdf

64 http://www.scpclearinghouse.org/sustainable-buildings-and-construction/actors

standards related to chemicals. Overall, the policies and sustainable procurement policy are oriented towards environmental performance, energy efficiency, and sometimes referring to health. Examples of such national buildings standards include:

- Brazil has a voluntary certification (PBQP-H[65]) for building products which includes some requirements on chemical safety (lead free paint; lead and cadmium-free ceramic coatings and porcelain; asbestos in walls and roofs; avoiding or at minimum labelling flame retardants). Public housing programmes are required to use this standard, which has created demand for these basic chemical safety features.
- Colombia has developed sustainability criteria for the construction sector, such as lead-free paints, mercury-free luminaires, mercury-free batteries etc, based on four technical sheets developed in 2012 for bricks, cement, ceramic tiles, and paints. In the framework of the EC-funded project SPPEL led by UN Environment, Sustainable Public Procurement (SPP) guidelines inclusive of product sheets with sustainability criteria for goods and services have been developed (in Spanish).
- Green Building Council Sri Lanka (GBCSL) received membership from the World Green Building Council in 2010 two years ago, and is applying the existing national Green Building Code, GREENSL® Rating System for Built Environment[66]. This code includes criteria for Materials and Resources and Indoor Environmental Quality which are relevant for CoC, including VOC levels for air quality, and additional points available if green labelled building materials are used for the building. The GBCSL has such a labelling system, GREENSL Product Labelling System[67], which covers 13 product categories and requires testing of some chemicals, e.g. Chromium 6, VOC and lead for paints. However, this labelling system does not cover all relevant building products, such as electronic equipment for buildings. The GBCSL has expressed interest in establishing local criteria that include more comprehensive chemicals considerations.
- The National Cleaner Production Centre in Sri Lanka (NCPCSL), is well integrated with companies in the building sector, including the national paint manufacturing association; hotels and construction contractors. It has an active SWITCH Asia project with the Ministry of Environment to develop a Sustainable Public Procurement policy, including preparing documents for 5 groups of products, including paint and light bulbs in the buildings supply chain. Two workshops to educate policy makers and procurement people are planned to take place in the coming months. The NCPCSL is also currently implementing a SWITCH-Asia funded project on improving Resource Efficiency in SMEs of the metal sector supplying to the construction sector covering 80 SMEs in the sector.

The Global Environmental, Social and Governance Benchmark for Real Assets (GRESB) is the dominant tool used by leading institutional investors as the global benchmark for real estate investments on environmental, social and governance (ESG) performance, primarily used for investments in developed economies. A 2016 Health and Well-being includes indicators for design & operation strategies for indoor and outdoor air quality and toxic exposures, measured for new construction, refurbishment and operation phases[68].

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[65] http://www.inmetro.gov.br/qualidade/produtosVoluntarios/mat_construcao_civil.asp and http://www.inmetro.gov.br/qualidade/rtepac/voluntarios.asp

[66] http://srilankagbc.org/Rating%20System%20for%20Built%20Environment.html

[67] http://srilankagbc.org/GREEN%20Labeling%20System.html

[68] https://gresb.com/wp-content/uploads/2017/07/2017-GRESB-RE-Health-and-Well-being.pdf.

In Sri Lanka, as in many developing economies, the banking sector dominates the financial system, accounting to nearly 60% of the total assets of the financial system in 2014[69]. With regards to housing finance, the finance comes from both public and private banks. Sri Lanka has some existing capacities on sustainable finance. The Central Bank of Sri Lanka (CBSL) joined the IFC's Sustainable Banking Network in Nov 2016[70] and the largest private bank, Commercial Bank of Ceylon (CBC) is receiving up to $100m loan from IFC to improve access to Green Financing in Sri Lanka[71]. DFCC Bank (Development Finance Corporation of Ceylon), a commercial development bank also has experience in green finance and has received the Karlsruhe Sustainable Finance Awards organised by the Global Sustainable Finance Network in 2017.[72] Finally, the Colombo Stock Exchange is a UN Sustainable Stock Exchanges Initiative member.[73]

Electronics: Regulatory drivers for reporting of chemicals in electronics is globally led by the EU RoHS 2 Directive, which restricts the use of 10 hazardous substances in electrical and electronic equipment, for example, lead and cadmium[74]. This piece of legislation as well as its process for determining new restrictions including and the need for exemptions thereof has set a global standard and is the strictest of its kind. Since RoHS emerged some 33+ jurisdictions outside the European Economic Area have either introduced similar or different laws (e.g. China, India and the Eurasian Economic Community). For the most part countries attempt to copy EU RoHS but sometimes, intentionally or not, different rules are introduced, for example in the treatment of exemptions, deadlines, assessment requirements, or dealing with updates to the original RoHS legislation by the EU. This proliferation of RoHS laws across the world is an enormous challenge for the tech sector with its highly complex global supply chain. Companies with a global footprint tend to design products to comply with this highest standard, hoping to be able to sell them globally. Since the EU does not have the mandate to coordinate with other countries that may adopt its regulation, individual companies must work on a bilateral basis with such governments, at the same time working processes such as WTO Technical Barriers to Trade.

Most major electronics manufacturers have developed their own restricted or reportable substances lists, with many hazardous substances included and either already phased out or in the process. Many of these global companies explicitly design their chemical transparency initiatives to facilitate reporting under the EU RoHS and other national and regional regulations, but there is currently no industry-wide common standard for environmental performance or chemical safety.

EPEAT is one of the most widely adopted voluntary ecolabel in the IT sector, and EPEAT-registered products meet strict environmental criteria that address the full product lifecycle, from energy conservation to product longevity and end-of-life management and toxic materials including lead, mercury, cadmium, hexavalent chromium, bromine and chlorine. It is a resource for purchasers, manufacturers, resellers and others to identify environmentally preferable electronic devices. EPEAT is provided by the Green Electronics Council (GEC), Member

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[69] http://www.cbsl.gov.lk/htm/english/05_fss/f_1.html

[70] http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/company-resources/sustainable-finance/sbn_whatsnew

[71] https://ifcextapps.ifc.org/ifcext/pressroom/ifcpressroom.nsf/0/07E98F6CB5533E4D85258168002D8B19

[72] http://dailynews.lk/2017/08/03/business/124054/dfcc-bank-recognised-germany%E2%80%99s-karlsruhe-sustainable-finance-awards

[73] http://www.sseinitiative.org/fact-sheet/colombo-stock-exchange/

[74] http://ec.europa.eu/environment/waste/rohs_eee/index_en.htm

of the Multi-Stakeholder Advisory Committee of the 10YFP Sustainable Public Procurement Programme led by UN Environment. In 2017, GEC commissioned a review of (mainly US-based) voluntary standards to identify common criteria around corporate governance and corporate social responsibility, including in the area of sound management of chemicals in products. The output of this review is intended to support the launch of a voluntary consensus standard based on common criteria to facilitate the recognition of products for example in SPP processes, and to link chemicals management with corporate social responsibility practices.

Office IT equipment is a major spend for public authorities, and is ranked as the first priority category of all product sectors in sustainable public procurement plans[75]. UN Environment is assisting 16 governments throughout the world on designing and implementing SPP policies. A number of these governments (Vietnam, Colombia, Ecuador, Morocco, etc.) have chosen IT equipment as an initial priority category for their SPP plan.

In the PPG survey of RECPNet conducted in October 2017, Peru reported that electronic devices are covered by the National Plan of Sustainable Public Procurement and its technical regulations. A Supreme Decree N ° 001-2012-MINAM establishes a set of rights and obligations for the management of Waste Electrical and Electronic Equipment (WEEE), through the stages of solid waste management. Additionally, it establishes the implementation of the responsibilities of the actors involved in the management of WEEE and manufacturers of electrical and electronic equipment (EEE), to work together with municipalities and include extended producer responsibility (EPR).

In 2015/16, Brazil developed requirements for public procurement for electronics, based on either EU RoHS, EPEAT certificate or a voluntary ecological label given by the Brazilian Association of Technical Standards which is a "mix" of the Eu RoHS and EPEAT. Following this experience, Brazil decided to develop a mandatory 'Brazilian RoHS Directive', and has started an EC-funded project to do this, including research on legislations related to RoHS around the world, verification of the Brazilian standards on electronics and stakeholder engagement to propose different scenario options, and missions and a seminar with the EU to discuss the implementation and verification on compliance with EU RoHS.

In Colombia, the Ministry of Environment already issued a National Policy, Laws, and decrees related to electronics, which are in the implementation and continuous revision phases. The National Policy for the management of WEEE considers elements of sustainable consumption and production, including strategies such as Ecodesign, Sustainable Public Procurement and the promotion of business competitiveness. This policy commits the government to develop environmental criteria for purchase of electronics (objective 1.5.1). Technical sheets prepared in 2012 (in Spanish) for desktop computers, B & W printers, luminaries and mouse highlighted cadmium, chrome, lead and mercury, as well as plastics with flame retardant (polybrominated), and CFCs, PCBs, ODSs, as the chemicals of priority concern. In the framework of the EC-funded SPPEL project run by UN Environment between 2013 and 2017, an SPP National Action Plan[76] as well as training and communication material on SPP have been developed. However, the government has not yet implemented these criteria and action plan and needs to roll out some pilot tenders to test the feasibility in the Colombian market.

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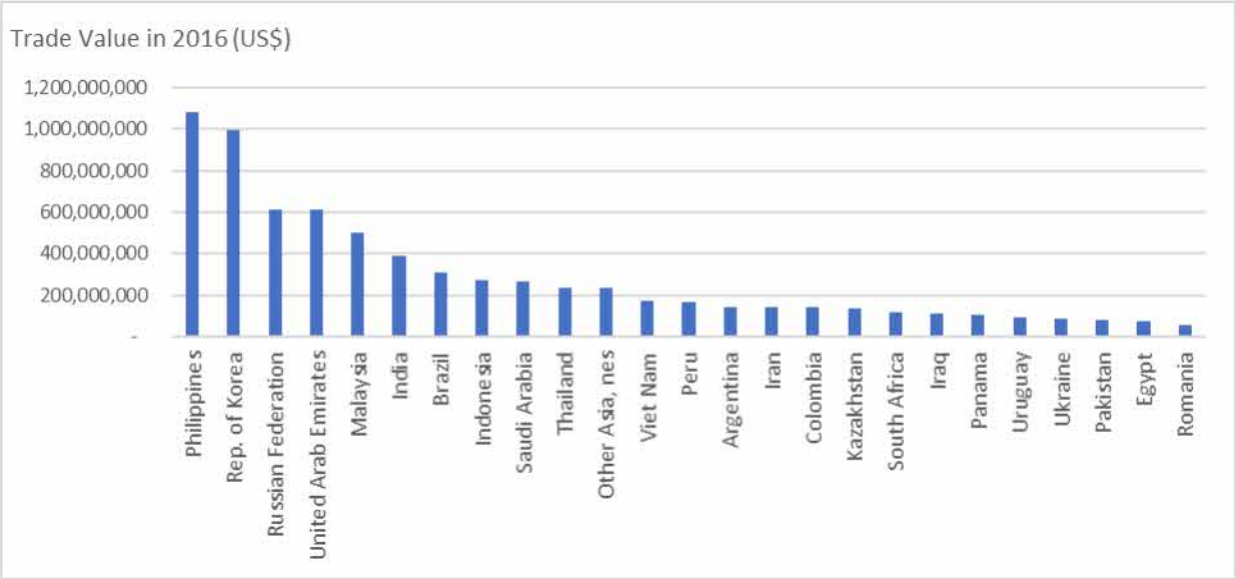
[75] Global SPP review, UN Environment, May 2017. Figure 24: Priority product and service categories in which to apply SP practices according to survey respondents

[76] Available at http://www.scpclearinghouse.org/sites/default/files/spp_-_national_spp_action_plan_-_final.pdf

Over the past two decades, policymakers, producers and recyclers in various countries have created specialised "take-back and treatment systems" to collect e-waste from final owners and process it in professional treatment facilities. Unfortunately, despite these efforts, the collection and state-of-the-art treatment of e-waste is limited, and most nations are still without such e-waste management systems. A baseline study initiated during the PPG phase for Africa seeks to set out the environmental issues associated with the electronic sector, identifying environmental and socio-economic hotpots to guide the identification of corresponding solutions from a systemic perspective, to reduce the impacts from hazardous materials and improve the circularity of the whole sector.

Toys: Toys are a relatively highly regulated product, with several voluntary standards applied and many countries around the world with some form of toy safety regulation, including among others, Argentina, Brazil, China, Arab states, India, Indonesia, Jamaica, Malaysia, Mexico, Saudi Arabia, South Africa and Thailand[77]. Around 80% of the world's toys are made in China, with $44 bn exported to the world in 2016. The top non-OECD importing countries are indicated in Figure 1[78].

Figure 1: List of the top importing countries of toys from China in 2016



In 2016, an independent review identified 702 children's product recalls reported from every country that publishes consumer product recall information online, including the U.S., EU member states, China, Japan, Canada, Mexico, Australia and most other major industrialized nations. Detachment of parts, and chemical content were identified as the specific product safety concern in nearly 64 percent of the toy recalls[79]. Chemical content (most often phthalates) was the dominant product safety issue associated with the most-recalled toy category (action figures and dolls) and was identified in 112 recalls. For the EU 'Rapid Alert System for Dangerous Products' (RAPEX), toys were the most frequently notified product category in 2016, accounting for 26% of all

[77] International Council of Toy Industries, as of Dec 2017: http://www.toy-icti.org/info/toysafetystandards.html
[78] Table based on data from ComTrade: https://comtrade.un.org/labs/dit-trade-vis/?reporter=156&partner=0&type=C&commodity=95&year=2016&flow=2
[79] UL Analyzing safety recalls of children's products (2017) https://www.ul.com/consumer-retail-services/wp-content/uploads/2017/08/CS10526_Recalls-WP-Web_05.pdf

notifications by member states, and of these notifications, 33% were related to chemical risks[80]. The EU system has a follow up mechanism whereby European authorities follow up with the country of origin of dangerous products, including the RAPEX-China initiative. Toys are by far the most frequently affected products, with over 200 toy-specific follow-up measures reported.

China is the largest toy manufacturing and exporting country and more than 70% of toys in the world, many of which are plastic, are made in China. Although some regulations and supervision on chemicals used in plastic toys, such as "Safety of Toy GB 6675-2014 " "Compulsory Standards of Paint for Toys GB24613-2009" "Inspection and Supervision Measures on Toy Import and Export" "Testing Standard on Toy GB6675" , etc. are strict in China, it appears that the occurrence of some hazardous chemicals in plastic toys may be unintentional and likely due to the use of contaminated recycled plastics as raw material in the toy production. To date, it is still not entirely clear how and to what extent contaminated recycled plastics may enter the supply chain of plastic toys and how this overlooked exposure pathway may contribute to childhood exposure to hazardous chemicals in China.

Knowledge Management and stakeholder engagement:

The SAICM Secretariat tracks progress on SAICM based on 20 SAICM progress indicators[81]. These indicators do not explicitly address EPIs, and despite the strong links between EPIs and the targets included in the 2030 Agenda for Sustainable Development, there is no coordination between these two areas of work. Through resolution IV/4, SAICM stakeholders indicated that the SAICM Beyond 2020 process should be linked to the 2030 Agenda. ICCM 4 Resolution IV/1 para 18 calls for an analysis of their continued use, which is being done in the framework of the Beyond 2020 Intersessional Process. The approach aims to provide a more results-focused set of indicators that are relevant and align diverse stakeholders and sector agendas, as current work on EPIs is driven by the proponents of the EPIs within the SAICM process (1-5 countries in most cases) and the IOMC agencies who lead the issues. The project will therefore design the communication platform for SAICM to mirror the likely structure of the revised progress monitoring system, based on the 2030 Agenda and the SDG goals.

SAICM stakeholders have produced a significant number of knowledge products on the EPIs, as described in the above baseline sections for lead in paint and chemicals in products. A similarly rich baseline of knowledge exists for other EPIs including publication of results from FAO projects on regulating HHPs; a UN Environment and WHO publication on the State of the Science of Endocrine Disrupting Chemicals; a global map of monitoring data on Environmentally Persistent Pharmaceuticals; UNITAR regional workshop reports on nanotechnology (to name a few). These any many other resources are typically available from individual agency or organization websites, and are not readily accessible from a single point of reference, despite being potentially useful for policy makers, communities and consumers, and industrial users of these problematic chemicals. As well as chemical-specific knowledge products, cross cutting issues have also been addressed by SAICM stakeholders, including on the issue of gender and chemicals. A gender review of chemicals issues was completed by the SAICM Secretariat in 2017[82]

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[80] European Union (2017), Rapid Alert System for Dangerous Products, https://ec.europa.eu/consumers/consumers_safety/safety_products/rapex/alerts/repository/content/pages/rapex/reports/docs/rapex_annual_report_2016_en.pdf

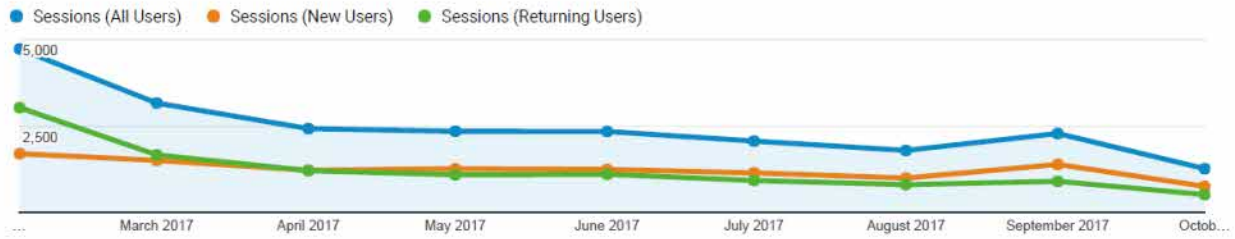
[81] http://www.saicm.org/Portals/12/Documents/SAICM-List%20of%20indicators%20for%20reporting%20progress.pdf

[82] MSP Institute (2017): Gender and chemicals – Questions, issues and possible entry points

as part of the Beyond 2020 process, and the results of this review have guided development of the gender activities of this project.

The SAICM website[83] is hosted by the BRS Secretariat, and currently contains information on SAICM implementation programmes, meeting documents including Beyond 2020 process meetings, media resources (i.e. videos, publications, stories) and a section for EPIs. The current SAICM website is static, meaning that there are limited updated content and information updates; and resources for regular content updates and technical maintenance and performance are lacking. Currently the SAICM website is underutilized. Monthly website visitors oscillate around 1.500 visitors per month, evenly split between new users and returning visitors. User numbers appear to be decreasing marginally over time, refer to Figure 2, below.

Figure 2: SAICM website visitors in 2017



During project preparation, SAICM stakeholders were surveyed through an online survey (11 October – 12 November 2017). Respondents were asked to provide information on their professional affiliations, information needs, computer use, and online database searching preference. A total of 77 responses were received, and formed the basis of a SAICM needs assessment. The key findings of the needs assessment included:

- The SAICM website lacks a standard methodology for data collection and therefore shows inconsistency and restricted availability of information provided to stakeholders and website users. Additionally, there are very limited resources explicitly dedicated to knowledge management.
- The opportunities identified for the development of SAICM's knowledge management strategy suggest the need for a systemized knowledge platform and new mechanisms to communicate science and best practices in policy development, chemicals management and strategic knowledge for Emerging Policy Issues and other issues of concern. Additionally, there is an opportunity to explore and adopt the use of innovative tools and means of communication to reach out to a broader audience (i.e. social media, online collaborative tools).
- In terms of information use, the assessment found that the most significant and consistent usage of information available on chemicals management is used as a reference for guide to develop documents. Information is also used to assess the danger of chemicals, guidance for policy implementation, training purposes and develop ideas for projects.
- SAICM should focus its knowledge work and product sharing into related ongoing scientific research, tracking regulatory status on chemicals and SAICM country implementation as well as SAICM project implementation, results best practices and lessons learned.

[83] http://saicm.org/About/SAICMOverview/tabid/5522/language/en-US/Default.aspx

The project preparation phase also reviewed existing knowledge management platforms. These, and their relationships to SAICM, are discussed in the following paragraphs.

Global Sustainable Consumption and Production (SCP) Clearinghouse Platform[84]: A one-stop hub aiming to bring together individuals who are working in SCP, and functions as the knowledge management platform for the 10YFP on SCP. The platform has over 3000 participating members, with an even split between government, civil society, and academic participants. Participants involved in chemicals management such as governments, ministries, science experts, civil society, IGOs, as well as activities from the agriculture, waste, industry, building and construction sectors overlap with SAICM's multi-stakeholder, multi-sectoral approach. A small proportion of SCP members are from the private sector. The clearinghouse is set up as a membership based platform that allows all stakeholders to submit documents and content. Over the year from June 2016- June 2017, the site had close to 20,000 visitors, 95% of whom were new, and 132,000-page views.

Green Growth Knowledge Platform (GGKP)[85]: The GGKP is a global network of international organizations and experts that identifies and addresses major knowledge gaps in green growth theory and practice. The GGKP offers practitioners and policymakers policy guidance, good practices, tools, and data necessary to support the transition to a green economy. The target audience are mainly policy makers and academics and not the general public, or implementers. The target group of stakeholders does not directly relate to SAICM as this platform is focused on green growth; however, many publications refer to green economy tools and green economy measures that pertain to chemicals management and emerging policy issues.

The platform has drawn together over 2,600 knowledge products from more than 400 organizations. Their resource library draws together the largest existing collection of green growth reports, articles, books, and other publications produced by leading institutions and experts. By the end of 2015, the Library contained over 1200 publications, tagged by country, region, sector, theme, and organization. Along with the resource library, the platform also has global databases on best practices, learning products (such as webinars, platforms and tools, courses, etc), project database of on the ground initiatives, a data visualization tool based on indicators or country, and Big-E (Batumi Initiative on Green Economy) commitments made in the Pan-European region. From 2014-2015, there were 90,078 visits and 224,303 total page views, from 203 countries. The most accessed area of the web platform is the GGKP Resource Library.

BRS Joint Clearinghouse Mechanism[86]: The joint clearinghouse mechanism promotes, facilitates, and undertakes the identification, generation, collection, management, distribution, and exchange of quality information and expertise to support parties and other stakeholders in the implementation of the Basel, Rotterdam, and Stockholm conventions. This clearinghouse is a summary of information of the Basel, Rotterdam, and Stockholm Conventions. There are country profiles, mechanism strategies, information on partners, contact information, and updated information on news and meetings as it relates to the conventions. As for resourcing, there are three components in the provision of information that make up the clearinghouse mechanism: *1) information capital*

[84] http://www.scpclearinghouse.org/about/what-scp
[85] http://www.greengrowthknowledge.org/learning
[86] http://www.brsmeas.org/?tabid=4466

that is technical and scientific information relevant to projects and implementation activities undertaken by different convention stakeholders while embracing open data principles. *2) human capital* component where they select information providers based on criteria for information quality, relevance, and established partnership by the conventions *3) operational capital* is the information and communication tools, products, and services that are included into the website. For 2015- 2016 the site received 10,074 visits.

MapX[87]: Supported by the World Bank, UN Environment and the Global Resource Information Database (GRID-Geneva), MapX aims to capitalize on the use of new digital technologies and cloud computing in the sustainable management of natural resources. MapX evolved from an initial focus on extractive resource to include a range of different resource types and themes, based on geo-reference datasets. The MapX engagement process focuses on generating actionable insight from geospatial data to inform dialogue and help stakeholders understand benefits and risks, manage expectations and take evidence-based decisions. Examples include informing national biodiversity planning and reporting to strengthen implementation of the SDGs involving UNDP, supporting country reports to the Stockholm Convention on POPs, and support for National Action Plans under the Minamata Convention on Mercury). SAICM stakeholders similarly require a country-focused way to report and present progress in order to build commitment and generate political and stakeholder buy-in.

IOMC[88]: The IOMC brings together nine UN and multilateral organizations that are involved in the coordination and promotion of chemical safety and sound management. The IOMC website summarizes IOMC indicators of progress in implementing SAICM, country profiles and IOMC member projects at a national level, and the IOMC Toolbox for Decision making in chemicals management that enables countries to identify the most relevant and efficient tools to address specific national problems in chemicals management. Participating organizations are responsible for the information displayed on the site and there is no participation from outside stakeholders. The most underutilized of all platforms reviewed, from March 2017 – October 2017, the IOMC website received 1917 total visits. The IOMC Toolbox received an average of 224 monthly visits between April- September 2017.

3) Proposed alternative scenario (GEF focal area[89] strategies, with a brief description of expected outcomes and components of the project)

The GEF-6 chemical and waste strategy's long-term goal is **to prevent the exposure of humans and the environment to harmful chemicals and waste of global importance**, including POPs, mercury and ozone depleting substances, through a significant reduction in the production, use, consumption and emissions/releases of those chemicals and waste[90].

The Overall Orientation and Guidance endorsed at ICCM4 identified **increased risk reduction and information sharing efforts on emerging policy issues** as one of the six core activity areas to be addressed in the lead up to 2020. This proposed alternative scenario is focused on **risk reduction (nationally and sub-regionally)** and

[87] https://www.mapx.org/
[88] http://www.who.int/iomc/en/
[89] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives
and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving.
[90] GEF-6 Programming directions: https://www.thegef.org/sites/default/files/documents/GEF-6%20Programming%20Directions.pdf (Accessed 9 January 2018)

information sharing (globally). GEF resources are needed to take a coherent approach to the EPIs, take stock and plan actions up to and beyond 2020. Without such funding the proposed activities are unlikely to be achieved in the critical period to 2020.

According to the GEF focal area strategy for chemicals and wastes in order to achieve transformational change and be effective in a global market GEF interventions need to seek closer integration with global supply chains. This should ensure that products crossing national borders are free of global priority substances that otherwise enter into markets and recycling chains. It is imperative that these interventions integrate the private sector more closely due to the primary role the sector has in the production and use of chemicals. Both Component 1 on Lead in Paint and Component 2 on Chemicals in Products have been designed in the context of global supply chains, and industry is fully involved, to ensure global benefits from project activities.

The activities proposed in this project are in line with GEF-6 Strategic Objective 1: *Develop the enabling conditions, tools and environment for the sound management of harmful chemicals and wastes*; and GEF-6 Strategic Objective 2: *Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies/substances.*

Specifically the project will contribute to the GEF 6 C&W Program 1 (*Develop and demonstrate new tools and economic approaches for managing harmful chemicals and waste in a sound manner*) via the development and piloting of new tools and guidance on market-based and economic tools to promote phase out of hazardous chemicals in supply chains (namely sustainable public procurement and green mortgages in Component 2). The project also contributes to the GEF 6 Program 3 (*reduce and eliminate POPs*) by addressing the use of POPs chemicals of concern that are still used in building products, toys and electronics. Please refer to Table 1 in the baseline section for a list of specific POPs that will be addressed. Finally the project contributes to GEF-6 Program 6 (support regional approaches to eliminate and reduce harmful chemicals and waste in LDCs and SIDS) where the project will work with a number of LDC and SIDS to eliminate lead in paint including through the regional economic commission in West Africa; and support the deployment of safe alternatives to lead additives currently used in paints.

The overall project objective is to accelerate progress in control of EPIs by governments and value chains, by promoting the phase out and replacement of hazardous chemicals in paint, building products, electronics and toys. Upstream actions by governments and value chain actors to replace priority chemicals in supply chains and products will reduce worker and consumer exposure, and environmental releases during manufacture and at end of life. This directly contributes to the 2020 SAICM Goal of ensuring that "chemicals are produced and used in ways that minimize significant adverse impacts on the environment and human health".

The following subsections outline the proposed components.

Component 1: Promoting regulatory and voluntary action by government and industry to phase out lead in paint

The project outcome is for 40 countries to regulate to establish legal limits to lead paint; and for at least 50 SME paint manufacturers in eight countries to phase out lead from their production processes (see logical framework in Annex A). Through nationally focused interventions (Output 1.1), project activities will work with SMEs to demonstrate the replacement of lead in paint to non-lead alternatives using BAT/BEP. Experiences will be shared

across subregions. Through a globally coordinated approach with governments and regional standard setting organizations (Output 1.2) the project will accelerate the adoption of legal limits to lead in paint.

Output 1.1 Demonstration pilots with paint manufacturers in Small and Medium Sized enterprises (SMEs) executed in eight countries

This output addresses the technical barriers faced by SMEs in replacing lead additives in paint with lead free alternatives (see section on Barriers and Root Causes). It focuses on seven countries with SMEs producing lead paint: Jordan, Ecuador, Indonesia, Peru, Colombia, China, and Nigeria. In Ecuador, Peru, Colombia, China and Jordan the project will work through NCPCs to provide assistance to SMEs on phasing out lead in paint. In Nigeria and Indonesia, the project will work through IPEN partner organisations SraDev and Balifokus respectively. An eighth project covered entirely through cofinance in Tunisia will follow a similar approach focusing on industrial anti-corrosive paints, including tailored technical guidelines and dissemination, and a Small Scale Trade Fair Event for suppliers and SMEs.

Activities in this output address the technical barriers faced by SMEs in phasing out lead in paint production in favour of less hazardous alternatives, as well as supporting governments in regulating lead paint. Specifically, the project will:

1.1.1 National baseline information – Paint market information collection and analysis:

- Collecting of all existing information on lead in paint in the country, such as production, consumption, import and export.
- Collate a list of paint manufacturers and vendors, volumes, specifics on lead additives.
- In limited cases, perform testing and analysis of paint samples (industrial and decorative), or identify companies that disclose that they use lead additives.
- Compilation of findings of the national baseline information.
- Based on the national baseline information, select SMEs currently using lead additives in their paint products for the pilot demonstrations.
- Engagement with ministries, SMEs, paint manufacturers "champions", suppliers of lead-free alternatives, paint associations, accredited laboratories, and other stakeholders to request co-finance letters.
- Meetings to promote stakeholder dialogue of LP controls involving national industry and other stakeholders.

1.1.2 Raise awareness with SMEs

- Design and disseminate awareness and information materials on a regular basis using all forms of print or broadcast communication.
- Organize annual activities during the International Lead Poisoning Prevention Week.
- Organize workshops to promote the need for legislation and BAT/BEP.
- Coordinate outreach and awareness activities with output 1.2.

1.1.3 Provide policy advice on legal limits to national and local governments in coordination with output 1.2

- Share national baseline information about the national paint industry and technical advice with national government.

- Engage government to promote legislation and provide support to draft laws and regulations in coordination with output 1.2
- Provision of information technical issues related to the paint industry to output 1.2.
- Provision of Input/advice/advocacy to get lead paint on relevant meetings and conference agendas.
- Facilitate engagement or establishment of a National inter-agency/coordinating committee on lead.

1.1.4 Alternative supplier events

- Provide details of national/regional alternative suppliers contact details to SMEs.
- Facilitate "alternative suppliers-paint manufacturer" events or meet-ups.
- Facilitate demonstration pilots from alternatives suppliers directed to SMEs.

1.1.5 Paint reformulation in pilot demonstration(s) project

- In depth assessment in the selected SMEs through interviews and field visits (using a template to be provided by Serbia NCPC) regarding their installed capacity, paint products containing lead, leaded paint ingredients currently used, paint ingredients properties, alternatives/approaches/suppliers available for the company, paint formulas, among others.
- Facilitation of cooperation with paint additive suppliers to provide individualized aid in creating a paint formula to substitute lead-additives with alternatives in a cost-effective manner.
- Dissemination information and to work with the supplier to provide training among workers and management staff.
- Conduct a follow up of the reformulated paint in the SMEs by conducting paint sampling and testing.

1.1.6 Disseminate technical information

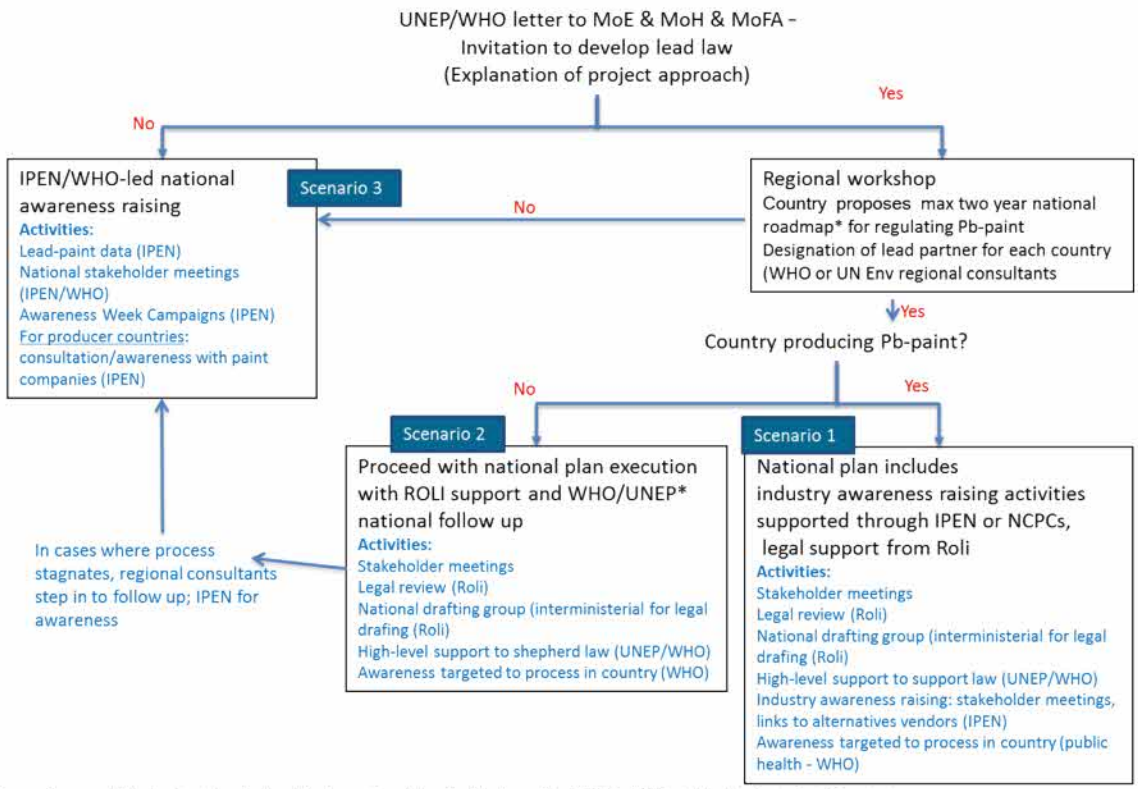
- Generic BAT/BEP technical guidance provided by Serbia NCPC, tailored to the individual pilot country needs.
- National meetings (face to face or virtually) convened with participating stakeholders to validate the tailored BAT/BEP technical guidance
- Regional stakeholder workshops to share the final BAT/BEP guidance provided by Serbia NCPC.
- BAT/BEP guidance and information from the project nationally and internationally through the NCPC network and with governments and other stakeholders through project output 1.2.

<u>Output 1.2 Policy support and awareness raising generate support for lead phase out</u>

This output addresses the capacity barriers faced by countries in regulating lead in paint (see section on Barriers and Root Causes). The output will be led by UN Environment and WHO under their respective mandates to assist developing country governments in regulating lead paint. In countries where the Ministry of Environment is designated to take the lead, UN Environment will be the key executing partner. In countries with the Ministry of Health is designated to lead regulatory activities, WHO will take the lead. It is expected these ministries will establish inter-ministerial drafting groups that will include the Ministry of Foreign Affairs, Industry and Bureau of Standards. Executing partners UN Environment and WHO will be supported by ABA Roli, with their expertise in legal review and drafting, and IPEN, in awareness raising activities. The aim of the activities described below is to achieve lead paint regulation in at least 40 of the 70 identified target countries, by the end of the project. The methodology for this output is based on a decision tree approach, which models the potential scenarios the project partner anticipate they will encounter in the 70 countries. Countries ready to move quickly will be offered

a fast track approach, that is, they will be provided the format for the roadmap in advance of the regional workshop, and once this has been received and reviewed by UN Environment, access to legal expertise. The decision tree is included below as Figure 3.

Figure 3: Decision tree for development and delivery of national level activities to promote lead in paint legislation



* Depending on which ministry takes the lead for the national plan/ legislation, either UNEP or WHO will be the first point of contact

Specifically, under Output 1.2 the project will undertake the following activities:

1.2.1 High level communication: UN Environment/WHO will write to MoE and MoH and Ministry of Foreign Affairs (MoFA), referencing the relevant governing body resolutions, formally inviting countries to participate in the project to eliminate lead paint. The letter will include an invitation for representatives to a regional workshop.

1.2.2 Convene regional workshops: At regional workshops, countries will be briefed on the issue of lead paint, and then formulate national 2-year project roadmap or project plan. Each country plan will be firmly grounded in national context and processes and designate an appropriate lead partner (UN Environment, WHO) for each country. Lad partners are dependent on national situation in terms of which ministry is responsible for regulating lead paint. Countries with leadership from the the health ministry leadership will be partnered with WHO. Countries with environment ministry leadership will be partnered with UN Environment. National project plans will be simple, limited in scope, and include a timeline for action, and designated national actors.

1.2.3 National-level activities: Will be based on the national roadmap and project plan by countries and will include the following:

- Stakeholder meetings, to raise awareness on lead paint in each country.
- Interministerial meetings, to establish interministerial working group, and ensure broad national buy-in to regulatory reform on lead paint.
- National legal review, led by with ROLI to ensure proposed regulatory activity is appropriately nested within existing national regulatory framework.
- National drafting meetings, led by ROLI and WHO/UN Environment.
- High level support and coordination meetings (refer Figure 3: Scenario 1 and 2 countries: ROLI, WHO, UN Environment and ECOWAS).
- Industry awareness raising events (Scenario 1 and relevant Scenario 3 countries), led by IPEN.
- Public health awareness raising, led by WHO (Scenario 1 and 2 countries)
- Lead paint awareness week campaigns (Scenario 3 countries) (IPEN)

1.2.4 Regional activities in the ECOWAS region: additional support to facilitate development and adoption of a regional standard (see flowchart in Baseline section), including meeting of the Technical Harmonisation Committee. Specifically, this will include the following:

- A Technical Harmonisation Committee (THC), meeting to register lead in paint in their programme: review draft law (e.g. based on Model Law
- A public enquiry, including a 60 day consultation period in each member state, and THC meeting to review submissions
- National Standard Bodies, vote on draft standard document voted on by national bodies. The proposal is accepted if 75% of national bodies support it
- A meeting of the Technical Management Committee, which meets twice a year (cofinance contribution), to finalize standard
- Presentation to ECOWAS Parliament, adoption by Council of Ministers, notified to Member States and replaces previous regulations

Component 2: Lifecycle management of chemicals present in products

The project will accelerate the adoption of measures by governments and value chains to track and control chemicals in supply chains for building products, electronics and toys. It will address the three barriers identified earlier, namely increasing the adoption of tools for companies to transparently track chemicals used through their supply chains; creating demand-led incentives for supply chains to act, particularly via public procurement and sustainable finance measures; and developing quantitative life cycle assessment tools to compare chemical alternatives and avoid regrettable substitutions. Through the development of global level guidance and tools (Output 2.1) and roll out of these in pilot projects and demonstration to companies in the three sectors (Output 2.2) the project aims to create pressure for reporting and replacement of hazardous chemicals via new market and economic tools.

<u>Output 2.1: New tools and guidance to reduce the use of chemicals of concern (CoC) in the building, electronics and toys sectors</u>

This output will respond to the barrier of lack of incentives for the adoption of mechanisms and tools to track and manage hazardous chemicals in the three sectors. It will develop quantitative analysis of chemical impacts using the USEtox LCA model, and apply results from the model to guide the development of technical specifications for chemicals within Sustainable Public Procurement guidelines, finance mechanisms, and circular economy reviews.

2.1.1 Life Cycle Assessment: This activity will further develop the USEtox prototype model for near-field exposure modelling for building products and toys, drawing on expertise and data on CoC and alternatives from the scientific community and building and toy sector supply chains. The activity includes the adaptation of the existing USEtox model to include children's exposure routes unique to toys. It will refine and apply the model working with Chinese toy manufacturers to phase out toxic chemicals in toys.

- Identification of CoC in building products, their functional uses, product descriptions and alternatives for building products (including insulation materials, coatings, carpets, furniture). Development of a global information hub on roll-out of alternatives by the building sector, to be integrated into the CiP Platform (link with Component 3 on KM). Chemicals & Health Branch (CHB), USEtox, and companies in the sector, via the CiP Programme)
- Review of Chinese regulations on chemicals concentrations allowed in toys and testing of toys to assess compliance, confirm baseline findings and identify other hazardous chemicals that may be present in plastic toys, and calculation of a material flow model for plastic inputs into toys, reflecting the use of recycled plastic and possible contamination of finished products (China BCRC)
- Further refine the adapted USEtox prototype near-field product exposure model for the building sector, including adding additional pathways and toxicology data from international sources and research (e.g. from USEPA, ECHA).
- Adapt the USEtox model to include mouthing and dermal contact pathways for children, including compiling data on chemicals of concern commonly used in plastic toys, and alternatives that exist in the Chinese market (USEtox initiative with input from China BCRC and consultation with toy manufacturers);
- Seek consensus for formal inclusion in the USEtox model from industry, public sector and scientific stakeholders via documentation of all adaptations, peer review and publication of the model

2.1.2 Sustainable Public Procurement: The UN Environment Resources and Markets Branch (RMB) will develop global guidance on setting criteria within sustainable public procurement processes and standards to avoid certain hazardous chemicals in key building and electronics products.

- Develop global guidance for Sustainable Public Procurement defining technical CoC specifications for purchasing building products and electronics. Criteria and scope for the guidelines will be developed based on life cycle analysis, to ensure multi-criteria analysis of possible alternatives, and to consider both near field and far field impacts (indoor air quality, workers exposure, water, other resources, greenhouse gas emissions, air pollutants). Technical details will include sub-sector technical information, methodological guidance to private sector manufacturers for compliance, and feedback from implementation. (*RMB, consultants*)
- NCPC Colombia complete cost/ benefits analysis for purchase of identified products, including information on existing procurement (energy*), estimation of purchasing power, and impacts on Colombian industry/manufacturers, and consult with government and non-government stakeholders to adapt the global SPP guidance for Colombia and integrate CoC specification into the existing national SPP practices for electronics (*Colombia NCPC*)
- Sri Lanka Green Building Council (GBC) update the building products SPP documents / specifications developed under the SWITCH Asia project, with information on chemicals from USEtox (*Sri Lanka GBC*)
- Develop local technical specifications related to CoC, based on global SPP guidance, to cover a) private sector purchases through integration of CoC criteria into the SL Green Building Council operations and certifications; and b) public-sector procurement through integration in the green procurement practices related to the construction sector (*Sri Lanka GBC*)

- Present and communicate the guidelines and case studies to international stakeholders and audiences to build consensus around the guidance and ensue its visibility and adoption (incl. UNFI, Sustainable Buildings and Construction Programme of the 10YFP, GABC, SAICM) (*RMB*)

2.1.3 Developing the Sri Lankan Green Mortgage Market; The project will support the development of guidance and tools to promote construction or retail finance for green certified buildings and /or green certified building products) in Sri Lanka. The following activities will be overseen by the multi-stakeholder group and working groups including the central bank, public and private banks and others including the Sri Lanka NCPC and GBC.

- Adapt the UNEP Finance Initiative's Environmental and Social Risk Analysis Training Programme91 on establishing and implementing effective environmental and social risk management systems within bank to the Sri Lankan context and add a module on green mortgages. The training programme is essential for banks with no or little experience in sustainable finance.
- The new green mortgages guide will serve as the basis for the green mortgages module, and be based on research on the market development needs for green mortgages covering issue such as sources of wholesale capital to banks; standards and validation processes; product structure to overcome first-cost barriers; supply chain development, etc.

2.1.4 Regional studies on life cycle management of electronics : This activity will support the development of circular approaches for management of electronics, through global and regional reviews which will complement existing work already done for Africa and Asia, and provide strategic overviews of the capacity and models that exist for sustainable management of electronics from manufacture to disposal. Regional electronics lifecycle studies completed in two regions (LAC and CEE). The two studies would have a similar remit, looking at lifecycle management of electronics, led by partners based in the respective regions, and the UNEP partners providing technical support and coordinating a process of peer review by CiP and project partners, including civil society and industry.

- Extended Producer Responsibility schemes, and waste management capacity for environmentally sound recycling/ disposal, proposing considerations and recommendations for promoting a circular economy approach for electronics (*UNEP-RMB, with partners where possible e.g. the Colombian NCPC for LAC region)*
- Review of LMIC legislative and regulatory approaches for prohibiting the use of CoC, including transposition of RoHS (*UNEP-CHB*)
- Consolidation of a diverse range of tools and ecolabels on green electronics, focusing on how they treat CoC and further defining a common set of technical specifications for purchasing electronics products, based on global harmonized label or list. This would include a study on Chemicals Management Common Criteria Standard for electronics to develop a voluntary consensus standard would be developed leveraging existing corporate level chemicals management criteria found in standards globally. It would provide a "baseline" of corporate chemicals management activities and would prompt a discussion on the differences between sector approaches to chemicals management, as illustrated in VCS standards, and how sectors can learn from each other (*Green Electronics Council*)

2.1.5 Toy safety policies and voluntary standard - This activity will produce global impact by engaging the toy manufacturing sector in China, which produces 80% of the world's toys, and explicitly linking issues of chemicals of concern with toy safety regulations and major retailers in importing countries. The project will engage with

[91] http://www.unepfi.org/training/training/esra/

export markets in LMIC receiving Chinese toys, to strengthen toy safety policies and create additional incentives for toy manufacturers to report and reduce the presence of hazardous chemicals in their products.

- Review of toy safety policies and regulations, including testing for CoC where relevant, in LMIC importing toys from China (*CHB*)
- Development of training and audit package for first steps toward phase out of CoC in toys, developed in cooperation with existing membership organizations including toy associations with standards and processes to align with existing toy safety regulations (e.g. EU, US)

Output 2.2: Training and support for government and value chain actors to trial and adopt new guidance and tools

2.2.1 Validation and adoption of USEtox model by building product and toy sectors in Asia: working with manufacturers of building projects in Sri Lanka, and toy manufacturers in China, to test the revised USEtox model and demonstrate its use in product design processes and assess alternative chemicals.

- Identify companies in Sri Lanka and China Asia that produce building products (priority categories including insulation materials and coatings) and plastic toys, to validate the USEtox prototype models with specific data on product composition, to test the model in real case study scenarios, and build capacity to use LCA tools including via short courses and / or summer school being organized in Singapore for 2019 (*USEtox, national partners*)
- Case study roll-out of the new tool with industry partners and retailers (see below) via industrial intensive training courses on site, via webinars, and USEtox+ summer school organized in Asia with emphasis on near-field exposures (*USEtox*).

2.2.2 Sustainable Public Procurement and Sustainable Finance pilot projects (Colombia, Sri Lanka): reviewing an existing national SPP policy and creating the conditions for an effective implementation of the policy including working with suppliers.

- Colombia: Roll out of national public procurement policy for electronics, including assisting public entities in implementing purchases processes with CoC-specific sustainability criteria; national ecolabel aligning with SPP requirements, or other means, to meet the demand from public sector (*NCPC Colombia*);
- Colombia: Awareness raising of companies to inform about the SPP new requirements and timeline, as well as lifecycle impacts of electronic products, and SMEs capacity building to be part of the supply chain and meet these new requirements. Training and events will ensure that women and representatives of SMEs are proactively invited as participants and presenters/ trainers.
- Sri Lanka: propose amendments to the National Green Building Code, based on best practices elsewhere (Brazil/ Colombia) and the results of the LCA. Activities will be stewarded by a national multistakeholder group (see also Activity 2.1.4) and include Roll out of revised standard, engaging companies, informing about the newly integrated criteria, and related timeline, and support to upstream product manufacturing processes and purchasing through training, assistance in sourcing alternatives, eco-innovation and supporting new business models (*Sri Lanka GBC and NCPC*)
- Sri Lanka: Promotion of the upgraded ESRA and Sri Lanka Green Building Code/ GREEN building product label with national stakeholders, including three sessions for practitioners (bank risk managers and credit analysts, financial regulators and financial journalists); wider stakeholders (bank customers, Green Building Council stakeholders, policy makers, business journalists, civil society, etc); and a High-level session (CEOs and board members together with senior regulators). The project will also involve the Colombo Stock Exchange which is a member of the UN Sustainable Stock

Exchange Initiative which is co-convened by UNEP Finance Initiative.[92] (*UNEP Finance Initiative and Sri Lanka GBC*)

2.2.3 Training and consultations on regulatory and compliance approaches for toys and electronics sectors: This activity will roll out the training packages developed for toys in China, and engage Chinese and international regulators and value chain actors to share information on CoC tracking approaches and results; and consult on the development of voluntary industry-led reporting tools for both toys and electronics.

- Piloting toy manufacture auditing and chemicals reporting tools for Chinese toy manufacturers who are currently using CoC. Audit results and reports published on CiP platform (*CHB*);
- Sustainable toys multistakeholder workshop, targeting manufacturers, retailers and governments in key LMIC import markets, to review legislation, share data on product testing and recalls, propose networks/ modalities to promote common standards (*CHB*);
- International electronics regulations/ RoHS consultation: bringing together electronics producers and countries using RoHS, with the objective to further explore how the regional studies can be used to develop an industry-supported international voluntary consensus standard for circular electronics (*CHB/ RMB*)

Component 3 – Knowledge management and stakeholder engagement

The objective of the Component is for countries and other stakeholders to access up to date information on the EPIs, and join communities of practice for peer-to-peer learning exchanges, to support decision making and development of new initiatives towards the 2020 SAICM goal and in line with the 2030 Agenda. The project directly addresses the barriers identified, by supporting stakeholders to tell compelling stories and present their information in the most impactful way (Output 3.1) and providing a single point of reference for this material (Output 3.2). The KM Platform will address all of the EPIs, serving a related SAICM GEF Medium Size Project on highly hazardous pesticides, endocrine disrupting chemicals and environmentally persistent pharmaceutical products.

<u>Output 3.1 Collaboration and engagement with the SDG agenda and scientific community to promote EPIs</u>

This output seeks to establish an effective global network of EPI experts, in a community of practice, and mainstream the sound management of chemicals as a key cross-cutting approach to tackle chemical management issues. It responds to the identified barrier of the lack of context-specific data on EPIs. It will lead to engagement of stakeholders from other sector agendas to integrate chemicals management issues into their approaches and development of joint initiatives or projects.

SAICM outreach will be enhanced and linked with the 2030 Agenda through the following activities:

- Production of strategic outreach papers and materials – including six policy briefs on SDGs 2,3,6, 11, 12; five thematic papers on water, cities, science etc; a gender review mapping EPIs and identifying gender priorities; and an indicators mapping paper reviewing contribution of EPIs to indicators of progress/ impact,

[92] http://www.sseinitiative.org/fact-sheet/colombo-stock-exchange/

- SAICM presentations made at international policy and scientific events – including five presentations at scientific community events, and ten at related policy events (biodiversity, cities, food systems etc)
- Convening of side events at OEWG and ICCM5 with active engagement of academia and the scientific community on EPIs and SDGs – including two project side events at OEWG3 and ICCM5, and 12 communications/ content pieces on HHPs, EDC/EPPPs, Lead paint, and CiP

Output 3.2 Knowledge Management platform provides a repository of information and forum for exchange of scientific and policy information

This output seeks to improve knowledge management, by providing a space for knowledge exchange instruments, and long-term engagement through active communities of practice on emerging policy issues. The platform will facilitate the tracking of data and progress on EPIs at a regional, national and global level. It will also ensure knowledge is accessible to stakeholders. This output responds directly to concerns raised by stakeholders on the insufficient sharing and dissemination of good practices, and successful implementation of SAICM. Activities on knowledge and content, and on establishing the architecture of the knowledge platform will be undertaken concurrently.

3.2.1 Developing new content – in close coordination with SAICM stakeholders including IOMC partners, civil society, and science/research stakeholders, activities include:

- SAICM Knowledge Management Strategy, completed in a participatory way, with input from SAICM stakeholders
- Knowledge exchange instruments featured on the Platform – including technical content on EPIs produced and submitted by project components (on HHP, EDC/EPPPs [from related MSP]; and lead paint and CiP); 50 knowledge exchange instruments, including maps and visual tools;
- Communities of practice – established and moderated for each project EPI (four in total)

3.2.2 Developing platform - Activities for SAICM Knowledge Management Platform:

- Knowledge Management Platform developed – completed through a contract in place with web architecture service provider(s) for an integrated platform including spatial and non-spatial data. Platform will include technical provision for maps and visual tools, and user engagement through Communities of Practice. The platform will be user tested, and stakeholders consulted at OEWG3.

4) Incremental/additional cost reasoning (expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing;)

Without GEF assistance, international activities on Emerging Policy Issues identified under SAICM are likely to remain uncoordinated, incoherent and ineffective. GEF assistance will ensure SAICM can provide guidance and leadership on EPIs, support developing 'champion' countries in addressing these issues in a coordinated and effective manner and, share lessons learned and knowledge with other countries.

Component 1 builds on the significant work of the Alliance and key NCPCs to ensure GEF funds are used in a truly incremental manner. The Alliance is well established, with agreed goals and a Business Plan to which all the member organizations are committed and significant experience and baseline tools and resources already developed (including Week of Action communication materials and advocacy and technical guidance such as the Model Law). These achievements and resources form the basis of the project and represent a significant saving in

terms of development of tools, allowing the project to focus resources on country rollout. The NCPCs involved in this project represent established, government endorsed, technically competent organizations, with a long track record of collaborating with the private sector and promoting cleaner production. By leveraging of this experience in this project the GEF funds are being used in a truly incremental manner. In addition, the two IPEN participating organizations, BaliFokus, and SRADev have significant experience in addressing lad paint in Indonesia and Nigeria respectively, meaning the funding provided to these organizations to continue engaging the private sector is truly incremental.

Component 2 similarly builds on significant existing initiatives by a particularly diverse group of stakeholders in the three sectors. The CHB CiP programme, established by the ICCM to lead work on CiP has developed a rich baseline of information on tools and approaches, largely by global brands, and has a strong network of private sector companies which may be considered leaders in their respective sectors, including the members of the CiP Steering Group who have been actively engaged during the PPG phase.

The USEtox model and its consensus-driven and inclusive governance setup has been a major initiative of UN Environment over the last years, and the development of the prototype model for near-field exposure modelling for building products in addition to the far-field model has been under development for 4-5 years with investment in the millions of dollars from research funders. By using this well-established tool and its near-field prototype the project resources will be focused on value chain engagement and roll-out.

The selection of Sri Lanka and Colombia for the roll-out of the SPP pilots was largely based on the prior experience and existence of key baseline resources in those countries, and proactive engagement both by the NCPC and GBCSL but also their respective government partners (procurement services). Resources available for final review and roll-out in the pilots include the existing review of CoC in electronics products for Colombia and the Sri Lanka National Green Building Code. While these require update and expansion to be more comprehensive on CoC, they represent an important 'head start' for the project in terms of stakeholder awareness and engagement as well as the technical documents themselves. The RMB will also be able to call upon the wider RECP network as a rich source of experience of SPP and toxics in LMIC, such as the Brazilian standards on electronics and building products.

Component 3 aims to establish an information repository for the sound management of chemicals, and a knowledge hub, where countries and other stakeholders can access up to date information, and join communities of practice for peer-to-peer learning exchanges. Incrementally, this builds on the information contained in the SAICM Clearinghouse, but brings it into a dynamic, accessible and useable platform.

5) Global environmental benefits

Humans and ecosystems are simultaneously exposed to multiple combinations of chemicals, multiplying uncertainty around impacts of exposure to individual chemicals. Many chemicals may feature in one or more categories. In this context, the chemical-by-chemical regulatory approach is increasingly unable to address the global environmental and health risks posed by these chemicals. The project will deliver the integrated, collaborative and multi-stakeholder approach needed.

In Component 1, the project will result in lead paint controls in 40 countries, and work directly with the paint industry in seven pilot countries to substitute lead in paint formulations for less hazardous alternatives. Through

Component 2, the project will develop and demonstrate new tools for managing harmful chemicals and waste in a sound manner. Component 3 involves the development of Knowledge Management Platform to help ensure that other stakeholders, including non-pilot countries, can benefit from project activities.

The project will help generate much-needed sex-disaggregated data, include gender analysis of user behaviour, and developing effective tools for specific target groups.

6) Innovativeness, sustainability and potential for scaling up

Component 1 aims to achieve regulatory action banning lead in paint in 40 countries. It represents the largest concerted effort to address lead in paint undertaken to date, and will involve activities in over 70 countries. The preparatory phase of this project involved a robust review of the national evolution, of lead in paint laws, and is proposing activities targeted to countries' specific placement in this framework.

The design of the project builds on the back of significant international momentum to ban lead in paint globally by 2020. All project recourses developed will be made available to other countries. The proposed methodology will be further refilled during project execution, and documented to facilitate scale up.

The project also includes significant investment in the involvement of the private sector, through the NCPCs. NCPCs are uniquely positioned to provide support, and the project will develop technical resources that can be taken up by other NCPCs, ensuring widespread support for SMEs attempted to formulate lead free paint.

Component 2 focuses on three specific CiP areas: buildings, toys, and electronics. In each sector the project aims to develop global guidance, to be made available and used by SAICM stakeholders, and pilot activities, to provide concrete examples and case studies at the national level. These national case studies will be made available through the Knowledge Management Platform in Component 3.

Component 3 establishes a dynamic Knowledge Management Platform including communities of practice and peer-to-peer learning. The innovative framework for this Platform has been designed with sustainability and scale-up of SAICM activities to be maximized.

The effective collaboration between numerous members of the IOMC will require close working relationships that will provide the conditions for sustainability and scaling up in the future. The close integration with the SAICM structure and mandate, especially in terms of strategic planning, monitoring progress, and knowledge sharing, means that project outputs in terms of knowledge management platforms, M&E systems, and strategic plans, will be designed and developed in a way that allows them to be adopted as future SAICM resources and ensure sustainability and scale-up. For example, the knowledge management platforms and systems developed can be used for further development of the SAICM Information Clearing House which is one of the responsibilities of the SAICM Secretariat.

A.2. Child Project? If this is a child project under a program, describe how the components contribute to the overall program impact.

NA

A.3. Stakeholders. Identify key stakeholders and elaborate on how the key stakeholders engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes ☒ /no☐)? and indigenous peoples (yes ☐ /no☒)? [93]

STAKEHOLDER	Engagement in project preparation	Proposed engagement in project execution	Component/Output
International			
UN Environment	Implementing Agency (IA) coordinated the development and design of the project, and consult with stakeholders.	IA, will be responsible for implementing the project, and overseeing Executing Agency (SAICM).	All
SAICM Secretariat	Executing Agency (EA) cooperated with UN Environment on the design and development of the project, working in partnership with the IA to consult executing partners and develop activities.	EA responsible for execution of the project; timely and quality delivery by partners; reporting and coordination. EA will play the key executing role on component 3 of the project.	All
WHO	WHO is a member of the Lead Paint Alliance and has driven the project design process during the PPG, including participation at the initial workshop and regular coordination calls. WHO was consulted for the knowledge management component.	WHO will be a key executing partner on LiP activities, notably supporting counties where MoH will be leading the national process to develop legislation. WHO will contribute health content for knowledge management and lead discussion forums including technical/ thematic papers on specific health topics and infographics/ animations	Component 1 and 3
IPEN	IPEN is a member of the Lead Paint Alliance and has driven the project design process during the PPG, including participation at the initial workshop and regular coordination calls. IPEN was also consulted upon for the knowledge management component.	IPEN will be a key executing partner on LiP activities, notably supporting counties with lead paint manufacture where it will promote industry participation. IPEN will contribute content for knowledge management and lead discussion forums including technical/thematic papers on specific topics in particular for gender related issues.	Component 1 and 3
ABA Roli	ABA-Roli is a new partner for the Lead Paint Alliance and has driven the project design process during the PPG, including participation at the initial workshop and regular coordination calls	ABA-Roli will be a key executing partner on LiP activities, notably providing legal assistance and support to countries in reviewing legal systems and drafting legislation based on the Model Law.	Component 1
US Environment Protection Agency	US EPA is the Chair of the Lead Paint Alliance and has driven the project design process during the PPG, including participation at the initial workshop and regular coordination calls	US EPA will be a key executing partner on LP activities, advising the partners on implementation issues and providing support with countries through its own programme of activities on LP.	Component 1

[93] *As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.*

UN Environment Chemicals and Health Branch	Attended LP an CiP PPG workshops and drove project design for both components.	CHB will be a key executing partner for both technical components, providing both technical support and responsible for ensuring effective communication and convening partners for participatory management.	Both components 1 and 2.
UN Environment Resources and Markets Branch	Attended CiP PPG workshop and drove project design for Component 2.	RM branch will be a key executing partner for the CiP component, delivering technical activities on USEtox and SPP, and ensuring coordination of project activities in Colombia and Sri Lanka.	Component 2.
UN Environment Finance Initiative	Was consulted during the PPG and provided country baseline and proposal for Component 2	Will deliver project activities on the building sector in Sri Lanka including promoting geen buildings in the finance and mortgages sector.	Component 2
Green Electronics Council	Was consulted during the PPG and provided sector baseline and proposal for Component 2	Will deliver their programme of cofinance activities in close collaboration with the project and share approaches and materials on ecolabels and certification with the Output 2.2 on electronics	Component 2
MapX, Global Green Knowledge Platform, SCP Clearing House, BRS Conventions	Were consulted during the PPG and provided guidance and technical input into the design of the KM platform architecture and concept, including the end-user focus in conceptualizing any KM system.	The project will develop and issue a call for proposals/ tender for the development of the software for the KM platform. One of these partners may be selected but	Component 3
University of Cape Town	Was consulted upon for the knowledge management component, including through email and phone calls	University of Cape Town will contribute content for the knowledge management including to the discussion platforms and technical/thematic papers on specific topics, in particular for pesticides and agriculture.	Component 3
IISD	Was consulted upon for the knowledge management component, including through email and phone calls.	IISD will develop content for the knowledge management including technical/thematic papers on specific topics, in doing so creating linkages to the IISD SDG Knowledge Hub and its communities of practice.	Component 3
OECD, UNITAR, FAO, IOMC	Were consulted upon for the knowledge management component, including through email and phone calls and regular interaction with the IOMC.	Will deliver their programme of co-finance activities in close collaboration with the project, sharing knowledge content to the repository, developing thematic papers, contributing to the discussion platforms and linking related databases[94].	Component 3
ISC3	Was consulted upon for the knowledge management component, including through email and phone calls.	Will deliver their programme of co-finance activities in close collaboration with the project, sharing knowledge content to the repository, contributing to the discussion platforms and linking related databases. Common interest areas specifically include: supporting engagement of organizations and universities in	Component 3

[94] For example, the existing OECD PFOS portal will be linked to the Knowledge Management Platform (http://www.oecd.org/chemicalsafety/portal-perfluorinated-chemicals/)

		developing countries, particularly the ISC3 regional hubs, in undertaking research studies or other activities related to emerging issues. Furthermore, the ISC3 has annual themes that are of relevance to link in, for example this year's is 'Sustainable building and living' with a focus on plastics.	
ICCM5 Bureau	Was consulted upon at their meetings held during the PPG phase.	Will continue to be informed on project development and to provide guidance on implementation in moving forward.	All components
National			
NCPCs Jordan, Ecuador, Peru, China; SRADev Nigeria and BaliFokus Indonesia	Attended PPG workshop on lead paint and shared national experiences.	Will deliver project activities on LP demonstrations of BAT/BEP for phasing out lead in paint production in SMEs.	Component 1
NCPC Colombia	Attended PPG workshops on LP and CiP and shared national experiences on both lead in paint and sustainable public procurement.	NCPC Colombia will deliver project activities in Colombia on both LP and CiP, including working with SMEs to phase out lead in paint production and with government to implement draft national SPP guidelines for electronics.	Components 1 and 2.
NCPC Serbia	Attended PPG workshop on lead paint, shared experiences and provided expert input into project design.	Will provide international technical expertise on BAT/BEP and coordinate work between NCPCs, ensuring consistency of approach, timeliness, and South-South cooperation, so that NCPCs can learn from each other. It is expected that NCPC Serbia will also provide support direct to SMEs on specific reformulation challenges.	Component 1
NCPC Sri Lanka and Green Building Council Sri Lanka	Was consulted during the PPG and provided country baseline and proposal for Component 2	Will deliver project activities on the building sector in Sri Lanka including testing and input to the USEtox model for building products and training of SMEs and suppliers to SPP processes.	Component 2
BCRC China	Was consulted during the PPG and provided country baseline and proposal for Component 2	Will deliver project activities on the tyos sector in China including testing and input to the USEtox model for toys and training of SMEs on national regulations on toy safety.	Component 2

A.4. Gender Equality and Women's Empowerment. Elaborate on how gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, considering the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes ☒ /no☐)?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes ☒ /no☐)?; and 3) what is the share of women and men direct beneficiaries (women min 30%, men 70%)? [95]

Women's and men's bodies are affected differently by certain chemicals – exposure, risk, and impacts can be different between the sexes. Vulnerable groups, including women (especially women of child bearing age), children (especially unborn children), the elderly, people with immune disorders and highly exposed workers including in the informal sector such as subsistence farmers, experience differential vulnerability, biological responses and impacts of exposure to chemicals.

Gender is also a social category, and as such is linked to gender-specific norms of behaviour, roles in society as well as 'feminine' and 'masculine' identities, which in turn influence people's behaviour, including their relationship to the environment, their affectedness by environmental changes and degradation, and their access to and power over resources. The primary objective behind the gender mainstreaming approach proposed in this project is to ensure that project activities: do not reinforce existing gender inequalities (that is, are Gender Neutral); attempt to redress existing gender inequalities (that is, are Gender Sensitive); or, attempt to re-define women and men's gender roles and relations (Gender Positive / Transformative).

The SAICM Secretariat will seek periodic input from IPEN on aspects related to gender. In December 2017, UN Environment signed a Memorandum of Understanding (MoU). The aim of the MoU is to increase cooperation between IPEN and UN Environment to work on issues related to gender and chemicals, through a focus on the following areas: (a) raising awareness of the impact to women and children as vulnerable populations to the health effects linked to chemical exposures, including creating opportunities for training and experience sharing and collecting relevant sex disaggregated data; (b) Promoting women's engagement and leadership in decision making processes at national and global levels; (c) implementing and contributing to activities related to SAICM Emerging Policy Issues and other Issues of Concern as well as related chemicals conventions and relevant Sustainable Development Goals.

Overall, there is currently no reference to gender within core Strategic Approach texts, however women are highlighted in both their biological roles and social roles as key populations several times. The SAICM secretariat prepared a document on 'Gender and the sound management of chemicals and waste' for the second meeting of the intersessional process in Stockholm in March 2018[96]. The document highlights that the 2030 Agenda for Sustainable Development and SDG 5 provide new and renewed opportunities to incorporate gender into decision-making. In designing the future framework for beyond 2020, all stakeholders have the opportunity to tap into the potential to address gender issues, promote equality and protect vulnerable populations in the context of sound managements of chemicals and waste. Results of this project will contribute into the discussion and decision-making related to the sound management of chemicals and waste beyond 2020.

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[95] Same as footnote 8 above.

[96] http://www.saicm.org/Portals/12/documents/meetings/IP2/IP_2_6_gender_document.pdf

Gender cuts across all project components, and during the project preparation phase a gender review was undertaken, and proposed gender disaggregated indicators included in the Project logical framework. The specific ways in which gender is considered in each of the project components is outlined in the following paragraphs.

They mainly focus on:

- including relevant stakeholders, drawing on existing expertise and experience within and outside governments;
- providing target group specific information and materials and using specific outreach and engagement strategies where needed to inform and engage women and men; and
- building knowledge and expertise on gender in the SAICM realm of activities, while identifying data and knowledge gaps where they exist and encouraging research to address these gaps.

Specifically, the following activities related to gender, are included in each of the project components.

Under **Component 1** the following gender related activities are planned**:**

- mapping of stakeholders will include women's organisations and networks, and awareness raising with SMEs will include occupational health and user exposure risks disaggregated by sex/physical differences and differences due to gender roles, wherever possible and necessary;
- Inter-ministerial drafting group and stakeholder meetings will include gender equality related Ministries, Ministries for Women, or other governmental institutions. Stakeholder meetings will include women's organization and gender experts;
- Awareness raising activities developed will take into account expertise on women's and gender issues, e.g. through active outreach to women's organisations and gender experts and their inclusion in guiding and designing awareness raising activities with a view to target group specific messaging and engagement; and
- Outreach, messaging and engagement will include target group specific activities and materials as/if needed; best through advice from gender experts.

Under **Component 2,** the following gender related activities are planned:

- Stakeholders identified will include gender equality related Ministries or other governmental institutions as well as women's organisations and gender experts;
- Target group specific information, messaging and outreach, will be used, and testing completed to confirm it works to complete women and men;
- Review relevant research and take into account possible sex and gender differences (e.g. presentation at the workshop)

Under **Component 3,** the following gender related activities are planned:

- Capacity building activities such as workshops, webinars, training materials and programmes will include a gender perspective, bringing in women's organizations and gender experts and researchers;
- Gender review mapping of EPIs related to sex differences and gender differences; consultation with gender experts; and identifying data and knowledge gaps and research recommendations related to gender and EPIs;
- Ensuring equal participation by women in the Knowledge Management platform, in particular as presenters/ experts in the interactive Communities of Practice;

- Further developing existing SAICM work on gender and chemicals including producing a thematic paper on gender;
- Gender will be mainstreamed into all knowledge products as appropriate; products will be reviewed by gender experts; and user and perception testing will be undertaken.

These activities will be overseen by the Stakeholder Outreach Consultant, whose terms of reference will explicitly include development, monitoring and reporting of gender aspects of the project. They will be supported and guided by the Chemicals and Waste Branch Gender Focal Point who will ensure that gender activities are developed in line with wider UN rights-based approaches and best practices.

A.5 Risk. Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation. (table format acceptable):

RISK	RISK RANKING	MITIGATION MEASURES
Political will and attention to address voluntary EPIs	Low	Significant efforts will be made during the PPG phase to understand the needs of each participating country, and to broaden awareness of the project among stakeholders. In **Component 1** the status of lead paint regulation has been assessed, and activities defined based on the current stage each country is at. A multistakeholder approach is being undertaken in Component 1, as evidence from recent projects indicates the need to build national momentum. The proposed decision tree process is country-driven with project resources directed on the basis of national roadmap needs set out by governments.
SMEs are unable/unwilling to phase out lead in paint (Component 1)	Medium	The PPG involved extensive baseline data collection from SMEs in the selected countries, manufacturing paint containing lead, and consultations with these SMEs to ensure buy-in to project activities. There is strong buy-in to project activities, as consultations indicated there is a desire to phase out lead, but that support is needed to overcome technical barriers.
Limited government commitment and/or capacity to apply SPP guidance	Medium	The countries selected for the SPP guidance development and roll-out were selected on the basis of the proactive responses by the in-country partners (NCPCs and GBC). These partners have excellent relations with government procurement services and well placed to follow up. The inclusion of a finance/ investment activity will also address this risk for the building sector by creating additional incentives for SPP.
USEtox model is not user-friendly for value chain actors	Medium	The LCA tool is likely to require some familiarity by users with modelling approaches. The project design provides for close engagement of manufacturers with the researchers throughout the process, starting from sharing of information on CoCs and alternatives they currently use. This will be supported by explicit capacity building and training sessions in the regions.

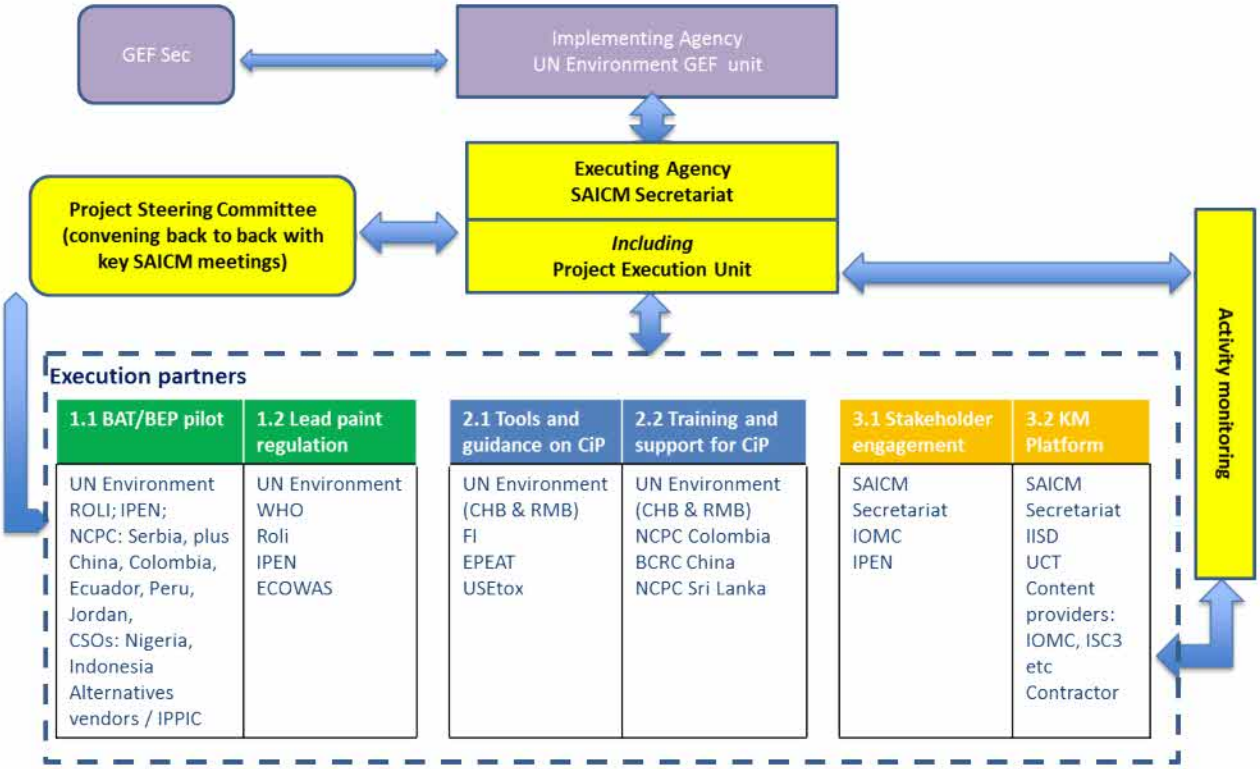
Lack of stakeholder, community and NGO interest in the project	Low	Stakeholders are actively engaged with the emerging issues addressed in this project. Project preparation workshops were convened for Component 1 and Component 2 and were both well attended by NGOs. These NGOs have remained active in the project document preparation.
Lack of collaboration between IOMC agencies, and other delivery partners	Medium	The large number of delivery partners involved may be difficult for the Executing Agency to manage. Close attention has been paid during the PPG to agree the detailed scope of activities for each partner, and with the IOMC as a whole, but also a coordinating mechanism for decision making by component, which gives each partner a strong voice in technical decision making.
Impacts of climate change on the project	Low	The project technical support partners will keep climate change risks under review on a country-by-country basis, once interventions have been defined and are being rolled out. As a global project will predominately policy level interventions and no field activities, extreme weather should not particularly affect activities. The issue of climate impacts on policies will be reviewed as part of the KM component.
Low or difficult access to internet in LMIC	High	The KM platform development will be based on the KM Strategy to be developed in the early stages of the project. This strategy will be developed in a participatory manner, including input from countries, and will propose measures to ensure accessibility of the information to all stakeholders. In addition to using diverse channels for knowledge exchange, including face to face, publications, and others, the KM platform can also be designed to be accessible via mobile phone as this may be more accessible for users in countries with poor internet.
Project delays caused by related MSP project not being executed/ on time	Medium	This project and the SAICM MSP project are linked and will be executed in an integrated manner. Delays in submission, approval, internalisation, or inception of the MSP would impact the execution of this project. This risk is being managed carefully by the EA, with ongoing measures being taken to ensure GEF ID 9771 is submitted within one month of the MSP submission, to ensure the projects are kept in lockstep.
Iterative process for contracting country level activities for lead in paint is difficult to administer	Medium	The global partners who will provide support to country processes according to the decision tree will only have clarity on the exact number of countries and scope of support required per country, after the regional meetings. A second/iterative contracting step will be required to allocate project resources. This risk is managed by the EA administrative support provided by the PMC; and will be coordinated by the UN Environment CHB. The mitigation measure is to put in place an initial framework contract with each partner, and a simplified disbursement process for the second step.

A.6. Institutional Arrangement and Coordination.

Describe the institutional arrangement for project implementation.

Implementing Agency (IA): This project will be implemented by UN Environment. Please refer to Figure 4 below for the proposed project institutional structure. UN Environment will be responsible for the overall project supervision, overseeing the project progress through the monitoring and evaluation of project activities and progress reports. It will report the project implementing progress to GEF and will take part in the Project Steering Committee (PSC). UN Environment will provide guidance and oversight of project execution by the EA with review and approval of work plans, budget allocations and budget revisions proposed by the Executing Agency.

Figure 4: Proposed project implementation structure



Executing Agency (EA): The SAICM Secretariat will be the EA, and was identified as the only organization with the necessary structures in place for the close collaboration required with a diverse set of stakeholders. In addition the Secretariat is assessed as the organization best placed to provide the cross cutting programme management of the different components and provide sustainability of project results.

The SAICM Independent Evaluation found that "integration across sectors is a key pathway to achieving the 2020 goal". The success of SAICM in building trust and collaborative relationships between stakeholders is evidenced by the degree of open and transparent sharing of information that already exists between them. Building on this trust and collaboration through the efforts of this project will further strengthen the open and transparent sharing of information pathway.

The SAICM Secretariat is uniquely positioned to work across sectors in a multi-stakeholder manner with active networks and stakeholder communities in place. The collaborative nature of this project supports progress towards the 2020 goal and will be further enhanced with greater efforts of sectors and stakeholders beyond 2020 in line with the 2030 Agenda for Sustainable Development.

The EA's key roles include:

- Establishing, housing and supervising the project execution unit (PEU)
- Acting as Secretariat for the Project Steering Committee (PSC)
- Overseeing that the project runs according to the agreed work plan, budget and reporting tasks
- Communicating with, and disseminating information to SAICM stakeholders
- Coordinating project activities with those of the SAICM MSP, for which SAICM is also EA.

The EA will be contracted through an Internal Cooperation Agreement.

Project Execution Unit (PEU): The PEU will be staffed by a Knowledge Management Officer, a Stakeholder Outreach consultant (shared jointly with SAICM MSP) and an administration and finance officer (shared jointly with SAICM MSP). The role of the PEU is to:

- Ensure Project execution (all technical aspects of project implementation)
- Ensure project governance and oversight of the financial resources from GEF investment
- Provide staff time and expertise in guiding and advancing the project
- Sharing all achievements and project products/outputs with SAICM stakeholders
- Monitoring the execution of project components by the executing partners, UN Environment CHB (Component 1) and UN Environment RMB and CHB (Component 2). SAICM Secretariat will execute Component 3 directly.
- Organize the PSC meetings and serve as its Secretariat
- Management and implement the project results and output level M&E framework, to evaluate project performance
- Manage the flow of information from the field, producing periodic monitoring reports.

Outputs and activities will be driven by a SAICM Knowledge Management Officer who will be hired within three months of receipt of the project funds. This Officer will be based within the SAICM Secretariat and lead Knowledge Management activities under Output 3.1 and 3.2. They will also provide direct support for project management, pulling together the progress and information across all three project components to meet EA reporting obligations.

A number of UN Environment staff will contribute staff time and expertise in guiding and advancing the outputs of the project through UN Environment's in-kind support. Furthermore, key project execution partners UN Environment CHB and RMB will be contracted via internal cooperation agreements directly by the SAICM Secretariat, with a clearly defined set of activities and resources which have been agreed during the PPG (please refer to the Annex G). Co-finance from these partners covers the staff time and costs for coordination of the project activities with the ongoing programmes of work. The component coordinators will manage delivery and reporting by other project execution partners, including convening regular partner meetings (either in person or remotely). For Component 1, this process will be led by UN Environment CHB, with WHO, ROLI, IPEN, USEPA, NCPC Serbia, plus a country representative from the Global Alliance; for Component 2 this will be coordinated jointly by CHB and RMB co-leads, with USEtox, the NCPCs (Sri Lanka and Colombia), BCRC China, Green Building Council, and the Green Electronics Council. For Component 3,

this process will be led by the SAICM Secretariat, with the chair of the IOMC, IISD, a representative from the Green Growth Knowledge Platform, WHO and a SAICM Regional Focal Point. These meetings/ calls will serve to:

- Update on the development of the component
- Substantive discussions covering thematic topics of interest to partners related to the outputs of the component
- Make recommendations for the Project Steering Committee (such as annual workplans and budgets and changes in project delivery as required).

The Executing Agency for this project will consult regularly with the IOMC through the six-monthly meetings and seek input into technical outputs of the project as appropriate. The IOMC plays an important role in the multistakeholder coordination and engagement function of the SAICM Secretariat and is an important channel to ensure the project results and activities are widely disseminated to countries, other stakeholders and networks.

PSC: The PSC's membership includes IA, EA, UN Environment CHB and RMB, WHO, the Chair of the IOMC, NCPC Serbia, and relevant national government representatives, to be nominated by the SAICM ICCM5 Bureau. The role of the PSC is to:

- Oversee the GEF Project
- Provide overall guidance and ensure coordination between all parties
- Provide overall supervision for project implementation
- Approve the annual work plan and budget
- Oversee the implementation of corrective actions
- Enhance synergy between the GEF project and other ongoing initiatives related to chemicals and waste

Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

The project is innovative under GEF portfolio which has supported very limited other projects for SAICM and the EPIs. The work in Sri Lanka, Colombia and China will draw from the Stockholm Convention National Implementation Plans where they are available, and liaise closely with relevant project structures in those countries (e.g. Enabling Activities to update the National Implementation Plan for the Stockholm Convention on POPs, e.g. in Colombia).

Additional Information not well elaborated at PIF Stage:

Component 1: Component 1, Output 1.1 focuses on executing pilot projects with NCPCs in eight countries. Extensive consultation with project partners, and review of lessons from previous projects, underscored the need to work through established national entities to effectively execute and manage activities with private sector partners. The NCPCs' work will be coordinated by the Serbian NCPC whose personnel have extensive and specific experience in paint reformulation. Output 1.2 involves technical assistance from UN Environment, WHO, IPEN, and adds the legal expertise of the Roli. Assistance needs have been defined according to where each country falls in the process of developing legislation on lead paint. In addition, the final design draws on the comparative advantage of WHO having national offices in each project country. These offices will have a key role in convening stakeholder meetings, and reporting back to the regional execution nodes.

Component 2: The structure of the component in the PIF was based on two outputs on a platform for reporting; and improving product design to reduce CoC respectively. At the CiP PPG workshop the stakeholders recommended the

need for sector-specific approaches, given the diverse contexts for different product value chains, and proposed sector-specific indicators to facilitate communication and engagement in those sectors. The component activities are therefore organized with distinct activities and indicators for building products, electronics and toys respectively. The approach of promoting transparency on CoC and using this to stimulate phase-out of CoC remains unchanged from the original concept.

Component 3: The PIF included an additional output on 'strategic planning' and specifically on developing indicators for the EPIs which has been removed from the current proposal. The development of indicators for SAICM is being addressed via the intersessional process for Beyond 2020. Measuring progress on the EPIs goes beyond the scope of a timebound project and should be an integral part of the wider Beyond 2020 monitoring of progress. The output was therefore modified into an activity under the new Output 3.1 which will provide resources to develop a paper that reviews progress on the EPIs based on the FSP and MSP project results. It is anticipated that this will follow a structure of indicators to be proposed by the Beyond 2020 process, if such an indicator proposal is available in a timely manner, that will test any proposed structure with the specific EPIs proposed by the Beyond 2020 process.

A.7 Benefits. Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

Under Component 1, the project intends to improve health and environment through the reduction and elimination of lead paint in 40 countries. The project will provide support to 70 countries in total, and it is anticipated that 40 will achieve regulatory controls in the life of the project. Activities include awareness raising events for stakeholders on the harmful impacts of harmful lead, which will be increased in all 70 project countries. The project will also work with the paint industry on pilot BAT/BEP activities in seven countries, to help SMEs transition to lead free alternatives.

Under Component 2, activities in the toys, electronics, and building sector are expected to lead to reduction in the use in hazardous chemicals, decreasing exposure of those involved in manufacturing these products, as well as the individuals buying and using them, and those who are involved in waste management, particularly for e-waste.

Component 3, on Knowledge Management and stakeholder engagement will serve to magnify the global environmental benefits and health benefits of the activities in Components 1 and 2, through sharing them, and lessons learned with SAICM stakeholders internationally, ensuring opportunities for replication and scale-up. Component 3 will build linkages to the 2030 Agenda for Sustainable Development and to this effect will contribute to the political will of national governments in considering SAICM and the sound management of chemicals and waste beyond 2020.

A.8 Knowledge Management. Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

Knowledge management forms a key Component within this global project. The project will develop an integrated Knowledge Management Platform, to bring together information, and stakeholder communities on SAICM, with links to the SDG targets. The Knowledge Management Platform will also provide a space for project documents, outputs,

and lessons learned to be featured in a user-friendly format. Maps and visual tools will be constructed and tested, using partner databases.

There will be a focus on the EPIs. The project will establish four moderated communities of practice, directly to corresponding to the EPIs being addressed in this project (Lead Paint, and CiP) and in the related MSP (HHPs, and EDCs/EPPPs). These communities will provide stakeholders from pilot countries, as well as scientists and practitioners from around the globe, a space to share ideas, data and knowledge, with and from other similar projects and initiatives, and ensure opportunities for networking building and communication through the use of technology and social media.

In addition, provision has been made for presentations at EPI relevant scientific conferences, to bring the scientific community, SAICM stakeholders and the SDG community closer together, and for members of the scientific community to present at key SAICM events – OEWG3 and ICCM5.

With respect to enhancing collaboration with the SDG community, the knowledge management component will establish linkages with existing knowledge networks/ platforms addressing chemicals management, SDGs and the 2030 Sustainable Development Agenda. The project will produce strategic outreach papers and materials including policy papers on SGDs and thematic papers, including a gender review.

B.1 Consistency with National Priorities. Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.:

Resolutions from the SAICM community as adopted at ICCM4 have been the driver for the project design. In addition to the technical resolutions as described in the Baseline section, the Conference also endorsed Overall Orientation and Guidance (OOG) for achieving the 2020 goal of sound management of chemicals (SAICM/ICCM.4/6). The project contributes to all six core activity areas of the Overall Orientation and Guidance.

From 2008 to 2012, the Quick Start Programme supported National Profiles and SAICM Implementation Plans in over 50 countries (http://cwm.unitar.org/national-profiles/nphomepage/np3_region.aspx). A process of stakeholder consultation and engagement led to these national strategic documents and action plans, and they contain the nationally identified priorities for chemicals management. The PPG phase involved extensive consultations with countries and other stakeholders.

For Component 1, this involved a review of national activities pertaining to lead paint, and classifying them according to a framework of evolution for lead paint regulation (Table 2, above). Countries on the right side of this framework have signalled the strongest commitment to instituting lead paint regulation. Countries on the left side of the framework have signalled their interest, but have made less progress. Project resources will be directed accordingly. At a regional level, the ECOWAS Secretariat was mandated by Ministers of the Environment of its member states to develop lead paint regulations in a regionally coordinated manner, at the 2017 AMCEN meeting.

For Component 2, the PPG phase organized a consultation workshop with representatives from the toys, electronics and building sectors, by reaching out via the CiP programme steering group and the RECP Net network. A survey to NCPCs resulted in the identification of Sri Lanka and Colombia as being committed to acting on these issues, including existence of a draft SPP national policy for electronics in Colombia and elements of the Sri Lanka Green Building Code.

For Component 3, maps and visual tools constructed will be built from data that is consistent with the SAICM emerging policy issues and the 11 basic elements identified by SAICM stakeholders in the Overall Orientation and Guidance in addition to data generated by the project.

C. Describe the budgeted M&E plan:

Project M&E will be conducted in accordance with established UNEP and GEF procedures and will be provided by the SAICM Secretariat. The M&E plan includes inception report, annual review and final evaluations. It also includes provision for ongoing monitoring of the execution of project components by a Stakeholder Outreach consultant, based in the Project Execution Unit at SAICM Secretariat. The Monitoring consultant will also be responsible for stakeholder engagement, gender monitoring, and outreach to the broader SAICM community.

The project's M&E Plan will be presented and finalized in the Project's Inception Report following a collective fine-tuning of indicators, means of verification, etc.

Table 4: Monitoring and Evaluation Plan

M&E activity	Purpose	Responsible	Budget (US$)	Time-frame
Inception workshop	Review of project activities, outputs and intended outcomes; detailed work planning	EA	Included in EA fee	Within two months of project start.
Inception report	Provides annual progress review and detailed annual implementation and budget planning	EA	Included in EA fee	Immediately following Inception Workshop
Project Steering Committee	The PSC will be held annually, in line with SAICM stakeholder meetings wherever possible (e.g. the Open Ended Working Group or ICCM). Provides annual progress review and detailed annual implementation and budget planning, including revisions to key documents such as procurement plans and Risk Table.	EA	200,000 for 3-4 meetings	At least annually Additional component-specific coordination/ advisory meetings will also be held to support preparation of recommendations to PSC.
Ongoing monitoring and gender mainstreaming	This activity will be ongoing to allow continuous monitoring of the execution. The Monitoring consultant will also ensure links are made between SAICM Focal Points, health ministries and environment ministries.	Stakeholder Outreach consultant	15,000	Ongoing
Travel for project monitoring	This will include travel of the Monitoring consultant to Component meetings convened regionally or nationally under Components 1 and 2.	Stakeholder Outreach consultant	15,000	1-2 missions per year, depending on needs e.g. to unlock bottlenecks or support partners
Midterm Review	Reviews progress and draws lessons on implementation issues and impact of project activities to date. Proposes corrective actions as required.	Consultant	40,000	At the midterm of the project

Terminal report	Reviews effectiveness against implementation plan Highlights technical outputs Identifies lessons learned and likely design approaches for future projects, assesses likelihood of achieving design outcomes	EA	Included in EA fee	At the end of project implementation
Independent Terminal evaluation	Reviews effectiveness, efficiency and timeliness of project implementation, coordination mechanisms and outputs Identifies lessons learned and likely remedial actions for future projects Highlights technical achievements and assesses against prevailing benchmarks	UNEP Evaluation Office	80,000[97]	At end of project implementation
Independent Financial Audit	Reviews use of project funds against budget and assesses probity of expenditure and transactions	EA	Included in the UN Environment audit	At the end of project implementation
Total indicative Monitoring &Evaluation cost			**$350,000**	

[97] This terminal evaluation will be conducted jointly with the SAICM MSP project, which will provide an additional contribution of USD 20,000 to the total evaluation costs.

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies[98] and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address

[98] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, SCCF and CBIT

ANNEX A: PROJECT RESULTS FRAMEWORK and THEORY OF CHANGE

(either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Project Objective	Objective level Indicators	Baseline	Targets and Monitoring Milestones	Means of Verification	Assumptions & Risks	UNEP MTS reference
Accelerate adoption of national and value chain initiatives to control Emerging Policy Issues (EPIs), and contribute to the 2020 SAICM goal and 2030 Agenda for Sustainable Development	1. No. of countries and companies that have adopted regulatory and value chain initiatives to control EPIs, and to meet 2030 Agenda targets.	68 countries have regulated lead paint. Currently, there is no comparative assessments of direct toxicity of products containing POPs and other CoCs, including toys, building products and electronics.	Composite indicator (Outcomes 1, 2 and 3) = 40 governments pass lead laws + 50 paint producers + 2 governments with SPP + 26 companies using USETOX/ phasing out CoC. By 2020, at least 2 manufacturers in LMIC demonstrate reduced toxicity of products.	CoP reports on EPI USEtox model	Political will exists for taking recommended measures Alternatives to CoC exist in LMIC markets	NA
Component 1: Promoting regulatory and voluntary action by government and industry to phase out lead in paint						
Outcome 1	**Outcome Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**UNEP MTS Expected Result**
Countries legislate and implement legislation to restrict the use of lead in paint (LiP, 40 countries)	2. No. of countries with adopted legislation on legal limits to LiP	As of February 2018, 68 countries have regulated lead paint. The PPG involved extensive research, consultation and classification of countries into a framework for action. The project has identified 70 countries where there is evidence the country is ready to regulate lead paint.	80 countries by Year 2 (existing champion countries) 110 countries by 2020	Gazetting (or equivalent) or legislation	Governments are proactive. Project has adequate resources to provide legal drafting assistance to 50 countries.	Chemicals, Waste and Air Quality Expected Accomplishment 5 (a) 3[99]
	3. No. of paint manufacturers switching to lead free production	While some global brands have phased out lead, SMEs in project countries still continue to produce paint with lead as demonstrated	50 manufacturers by 2020 in 8 countries	Independent testing of paints	Lead free methods are either cost neutral or	

[99] Technical guidance and support services for the establishment and enforcement of laws, regulations and fiscal policies for sound chemicals management

		by lead paint testing (see output level baseline below)			imposed by regulation	
Outcome 1 Outputs	**Output Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**UNEP PoW Output Reference Number**
Output 1.1 Demonstration pilots with paint manufacturers in Small and Medium Sized enterprises executed in eight countries	4. No. of SMEs executing demonstration pilots. 5. No. of countries with demonstration pilots 6. No. of pilot country governments receiving legal drafting advice	Pilot countries (Ecuador, Colombia, Peru, China, Indonesia, Jordan, and Nigeria) have significant paint industries. In all of these countries lead concentrations in paint is currently unregulated, or under-regulated, and lead pigments and driers are used by SMEs in paint formulation. **Ecuador** paint testing found 70% of paints samples had lead concentrations > 90 ppm. **Colombian** paint testing found that 64% of paints samples had lead concentrations > 600 ppm, with 59% of paints with lead concentrations >10,000 ppm. Paint testing results in **Peru** indicated 90% of paints had lead concentrations >90 ppm, and 40% of paints had concentrations >10,000 ppm. In **China**, paint testing found 34% of paints contained lead concentrations > 10,000 ppm. China currently has a non-protective standard of 90ppm – 1000ppm for soluble lead, depending on paint use. **Indonesian** paint testing found	**Mid-term** 8 demonstration pilots finalize national paint sector reviews 4 governments receiving legal drafting support from Roli **End of project:** Pilot demonstrations completed in 8 countries 8 governments receive legal drafting support from Roli and draft legislation 30 SMEs executed demonstration pilots	NCPC/IPEN reports NCPC/IPEN / Roli reports NCPC/IPEN / Roli reports Report	SMEs are able to phase out use of lead in paint	Subprogramme 5 Chemicals, waste and air quality: Expected accomplishment a, indicator (ii)[100]

[100] Increase in the number of private companies/industries that have developed or implemented a strategy or specific actions on sound chemicals management using UNEP analysis or guidance

		78% of paints sampled had concentrations greater than 600 ppm, and 41% of paints had a lead concentrations greater than 10,000ppm. In **Jordan**, there is a nonprotective legislation of 600ppm and the government plans to introduce a more stringent limit. 18% of paints tested had lead concentrations >90ppm. A **Nigerian** paint study found 74% of paints sampled to have lead concentrations > 90 ppm, with 54% have concentrations >10,000 ppm.				
Output 1.2 Policy support and awareness raising generate support for lead phase out.	7. No. of governments receiving legal review/ drafting assistance on lead in paint restriction 8. No. of registered events for the International Lead Poisoning Prevention Week	The Lead Paint Alliance provides ad-hoc support to countries and tracks the number of countries regulating lead in paint. A Model Law has been developed but not systematically rolled out with countries. The number of countries hosting International Lead Poisoning Prevention Week events has remained stable over time (40 countries in 2013; to 41 countries in 2017), indicating the growing awareness needed to take action on this issue, is not occurring, and that more work is needed.	**<u>Mid term</u>** 20 countries receiving drafting assistance. Events convened in 15 countries for International Lead Poisoning Prevention Week **<u>End of project</u>** 50 countries received legal assistance 20 countries convening events for International Lead Poisoning Prevention Week	Regional workshop reports (containing national project plan) ABA Roli mission reports (on national drafting workshops) Lead Paint Alliance website Project reports	Governments receptive to working with the project to expedite lead paint regulation. Pressure from industry does not prevent governments regulating lead paint.	Subprogramme 5 Chemicals, waste and air quality: Expected accomplishment a, indicator (i)[101]
Component 2: Lifecycle management of chemicals present in products						
Outcome 2	**Outcome Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**UNEP MTS Expected Result**

[101] Increase in the number of countries that have used UNEP analysis or guidance, and where possible are applying a multi-sectoral approach, in developing or implementing legislation, policies or action plans that promote sound chemicals management and implementation of the relevant multilateral environmental agreements and SAICM

Governments and value chain actors in the building products, toys, and electronics sectors track and manage chemicals of concern (CoC) in their products	9. Number of governments and value chain actors tracking and managing CoC in products	Global brands and companies selling in developed countries should meet regulatory and voluntary chemical management requirements (e.g. product recalls for toys). Sustainable Public Procurement (SPP) policies exist in many countries but do not explicitly address CoC	2 governments set SPP and green building code requirements for CoC (*Sri Lanka & Colombia*) 6 companies meet SPP CoC requirements (*Sri Lanka, Colombia)* 20 companies use USEtox tools to evaluate toxicity (*Sri Lanka, China*) 10 companies report toy audit results on UNEP / CiP portal (*China*)	Green Building Code / tender documents USEtox reports	Governments are committed to implementing their published SPP policies	Subprogramme 6 on Resource Efficiency, EA b, Output 1, indicator (i)
Outcome 2 Outputs	**Output Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**UNEP PoW Output Reference Number**
Output 2.1 New tools and guidance to reduce the use of CoCs in the building, electronics and toys sectors	10. No. of new tools and guidance developed for the building sector 11. No. of new tools and guidance developed for the electronics sector 12. No. of new tools and guidance developed for the toys sector	Life cycle assessment tools include t hazardous chemicals but few alternatives. Near field (=direct) exposure pathways limited in USEtox; and multi-layer materials are not modelled. Sri Lanka Green Building Code covers VOC and green labelled building materials including GREEN Product Labelling System which considers chromium 6 and lead in paints. Brazil: voluntary standard (PBQP-H) used in public procurement	**Mid-term** Report on CoC and alternatives in building sector (global) Cost benefit analysis for electronics SPP practices (Colombia) 2 regional electronics studies (LAC and CEE) Report on chemical concentrations in toys and regulatory compliance in China **End of project**	Reports USEtox	Alternatives to CoC exist and are accessible to producers in LMIC markets; the USEtox model is suited to their needs. International building council and global initiatives have capacity to address all their stated priorities including healthy buildings. Limited government commitment to	From LC Initiative: 621102 Subprogramme 6 on Resource Efficiency, EA b, Output 1, indicator (i)[103] Subprogramme 6 on Resource Efficiency, EA b, Output 1 (ii)[104]

[102] Database services providing enhanced availability and accessibility of life cycle assessment data through an interoperable global network, methods for establishing environmental and social indicators and the ways to apply them in decision-making, practical tools for the application of life cycle information in decision-making, and capacity development

[103] Increase in the number of public and private stakeholders that base their decision-making on life cycle approaches

[104] Increase in the number of public and private finance stakeholders that adopt sustainable finance principles, processes and frameworks

		includes lead free paint, lead and cadmium free coatings and porcelain, flame retardants for walls and roof Green finance for buildings exists but does not address chemicals. Colombian National Policy for WEEE and technical sheets prioritize cadmium, chrome, lead and mercury, plastics with flame retardants, and CFCs, PCBs, Ozone Depleting Substances. US-based IT sector standards including EPEAT include criteria that assess corporations' commitment to responsible chemicals management throughout their supply chain EU RoHS legislation on electronics applied in 33+ countries beyond EU, contains 6 CoC. Amfori trade association chemical audit and reporting tool (for members only)	*Building sector: 3 guidance/ tools*: USEtox assessment of building product impacts on human health, ecotox and other metrics SPP global guidance for building products; Global guide for banks on setting up green mortgages *Electronics sector: 2 guidance/ tools*: Global guidance of SPP of electronics (including Colombia pilot case study) Global review of voluntary consensus standards for electronics *Toys sector: 2 guidance/ tools:* USEtox new model pathways added and tested with manufacturers Simple training and audit package for SMEs / non-affiliated companies	Publications Tender documents Publications USEtox model Publication	implementing agreed SPP guidance and criteria. Government procurement services will implement their policy. Electronics that comply with EU ROHS legislation at a minimum are available in LMIC SME and 'non-affiliated' toy producers are engaged to reduce toxic contents, driven by regulations in export markets	Subprogramme 5, EA (a), indicator (ii)
Output 2.2 Training and support for government and value chain actors to trial and adopt new guidance and tools	13. Number of value chain and government actors consulted and trained in new tools and guidance	Finance Initiative Environmental and Social Risk Analysis Training Programme – does not cover CoC. USEtox summer school organized every 2 years with support from	**End of project** Green Building Council/NCPC events = 50; USEtox Summer School = 20;	Training Reports	Project partners are able to build momentum within project local markets	Subprogramme 5, EA (a), indicator (ii)

	14. Minimum 30% of training participants female		FI training = 100 Toy producers (China) = 50 Multistakeholder consultations, with Chinese enforcement agency, toy manufacturers and associations = 50 International consensus building workshop for electronics = 35		for companies to participate in trainings	
Component 3: Knowledge management and stakeholder engagement						
Outcome 3	**Outcome Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**UNEP PoW Output Reference Number**
A broad group of SAICM stakeholders access information and participate in communities of practice for peer-to-peer learning exchanges.	15. No. of active members of KM communities of practice and users accessing information	The current SAICM website is static, new content and information updates are limited. There is no forum for interaction and communication between stakeholders. Currently resources for maintenance and performance are lacking.	**Mid-term** 4 Communities of Practice (CoPs) established **End of project** >100 active members in each CoP with gender balance (min 30% women)	CoPs on KM Platform Registered members	SAICM stakeholders have an appetite for exchanging information on EPIs	Subprogramme 5 Chemicals, waste and air quality: Expected accomplishment a, - 6
Outputs	**Output Indicators**	**Baseline**	**Targets and Monitoring Milestones**	**Means of Verification**	**Assumptions & Risks**	**UNEP PoW Output Reference Number**
Output 3.1 Collaboration and engagement with the SDG and scientific	16. No. of strategic outreach papers and materials produced 17. No. of SAICM presentations at	Despite there being strong conceptual links between EPIs and the targets included in the 2030 Agenda for Sustainable Development, there is currently no	**Mid-term** Target = 12 papers (5 policy briefs on SDGs 2, 3, 6, 11, 12; 5 thematic papers on water, cities,	Policy briefs Thematic papers	Assume the science and academic community are wiling to engage	Subprogramme 5 Chemicals, waste and air quality: Expected

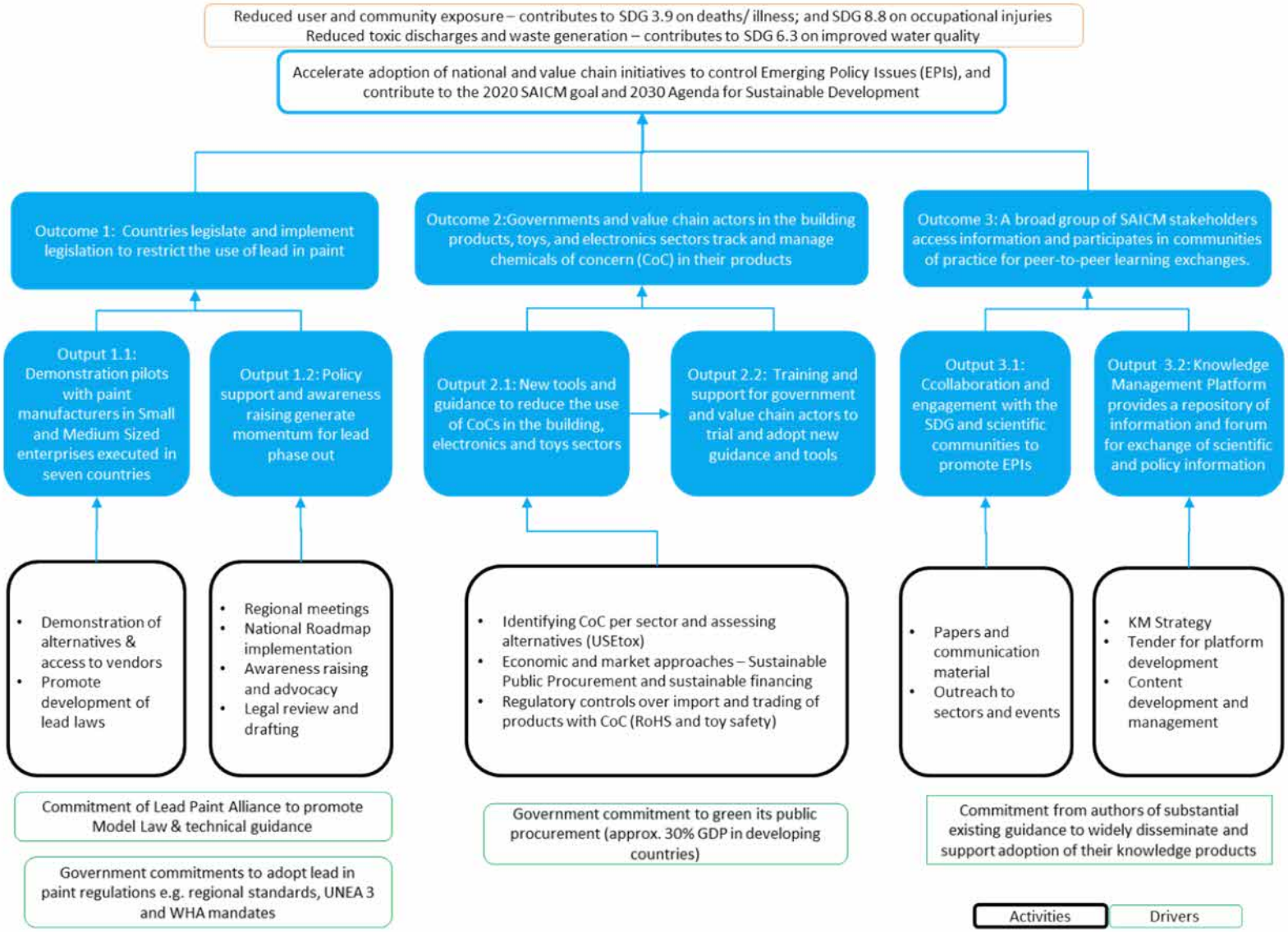
communities to promote EPIs	international policy and scientific events 18. No. of side events at OEWG and ICCM5 with active engagement of academia and the scientific community on EPIs and SDGs	coordination between the two areas of work. EPI work is currently being driven by the proponents of the EPI within the SAICM process and the IOMC lead agencies, with limited engagement of a broader stakeholder community. ICCM resolution IV/4 indicates that the Beyond 2020 process should be linked to the 2030 Agenda. SAICM's 20 indicators of reporting progress[105] are being revised by the Beyond 2020 Intersessional Process. Revised indicators are expected to be more results-focused and relevant for diverse stakeholders to be able to align to. They will also link to the SDG targets.	science etc; 1 gender review mapping EPIs and identifying gender priorities; 1 indicators mapping paper reviewing contribution of EPIs to indicators of progress/ impact) **End of project** 5 presentations on SAICM at scientific community events 10 presentations at related policy events (biodiversity, cities, food systems etc) 2 project side events at OEWG and ICCM5 12 communications/ content pieces on HHPs, EDC/EPPPs, Lead paint, and CiP	Gender review report Mission reports Side event reports EPI content on KM Platform	with SAICM and forging links between the EPIs and the relevant SDG targets.	accomplishment a, - 6 [106]
Output 3.2 Knowledge Management Platform provides a repository of information and forum for exchange of scientific and policy information	19. No. of SAICM Knowledge Management Strategies 20. No. of knowledge platforms developed 21. No. of knowledge exchange instruments featured on the Platform	Large number of knowledge products by IOMC and projects on EPI topics PPG, stakeholder needs assessment which identified : access to ongoing scientific research; tracking regulatory status on chemicals and SAICM country implementation; results best practices and lessons learned.	**Mid-term** 1 SAICM Knowledge Management Strategy 1 contract in place with web architecture service provider(s) for an integrated platform including spatial and non-spatial data	Report Signed agreement and workplan	Assumption that the organizations and projects that have developed a very comprehensive baseline of knowledge products and	Subprogramme 5 Chemicals, waste and air quality: Expected accomplishment a, - 6

[105] http://www.saicm.org/Portals/12/Documents/SAICM-List%20of%20indicators%20for%20reporting%20progress.pdf

[106] Advisory, policy and coordination support services to secretariat of chemicals-related multilateral environmental agreements and the Strategic Approach to promote sound chemicals management

		These gaps are the basis of a draft Knowledge Management Strategy initiated during the PPG. The Secretariat has also drafted a Request for Proposal for the design and build of the Knowledge Management platform. Extensive consultations have been held with potential technology providers, including MapX, SCP Platform and GGKP to define the role of geospatial data on the Knowledge Management Platform.	5 maps and visual tool prototypes constructed and tested; stakeholders consulted at OEWG3 Technical content on EPIs produced and submitted by project components (on HHP, EDC/EPPP, lead paint and CiP). **End of project** 50 knowledge exchange instruments featured on the Platform including 5 maps and visual tools; information on 4 EPIs; CoPs established for each EPI (4 total)	Maps Consultation report Component reports	experiences, will be willing and committed to sharing these through a SAICM KM platform	

THEORY OF CHANGE



*ANNEX B: RESPONSES TO PROJECT REVIEWS (**from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).***

The two tables below summarize the comments received from the STAP at PIF stage; and from the Council members at work program inclusion. The second column gives the project responses.

STAP Issues Raised	**UN Environment Response**
1. Project Objective: the STAP advise that the current project objective should be made simpler and clearer. It is difficult to understand what is meant by "measure adoption of national activities to control Emerging Policy Issues". This suggest that the project will be measuring the adoption of national activities related to the EPIs identified under SAICM (which is not the case based on the project components, outcomes and outputs), rather than supporting countries to adopt the EPIs and take action to accelerate their implementation. We therefore suggest that the objective should be revised along these lines.	The objective has been revised: Accelerate adoption of national and value chain initiatives to control Emerging Policy Issues (EPIs), and measure their contribution to the 2020 SAICM goal and 2030 Agenda for Sustainable Development
2. Project components: the titles of project components 1, 2 and 3 in Table B should be aligned with the indicative project description summary in section 3: proposed alternative scenario. The titles in Table B are either broader in scope or different from what is provided in the detailed project description.	Comments gratefully acknowledged and inconsistencies have been removed.
3. Component 1 is to focus on promoting regulatory and voluntary action by government to phase out known toxic chemicals, suggesting that several chemicals will be targeted. However the activities deal only with Lead in Paints. STAP suggest that the component should be revised to reflect this.	
The idea of a demonstration pilot could be useful and should ideally help strengthen public-private partnerships. However, more information is needed on what this particular pilot demonstration is about. Would it be a "leadless" paint manufacturing process? Would it be identifying a new BAT/BEP? And if so, how would the effectiveness be measured? Or would it be based on an existing chemical production process already in use? If so, it would be useful to provide information on such a process in the project document in order to be able to certify its environmental friendliness and sustainability.	The pilot activities are focused on SMEs in Jordan, Peru, Ecuador, Colombia, China, Indonesia and Nigeria focusing on providing technical support to SMEs producing lead paint. There is no need to identify new BAT/BEP. Alternatives exist and there is a need to connect both alternatives suppliers with SMEs, and for the provision of technical support to SMEs in the process of reformulation. A list of lead substitutes for driers and colourants is included in the baseline description and footnotes, especially the links to the IPEN and IAMC guidance on paints and varnishes.

Also, given that this is a global project, it will be important to ensure that the demonstration project sites are selected in different places with differing circumstances, in order to ensure that the final output and advice is applicable to different national situations.	The PPG phase consulted extensively with experts, NCPCs, and the paint industry to glean a full understanding of the challenges facing small and medium-sized paint producers. Pilots will be executed nationally with international oversight and technical support provided by the NCPC Serbia, which has deep technical expertise in transitioning to lead free paint. This international technical support role will facilitate learning between countries in different regions.
Component 1 would also develop "global technical guidelines on BAT/BEP for manufacturers". We believe this could be a useful output to help countries act. But the STAP also believe that examples of guidance exist from countries like the United States (https://www.epa.gov/lead/lead-laws-and-regulations), the EU (http://ec.europa.eu/environment/air/pollutants/stationary/paints/paints_legis.htm), as well as Uruguay (http://www.unep.org/sites/all/themes/noleadpaint/docs/Module%20Hiii%20Uruguay%20Case%20Study%20FINAL.pdf), and the Philippines (https://www.epa.gov/sites/production/files/2015-11/documents/philippines_case_study_presentation.pdf). It is therefore important that the planned global guidance build on what already exists and takes into consideration the circumstances of developing countries in its design - to ensure usefulness and applicability. It is also important that the guideline include sections on implementation, enforcement, monitoring and reporting. More information on what the guidance would set to achieve and a roadmap would be useful.	The guidelines highlighted by STAP are largely concerned with the regulatory, legal and institutional aspects of restricting lead in paint. Some technical guidance also exists on BAT/BP for manufacturers (and these are reviewed in the baseline section). These existing guidelines have not been widely taken up, as information from consultations with SMEs indicate they require expertise as well as guidance to successfully reformulate paint. As such, the project has been reconceived to provide this technical support through both national NCPCs, and through NCPC Serbia. Technical guidelines will be under the project, but this has been reclassified as an activity, to be completed at the end of the project. Under this approach the guidance will include experiences from this project, and focus on providing information to allow further scale up and rollout of project activities.
- Component 1 also includes the development of an online toolkit with a guide for regulating lead in paint. The STAP however noted that a "Toolkit for Establishing Laws to Control the Use of Lead in Paint" is currently available on UNEP's website developed by the Global Alliance to Eliminate Lead in Paint (http://www.unep.org/chemicalsandwaste/noleadinpaint/toolkit). It would be useful to provide information on what this new toolkit would do in addition to this. A better description of the toolkit is needed too, including its contents, how to ensure usability, and lessons learnt from the demonstration pilot.	During the PPG phase the UNEP online toolkit was a key communication tool to share updates and documents with project partners, and to share the Model Law developed by the Alliance. The toolkit will continue to be used by the project as the key communication channel at the Regional Workshop and during implementation of the national roadmaps. The further development of the toolkit is ongoing by project partners, and has been removed from the lead paint component. When the wider SAICM KM strategy and platform are finalized, they will explicitly connect to the existing toolkit.

4. Component 2 focuses on Chemicals in Products with specifically on toys, building products, and electronics. This is a less developed, we think it needs a conceptual map on what elements of the life cycle would be considered, and what type of green economy tools will be developed. Output 2.1 will establish a platform to identify and quantify chemicals in products present in supply chains. This is an important output, however a better description of the activities that will deliver this is needed. There is an indication of a coordinating "mechanism" to share existing information on companies and initiatives but we think more is needed, in order to ascertain its ability to deliver. There is also mention of a platform which needs to be explained. The same output also includes the "facilitation of the expansion of information collection on additional chemicals and new companies or stakeholders", but no information on how this will be done. Furthermore, getting companies to share information especially on a platform available to their competitors would be face many significant barriers, but there is no indication of how these would be overcome.	The PPG phase did a detailed review of the life cycle needs for toys, building products and electronics, including development of conceptual life cycle maps and intervention points (refer to the ISSPPRO report referenced in the baseline section). These, and stakeholder consultation including with the textiles sector, have been the drivers for prioritisation and selection of the proposed approaches as described in the Alternative Scenario. The involvement of private sector networks and value chain actors including the Green Electronics Council has guided the project design to ensure buy-in by their members and non-members.
- It is difficult to understand Output 2.2 on green economy tools and guidance. Is this going to be another toolkit or guidance containing green economy tools? What are the green economy tools to be promoted? Are green economy tools to be developed for each targeted product types â€“ toys, building products, and electronics? How will expertise from UN Environment be shared, seminars, training, capacity building initiatives etc.? What effort will be made to ensure that companies adopt the promoted green economy tools? More information needs to be provided.	This component will be co-delivered by the Sustainable Consumption and Production Branch of UN Environment and will link strongly to their existing programme of work as outlined in the Baseline section. The PPG identified key green economy and sustainable consumption and production tools as presented in Table 3 in the baseline section. The proposed alternative scenario section provides detailed information on the exact tools that will be used (USEtox, SPP, green mortgages…) and the proposed approach to modify these to reflect chemical priorities and issues.
- For chemicals in electronic products, the project would be "focusing solely on upstream challenges, to efficiently reduce the amount of hazardous substances at source". However no information was provided on how this will be done. How would the project work with electronic manufacturers in developing countries to change their current practices? How would lessons from giant electronic manufacturers in developed countries be incorporated into the project? Companies like Apple are pushing efforts to reduce toxic chemicals in their products and are working to improve the sustainability of their supply chain (see their annual report: http://images.apple.com/environment/pdf/Apple_Environmental_Responsibility_Re	The PPG phase has engaged both individual companies as well as indirectly via the Chemicals in Products programme and Green Electronics Council. The proposed regional electronics studies build on existing work done e.g. under the Global E-waste Monitor, and an ongoing study with a deep dive on Africa. These regional studies will identify and prioritize both regions and individual countries within regions, for further work at different stages of the value chain. During project implementation, these will be shared with manufacturers in developed and developing countries, and used to create a kind of

port_2016.pdf). How will the project engage and glean lessons learnt from this and other similar efforts? - Regional focus of the project. There are several references to regional activities without the region being specified, or the criteria for selection, and how these activities would feed into the overall global objective of the project. It will be important to target developing countries where electronics products are being produced in significant quantities.	benchmark for global companies to compare themselves against, possibly via a voluntary consensus standard that brings together the common elements of diverse existing initiatives.
5. Component 3: Output 3.1 includes "new mechanisms" to communicate science and best practices in management. A description of the mechanism needs to be provided, and an explanation of how this will be different from what currently exists.	The PPG phase reviewed existing knowledge management tools and these are summarized in the Baseline section. The user needs assessment also reviewed users among key SAICM target audiences (particularly national and regional focal points) and has informed the development of the KM strategy outline.
- It would be useful to provide some information on how the project will "support early planning for chemical management in the 2030 Agenda for Sustainable Development". What are the specific planned activities for achieving this?	As outlined in the section 'changes to project design since PIF', the output on indicators has been modified during the PPG, but the project will support links with the SDGs agenda through the KM and stakeholder engagement component, by preparing papers and policy briefs addressing particular SDGs and the relevant chemicals management issues; and by a paper demonstrating how the project and wider work on EPIs may contribute to reporting on any progress reporting framework proposed by the Beyond 2020 process.

Responses to Council review at work program inclusion (comments received from US and detailed response submitted 19/5/2017 via GEF Sec, which is summarized and updated in the following table):

Council Issues Raised	**UN Environment Response**
Better specification of which kinds of chemicals will be addressed by the project	Noted and addressed throughout the document, e.g. re-naming the Comoponent 1 to be explicit about lead in paint (compared to the PIF component title referring to 'hazardous chemicals'); Table 1 for the priority chemical groups to be addressed under Component 2.
Whether waste from the CiP sectors will be addressed	The project strategy is to reduce the generation of hazardous wastes by intervening at earlier stages in the lifecycle of products that contain hazardous substances. Therefore, wastes contaminated with chemicals of concern will be minimized, in line with the waste hierarchy, but waste management approaches are not explicitly included in this project design.

Clarification on how the project contributes to the GEF Program on POPs	The project will address new POPs that are present in products of the three sectors such as flame retardants. Please refer to Table 1 of the current document for details of POPs; and section 3 (proposed alternative scenario) for relevance to GEF Focal Area strategies and Strategic Objectives.
Involvement of industry stakeholders in the development of Component 2	Industry stakeholders were engaged via the CiP programme during the PPG, with representatives of toy, building product and electronics companies and industrial associations participating in the project design workshop. Please refer to the list of co-financing partners for additional details.

Annex C: status of implementation of project preparation activities and the use of funds[107]

A. Provide detailed funding amount of the PPG activities financing status in the table below

PPG Grant Approved at PIF: **USD 200,000**			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF/CBIT Amount ($)***		
	Budgeted Amount	***Amount Spent To date***	***Amount Committed***
Personnel – coordination Lead in Paint	10,000	12,427	
Personnel – SAICM contractor	30,600	41,153	
Personnel – project development and KM expert	24,900		20,600
Travel – coordination with RMB	8,000	12,784	
WHO review and baseline	8,000	8,000	
Gender, KM and EPI reviews	25,500	22,160	
Lead paint technical review and consultation meeting	40,000	40,000	
CiP sector reviews	30,000	30,000	
CiP consultation meeting	23,000	25,474	
Total	**200,000**	**179,400**	**20,600**

[107] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

Annex D: calendar of expected reflows

(if non-grant instrument is used**)**

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/CBIT Trust Funds or to your Agency (and/or revolving fund that will be set up)
N/A

Annex E: consultants to be hired

Position Titles	***$/ Person Week****	***Estimated Person Weeks*****	***Tasks To Be Performed***
For Technical Assistance			
International			
Technical guideline and pilot consultant	2,500	40	Will provide ongoing technical backstopping to NCPCs conducting BAT/BEP pilot projects, and will b responsible for the drafting of project technical guidance.
Technical and Science Advisor (IPEN – to Indonesia and Nigeria BAT/BEP activities)	2,500	30	Technical support and advice to Indonesian and Nigerian NGOs completing BAT/BEP plot projects.
Legal support network consultant	2,500	55.4	Responsible for coordination and overall legal support to countries, in association with three legal regional consultants. Responsible for legislative review, drafting, and advising countries.
WHO Technical consultant	2,500	42	Lead and coordinate the work of WHO regional support to countries in terms of following national project plans to enact legislation (in countries, where WHO is nominated the Lead Executing Partner)
ECOWAC Technical advisor	2,500	32	Support ECOWAS countries in coordinating their legislative efforts in line with AMCEN decision to adopt a regional standard for lead paint.
Justification for travel, if any: Little travel is anticipated for international consultants, with the exception for travel to regional project meetings.			
Regional /local			
SRADev BAT/BEP consultant	1,000	40	Responsible for leading the BAT/BEP pilot with the paint industry in Nigeria (according to the NCPC ToR). Will receive technical guidance from NCPC Serbia, and other support from the IPEN technical consultant.
BaliFokus BAT/BEP consultant	1,000	40	Responsible for leading the BAT/BEP pilot with the paint industry in Indonesia (according to the NCPC ToR). Will receive technical guidance from NCPC Serbia, and other support from the IPEN technical consultant.

Regional legal officer (region 1)	1,000	60	Will provide legal assistance to countries in the region according to their respective national project plans. Assistance may include: legal review; legal drafting; and national visits to stakeholder meetings.
Regional legal officer (region 2)	1,000	60	Will provide legal assistance to countries in the region according to their respective national project plans. Assistance may include: legal review; legal drafting; and national visits to stakeholder meetings.
Regional legal officer (region 3)	1,000	60	Will provide legal assistance to countries in the region according to their respective national project plans. Assistance may include: legal review; legal drafting; and national visits to stakeholder meetings.
Regional awareness raising consultant (region 1)	1,000	25	Provide support to countries in project, but in which governments have declined assistance with regulating. Awareness raising consultants will support national groups in raising awareness among communities on the dangers of lead paint.
Regional awareness raising consultant (region 2)	1,000	25	Provide support to countries in project, but in which governments have declined assistance with regulating. Awareness raising consultants will support national groups in raising awareness among communities on the dangers of lead paint.
WHO regional technical assistant (region 3)	1,000	60	Assist project countries to follow national project plans to enact legislation (in countries, where WHO is nominated the Lead Executing Partner)
WHO regional technical assistant (region 4)	1,000	60	Assist project countries to follow national project plans to enact legislation (in countries, where WHO is nominated the Lead Executing Partner)
Justification for travel, if any: Regional consultants will have some travel to project countries to provide technical assistance.			

Annex F: budget and workplan

(See Excel file)

Annex G: Implementation Arrangements

As outlined in Section A6 (Institutional Arrangements and coordination), component coordinators will manage delivery and reporting by other project execution partners for Components 1 and 2.

Component 1: Key executing partners are CHB and WHO. The CHB will provide Targeted Technical Assistance (TTA) to support the efficient execution of the outputs under the component. Specifically, the **CHB Component Coordinator** will involve the following duties:

- Provide technical oversight to contracted project partners (NCPCs, WHO, IPEN, ABA-ROLI) and clear their technical reports;
- Convene regular partner meetings with WHO, ROLI, IPEN, USEPA, NCPC Serbia, plus a country representative from the Global Alliance;
- Oversee the technical quality of the BAP/BEP technical guidelines for SMEs, awareness materials, draft legislation/ lead paint limits;
- Lead consultations with Ministries of Environments, assess needs and link with appropriate project partners;
- Organize regional capacity building trainings and workshops ensuring coherent approach of contracted project partners;
- Attend and contribute to national multi-stakeholders' workshops and meeting to foster support to awareness on toxic effects of lead and need for legislative measures and/or lead paint limit;
- Ensure integration and synergies between the GEF project and other relevant ongoing initiatives in the regions/sub-regions;
- Present project progress at the SAICM OEWG;
- Oversee and carry out technical backstopping to the project as deemed necessary.

Precise deliverables:

- Review of technical guidelines on the BAP/BEP of lead free paint manufacturing for SMEs
- Report on regional capacity building activities (trainings and workshops)
- Six-monthly Reports on country-level progress on awareness and legislation
- Six-monthly reports on pilot activity progress
- Report of presentation at SAICM OEWG

Component 2: CHB and RMB co-leads will provide TTA on the development of the tools under output 2.1, and convene regular partner meetings with USEtox, the NCPCs (Sri Lanka and Colombia), BCRC China, Green Building Council, and the Green Electronics Council. Specifically the technical support will include:

CHB TTA:

- Ensuring linkages between project consultants and the UN Environment Chemicals in Products Programme, coordination and consultation with CIP Programme Steering Committee representatives from different sectors.
- Technical support in identification of CoC based on different MEAs and regulatory lists, for all three sectors.

- Liaison with UNEP Finance Initiative and provision of technical assistance on CoC identification and issues.
- Review of consultant studies on legal and regulatory tools for the control of CoC in electronics (regional electronics studies) and toys (toy safety and import review).
- Coordination and chairing of international consultations on the development of voluntary or regulatory approaches for managing and reducing CoC in toys and electronics.

RMB TTA:

- USEtox: liaise on chemical properties information to feed into toxicity models, Inform criteria for procurement and innovation guidelines, other SCP tools, pilot test with products and companies relevant for the project
- General guidebook on the procurement of electronic & buildings products free or with limited amounts of CoCos
- Procurement Guidelines for specific products (building products and electronics)
- Implementing the SPP Approach for CoCo-free Public procurement, in particular pilot tests in Colombia, and SPP guidance in Sri Lanka
- Support in sub-sector selection for building products, linking to SPP and CI information, and support to GBC and NCPC on the general guidance for private sector manufacturers. 1 training in country.
- 2 electronic products with Colombian SPP technical specification related to CoCs. No. of companies proving compliance through eco-label certification, or other means.
- Delivery and support for supply chain training and materials.
- Coordination and review of 2 Regional studies on the management of electronics, towards a circular economy.
- Coordination of component 2, and linkages with other components, dissemination

Annex H: Co-finance Letters

(See PDF file)

Annex I: UNEP Environmental Social and Economic Review Note (ESERN)

I. Project Overview

Identification	*GEF ID: 9771*
Project Title	*Global best practices on emerging chemical policy issues of concern under SAICM*
Managing Division	*SAICM Secretariat*
Type/Location	*Global*
Region	*Global*
List Countries	-
Project Description	*The overall project objective is to accelerate progress in control of EPIs by governments and value chains, by promoting the phase out and replacement of hazardous chemicals in paint, building products, electronics and toys. Upstream actions by governments and value chain actors to replace priority chemicals in supply chains and products will reduce worker and consumer exposure, and environmental releases during manufacture and at end of life. This directly contributes to the 2020 SAICM Goal of ensuring that "chemicals are produced and used in ways that minimize significant adverse impacts on the environment and human health".* *Component 1 on lead in paint aims for 40 countries to regulate to establish legal limits to lead paint; and for at least 50 SME paint manufacturers in eight countries to phase out lead from their production processes.* *Component 2 on chemicals in products will accelerate adoption of measures by governments and value chains to track and control chemicals in supply chains for building products, electronics and toys. Through the development of global level guidance and tools, including on sustainable public procurement and life cycle assessment, and roll out of these in pilot projects and demonstration to companies in the three sectors the project aims to create pressure for reporting and replacement of hazardous chemicals via new market and economic tools.* *Component 3 aims to facilitate countries and other stakeholders to access up to date information on the EPIs, and join communities of practice for peer-to-peer learning exchanges, to support decision making and development of new initiatives towards the 2020 SAICM goal and in line with the 2030 Agenda.*
Estimated duration of project:	*48 months*

Estimated cost of the project :	*8.19 million USD*

II. Environmental Social and Economic Screening Determination

A. Summary of the Safeguard Risks Triggered

Safeguard Standard Triggered by the Project	Impact of Risk[108] (1-5)	Probability of Risk (1-5)	Significance of Risk (L, M, H)
SS 1: Biodiversity, natural habitat and Sustainable Management of Living Resources	1	1	L
SS 2: Resource Efficiency, Pollution Prevention and Management of Chemicals and Wastes	1	1	L
SS 3: Safety of Dams	1	1	L
SS 4: Involuntary resettlement	1	1	L
SS 5: Indigenous peoples	1	1	L
SS 6: Labor and working conditions	1	1	L
SS 7: Cultural Heritage	1	1	L
SS 8: Gender equity	1	1	L
SS 9: Economic Sustainability	1	1	L

[108] Refer to UNEP Environment, Social and Economic Sustainability (ESES): Implementation Guidance Note Additional Safeguard questions for projects seeking GCF-funding (Section V) to assign values to the Impact of Risk and the Probability of Risk to determine the overall significance of Risk (Low, Moderate or High).

[109] **Low risk**: Negative impacts negligible: no further study or impact management required.

Moderate risk: Potential negative impacts, but less significant; few if any impacts irreversible; impact amenable to management using standard mitigation measures; limited environmental or social analysis may be required to develop a ESEMP. Straightforward application of good practice may be sufficient without additional study.

High risk: Potential for significant negative impacts, possibly irreversible, ESEA including a full impact assessment may be required, followed by an effective safeguard management plan.

B. ESE Screening Decision[109] (Refer to the UNEP ESES Framework (Chapter 2) and the UNEP's ESES Guidelines.)

Low risk ☐ Moderate risk ☐ High risk ☐ Additional information required ☐

C. Development of ESE Review Note and Screening Decision:		
Prepared by:	Name: _____Melanie Ashton_____	Date: ___26/2/2018_____
Safeguard Advisor:	Name: _____	Date: _____
Project Manager:	Name: _____	Date: _____
D. Recommended further action from the Safeguard Advisor:		

III. ESES Principle and Safeguard checklist

(Section III and IV should be retained in UNEP)

Precautionary Approach
The project will take precautionary measures even if some cause and effect relationships are not fully established scientifically and there is risk of causing harm to the people or to the environment.
Human Rights Principle
The project will make an effort to include any potentially affected stakeholders, in particular vulnerable and marginalized groups; from the decision making process that may affect them.
The project will respond to any significant concerns or disputes raised during the stakeholder engagement process.
The project will make an effort to avoid inequitable or discriminatory negative impacts on the quality of and access to resources or basic services, on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups.[110]

Screening checklist	Y/N/ Maybe	Comment
Safeguard Standard 1: Biodiversity, natural habitat and Sustainable Management of Living Resources		
Will the proposed project support directly or indirectly any activities that significantly convert or degrade biodiversity and habitat including modified habitat, natural habitat and critical natural habitat?	N	
Will the proposed project likely convert or degrade habitats that are legally protected?	N	
Will the proposed project likely convert or degrade habitats that are officially proposed for protection? (e.g.; National Park, Nature Conservancy, Indigenous Community Conserved Area, (ICCA); etc.)	N	
Will the proposed project likely convert or degrade habitats that are identified by authoritative sources for their high conservation and biodiversity value?	N	

[110] Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

Will the proposed project likely convert or degrade habitats that are recognized- including by authoritative sources and /or the national and local government entity, as protected and conserved by traditional local communities?	N	
Will the proposed project approach possibly not be legally permitted or inconsistent with any officially recognized management plans for the area?	N	
Will the proposed project activities result in soils deterioration and land degradation?	N	
Will the proposed project interventions cause any changes to the quality or quantity of water in rivers, ponds, lakes or other wetlands?	N	
Will the proposed project possibly introduce or utilize any invasive alien species of flora and fauna, whether accidental or intentional?	N	
Safeguard Standard 2: Resource Efficiency, Pollution Prevention and Management of Chemicals and Wastes		
Will the proposed project likely result in the significant release of pollutants to air, water or soil?	N	The project aims to reduce pollutants (lead, in paint) and chemicals of concern in building, electronics and toys.
Will the proposed project likely consume or cause significant consumption of water, energy or other resources through its own footprint or through the boundary of influence of the activity?	N	
Will the proposed project likely cause significant generation of Green House Gas (GHG) emissions during and/or after the project?	N	
Will the proposed project likely generate wastes, including hazardous waste that cannot be reused, recycled or disposed in an environmentally sound and safe manner?	N	
Will the proposed project use, cause the use of, or manage the use of, storage and disposal of hazardous chemicals, including pesticides?	N	
Will the proposed project involve the manufacturing, trade, release and/or use of hazardous materials subject to international action bans or phase-outs, such as DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Convention on Persistent Organic Pollutants or the Montreal Protocol?	N	

Will the proposed project require the procurement of chemical pesticides that is not a component of integrated pest management (IPM)[111] or integrated vector management (IVM)[112] approaches?	N	
Will the proposed project require inclusion of chemical pesticides that are included in IPM or IVM but high in human toxicity?	N	
Will the proposed project have difficulty in abiding to FAO's International Code of Conduct[113] in terms of handling, storage, application and disposal of pesticides?	N	
Will the proposed project potentially expose the public to hazardous materials and substances and pose potentially serious risk to human health and the environment?	N	The project aims to reduce current exposure of the public to potentially hazardous substances
Safeguard Standard 3: Safety of Dams		
Will the proposed project involve constructing a new dam(s)?	N	
Will the proposed project involve rehabilitating an existing dam(s)?	N	
Will the proposed project activities involve dam safety operations?	N	
Safeguard Standard 4: Involuntary resettlement		
Will the proposed project likely involve full or partial physical displacement or relocation of people?	N	
Will the proposed project involve involuntary restrictions on land use that deny a community the use of resources to which they have traditional or recognizable use rights?	N	
Will the proposed project likely cause restrictions on access to land or use of resources that are sources of livelihood?	N	
Will the proposed project likely cause or involve temporary/permanent loss of land?	N	
Will the proposed project likely cause or involve economic displacements affecting their crops, businesses, income generation sources and assets?	N	
Will the proposed project likely cause or involve forced eviction?	N	

[111] "Integrated Pest Management (IPM) means the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. IPM emphasizes the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/ipm/en/

[112] "IVM is a rational decision-making process for the optimal use of resources for vector control. The approach seeks to improve the efficacy, cost-effectiveness, ecological soundness and sustainability of disease-vector control. The ultimate goal is to prevent the transmission of vector-borne diseases such as malaria, dengue, Japanese encephalitis, leishmaniasis, schistosomiasis and Chagas disease." (http://www.who.int/neglected_diseases/vector_ecology/ivm_concept/en/)

[113] Find more information from http://www.fao.org/fileadmin/templates/agphome/documents/Pests_Pesticides/Code/CODE_2014Sep_ENG.pdf

Will the proposed project likely affect land tenure arrangements, including communal and/or customary/traditional land tenure patterns negatively?	N	
Safeguard Standard 5: Indigenous peoples[114]		
Will indigenous peoples be present in the proposed project area or area of influence?	N	
Will the proposed project be located on lands and territories claimed by indigenous peoples?	N	
Will the proposed project likely affect livelihoods of indigenous peoples negatively through affecting the rights, lands and territories claimed by them?	N	
Will the proposed project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	N	
Will the project negatively affect the development priorities of indigenous peoples defined by them?	N	
Will the project potentially affect the traditional livelihoods, physical and cultural survival of indigenous peoples?	N	
Will the project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	N	
Safeguard Standard 6: Labor and working conditions		
Will the proposed project involve the use of forced labor and child labor?	N	
Will the proposed project cause the increase of local or regional un-employment?	N	
Safeguard Standard 7: Cultural Heritage		
Will the proposed project potentially have negative impact on objects with historical, cultural, artistic, traditional or religious values and archeological sites that are internationally recognized or legally protected?	N	
Will the proposed project rely on or profit from tangible cultural heritage (e.g., tourism)?	N	
Will the proposed project involve land clearing or excavation with the possibility of encountering previously undetected tangible cultural heritage?	N	
Will the proposed project involve in land clearing or excavation?	N	
Safeguard Standard 8: Gender equity		
Will the proposed project likely have inequitable negative impacts on gender equality and/or the situation of women and girls?	N	
Will the proposed project potentially discriminate against women or other groups based on gender, especially regarding participation in the design and implementation or access to opportunities and benefits?	N	

[114] Refer to the Toolkit for the application of the UNEP Indigenous Peoples Policy Guidance for further information.

Will the proposed project have impacts that could negatively affect women's and men's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?	N	
Safeguard Standard 9: Economic Sustainability		
Will the proposed project likely bring immediate or short-term net gain to the local communities or countries at the risk of generating long-term economic burden (e.g., agriculture for food vs. biofuel; mangrove vs. commercial shrimp farm in terms of fishing, forest products and protection, etc.)?	N	
Will the proposed project likely bring unequal economic benefits to a limited subset of the target group?	N	

IV. Additional Safeguard Questions for Projects seeking GCF-funding

Community Health, Safety, and Security			
Will there be potential risks and negative impacts to the health and safety of the Affected Communities during the project life-cycle?			
Will the proposed project involve design, construction, operation and decommissioning of the structural elements such as new buildings or structures?			
Will the proposed project involve constructing new buildings or structures that will be accessed by public?			
Will the proposed project possibly cause direct or indirect health-related risks and impacts to the Affected Communities due to the diminution or degradation of natural resources, and ecosystem services?			
Will the proposed project activities potentially cause community exposure to health issues such as water-born, water-based, water-related, vector-borne diseases, and communicable diseases?			
In case of an emergency event, will the project team, including partners, have the capacity to respond together with relevant local and national authorities?			
Will the proposed project need to retain workers to provide security to safeguard its personnel and property?			
Labor and Supply Chain			
Will UNEP or the implementing/executing partner(s) involve suppliers of goods and services who may have high risk of significant safety issues related to their own workers?			

Annex J: Acronyms

AMCEN	African Ministerial Conference on Environment
CHB	Chemicals and Health Branch (UN Environment)
CiP	Chemicals in Products
CoC	Chemicals of concern
ECOWAS	Economic Community of West African States
EDCs	Endocrine disrupting chemicals
EEE	Electrical and electronic equipment
EPEAT	Electronic Product Environmental Assessment Tool
EPIs	Emerging policy issues
FSP	Full-sized project
GABC	Global Alliance for Buildings and Construction
GBC	Green Building Council
HEAL	Health and Environment Alliance
IAMC	Innovative Approaches to the Sound Management of Chemicals and Chemical Waste
ICCM	International Conference on Chemicals Management
IOMC	The Inter-Organization Programme for the Sound Management of Chemicals
IPEN	International POPs Elimination Network
IPPIC	International Paint and Print Ink Council
LCA	Lifecycle Assessment
LDCs	Least developed countries
LMIC	Lower and Middle Income Countries
MEAs	Multilateral Environment Agreements
MSP	Medium Sized Project
NCPC	National Cleaner Production Centre
OEWG	Open-Ended Working Group
PAHs	Polycyclic Aromatic Hydrocarbons
PBT	Persistent, bioaccumulative and toxic
POPs	Persistent Organic Pollutants
PSC	Project Steering Committee
RECPnet	Resource Efficient and Cleaner Production Network
RMB	Resources and Markets Branch (UN Environment)
SAICM	Strategic Approach to International Chemicals Management
SCP	Sustainable Consumption and Production
SPP	Sustainable Public Procurement
SIDS	Small Island Developing States
SMEs	Small and Medium-sized enterprises
SRADev	Sustainable Research and Action for Environmental Development, Nigeria
VOCs	Volatile organic compounds
WEEE	Waste Electrical and Electronic Equipment
WHO	World Health Organization

From: Bandemehr, Angela
Sent: Tue, 30 Aug 2016 14:28:10 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Brown, Mary Jean (CDC/ONDIEH/NCEH)
Subject: SOI with PAHO
Attachments: Signed SOI 10-29-15.pdf

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

Statement of Intent among the U.S. Environmental Protection Agency, the U.S. Centers for Disease Control and Prevention, and the Pan American Health Organization

I. Purpose

The U.S. Environmental Protection Agency (EPA), the U.S. Centers for Disease Control and Prevention (CDC) and the Pan American Health Organization (PAHO) are active participants in the Global Alliance to Eliminate Lead Paint (the Lead Paint Alliance or Alliance). This Statement of Intent (SOI) sets forth a framework for EPA, CDC, and PAHO (the Parties) to work collaboratively in addressing lead paint issues in the Latin America and the Caribbean (LAC) region.

II. Background

The Lead Paint Alliance is a voluntary initiative led by the World Health Organization (WHO) and the United Nations Environment Program (UNEP) (together referred to as the "Secretariat"). EPA and CDC are the Co-Chairs of the Alliance Advisory Group. PAHO, as part of the WHO, is part of the Alliance Secretariat. All three organizations are involved in ongoing efforts to eliminate lead in paint globally. This collaboration would will focus on ways to work with government policy makers in the LAC region to establish laws to limit lead in paint.

Current available information indicates that six countries in the LAC region have laws to limit lead in household paint (Argentina, Brazil, Chile, Mexico, Panama and Uruguay); the remaining 27 do not have household paint laws. Three countries are currently recognized as official partners of the Lead Paint Alliance (Honduras, Paraguay, and Uruguay). Colombia serves as a member of the Alliance Advisory Group. LAC countries have also participated in Lead Paint Alliance Global Forums in 2012 and 2014, including Brazil, Honduras, Paraguay, Peru, St. Lucia, and Uruguay. On-going updates will be implemented.

III. Goals of Collaboration

Through this collaborative effort, EPA, CDC and PAHO seek to advance priority action areas, and other goals, as appropriate, in support of the Lead Paint Alliance, with an initial focus on the following priority action areas of the Two-Year Action Plan for 2015-2016:

- Encourage governments in countries where legal limits are not currently in place to establish and enforce national legal limits on lead in paint, with special attention to the elimination of lead decorative paints and lead paints for other applications most likely to contribute to childhood lead exposure.

- TARGET: During the 2015-16 period, 20 more countries will have adopted new legal limits on lead paint, bringing the total countries with existing legal limits to 72 (baseline October 2014 – 52 countries[1]).

- Increase awareness of the health and environmental risks posed by lead paint, to help prompt actions by governments and manufacturers to stop the production and sale of lead paints.
    - TARGET: An increased number of governments and organizations will have participated in the International Lead Poisoning Prevention Week of Action in October 2015 and October 2016 (baseline 2013 week of action, when activities took place in more than 100 cities in 44 countries).

- Increase and diversify the number of Alliance partners.
    - TARGET: 15 governments or organizations will have become new partners during 2015 or 2016[2].

This EPA, CDC and PAHO will also endeavor to work together towards LAC region-specific goals:

- Review legislation related to human health impacts and exposure to lead to promote consistency with the goal of elimination of lead in paint.
- Work with countries with lead paint laws to develop effective compliance approaches.

IV. Authorities

EPA enters into this SOI pursuant to Section 102(2)(F) of the National Environmental Policy Act (42 U.S.C. § 4332(F)); Section 8001(a) of the Solid Waste Disposal Act (42 U.S.C. § 6981(a)); and Section 6604(b)(5) of the Pollution Prevention Act (42 U.S.C. 13103(b)(5)).

V. Limitations

This SOI, a voluntary agreement that expresses the good-faith intentions of the Parties, is not intended to be legally binding, does not create any contractual obligations, and is not enforceable by any party. It does not create any right or benefit, substantive or procedural, enforceable by law or equity, by persons who are not party to this agreement, against the Parties, their officers or employees, or any other person. This SOI does not direct or apply to any person outside of the Parties.

All commitments made by the Parties in this SOI are subject to the availability of resources as appropriate, including possible partner EPA staff support for the Alliance Secretariat and other potential leveraged funding. Nothing in this SOI, in and of itself, obligates EPA or CDC to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or incur other financial obligations that would be inconsistent with respective Agency budget priorities. PAHO agrees not to submit a claim for compensation for services rendered to EPA

[1] SACIM/OEWG.2/INF/27

[2] Lead Paint Alliance partners: www.unep/org/noleadinpaint

and CDC in connection with any activities it carries out in furtherance of this SOI. This SOI does not exempt PAHO from EPA or CDC policies governing competition for assistance agreements. Any transaction involving reimbursement or contribution of funds between the parties to this SOI will be handled in accordance with applicable laws, regulations, and procedures under separate written agreements.

VI. Duration/Modification/Termination

Activities under this SOI may commence upon the signature of the Parties and continue for a period of five (5) years. This SOI may be modified, and the time frame for activities under this SOI may be extended at any time through the mutual written consent of the Parties. Additionally, a Party may discontinue its participation in this SOI at any time by providing the written notice to the other Parties.

Signed by:

Walker B. Smith on 10/29/15
Walker B. Smith
Director
Office of Global Affairs and Policy
U.S. Environmental Protection Agency

Mary Jean Brown on 10/29/2015
Dr. Mary Jean Brown
Program Chief
Lead Poisoning Prevention Program
National Center for Environmental Health
Centers for Disease Control and Prevention

on 10/29/15
Dr. Luiz Augusto Galvão
Special Program Chief
Sustainable Development and Health Equity
Pan American Health Organization

Export Details

Started at: Fri Feb 21 09:00:22 2020 (America/New_York)
Completed at: Fri Feb 21 09:00:43 2020 (America/New_York)
Export duration: 21s
Processing duration: 21s
Case: 20-00576
Case location: F:\20-00576\20-00576
Nuix Version 8.0.3.121 (amd64)

Export Configuration

Options for load file: Item
Imaging options:
  Imaging profile: Default
Convert mail, contacts, calendars to: Native (MSG for MAPI items, otherwise EML)
Items exported to: \\cdc.gov\locker\OCOO_FOIA_WS_1\EnterpriseSearch\FY20\20-00576\EPA to Falk
Time zone: (GMT-05:00) Eastern Standard Time (America/New_York)
Separate attachments from emails: false
Native export with file naming: Item name
Exporting selected items
Resemblance threshold: 0.85

Export Statistics

Items selected for export: 114
Total items removed due to exclusions: 0
Total items and descendants discovered for export: 114
Total number of failed items: 0

Exported File Statistics

Total native files generated: 114
Native files from binary store: 0
Native files with invalid times: 0
Native slip-sheet files generated: 0

Exported Stage Durations

Stage 'WORK_QUEUE' took: 0s
Stage 'NATIVE' took: 15s
Stage 'STORED_EMAIL_FIXUP' took: 1s
Stage 'NUMBERING' took: 0s
Stage 'BINARY_STORE' took: 0s
Stage 'FILE_NAMING' took: 3s
Stage 'SET_FILE_TIMES' took: 1s
Stage 'DIGEST' took: 0s

```
Stage 'LOAD_FILES' took: 0s

Exported File Throughput Statistics
---------------------------------------------------------------------------
-----
Generated native files/second: 6.89

File Type Statistics
---------------------------------------------------------------------------
-----
Total number of exported items by MIME type (114):
 Microsoft Outlook Note (application/vnd.ms-outlook-note): 114
```

From: Cappuccilli, Eva
Sent: Tue, 13 Sep 2016 16:29:34 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH);O'Connor, Keara A
Cc: McKissick, Stephane Z, (CDC/ONDIEH/NCEH) (CTR);Leonard, Darlene
Subject: Twitter Town-hall?

Hi Helen, Henry, and Keara,

I wanted to follow up on the idea of hosting another Twitter Town-hall this year for Lead Poisoning Prevention week. We touched on the topic on one of the first planning calls we had, but it hasn't been brought up since.

Is this something that the team in interested in pursuing? If so, I wanted to know if anyone had already taken or could take the lead on organizing and hosting this on a social media account? It would be a great outreach event, but would need some fast legwork to organize and promote before the actual event. If it could be held on October 28th to correspond with the social media theme for the day (National Lead Information Center), this would have a great impact.

Let me know if this is something we should still coordinate!

Best,
Eva

Eva Cappuccilli
Environmental Protection Specialist
Office of Chemical Safety and Pollution Prevention
National Program Chemicals Division, Program Assessment and Outreach Branch
cappuccilli.eva@epa.gov | *o: (202) 564-4688*

From: EPA Media Relations
Sent: Fri, 3 Jun 2016 10:34:31 -0400
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Two EPA Employees Receive Arthur S. Flemming Awards for Exceptional Contributions

EPA HEADQUARTERS
NEWS RELEASE
WWW.EPA.GOV/NEWSROOM

CONTACT:
Cathy Milbourn
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202-564-7849

FOR IMMEDIATE RELEASE
June 3, 2016

Two EPA Employees Receive Prestigious Arthur S. Flemming Awards for Exceptional Contributions to the Federal Government

Ceremony honoring the award winners will take place on June 6, 2016, at George Washington University

WASHINGTON- The U.S. Environmental Protection Agency (EPA) employees who are winners of this year's Arthur S. Flemming Awards are: Dr. Gayle Hagler and Elliott Zenick. These awardees were selected for outstanding work performance, leadership, and their potential for continued excellence.

"I am very proud to see two deserving members of the EPA family recognized with this prestigious award," said EPA Administrator Gina McCarthy. "The research work done by Dr. Hagler ensures the agency promotes innovative technologies that can monitor local air challenges. Mr. Zenick has devoted countless hours to developing sound, legally solid national rules to ensure the U.S. continues to make progress in reducing harmful air pollution, including the Clean Power Plan. Together they have made lasting contributions in the Agency's mission to protect the environment and public health."

Dr. Hagler was nominated for her leadership in research projects to quantify dynamic air pollution on a neighborhood scale. This includes developing a mobile air monitoring platform, conducting field and modeling studies of air pollution near sources, and developing a data visualization tool supporting citizen science.

The Arthur S. Flemming award committee highlighted Dr. Hagler's role in the Village Green Project, which she initiated with resources that were provided when she was selected for the Presidential Early Career Award for Scientists and Engineers. The Village Green Project is a highly efficient, solar-powered monitoring platform that incorporates research-grade air quality and weather sensors into a park bench structure that can be easily placed into a public setting.

Mr. Zenick was nominated for leading the legal team who developed EPA's Clean Power Plan (CPP), and the new program to control greenhouse gas emissions from existing power plants, one of the nation's most important steps to address climate change.

The award committee highlighted the legal capacity of Mr. Zenick's work with respect to rule development and its future implementation. The committee noted that he assembled and managed EPA Headquarters and regional attorneys, constituting one of the EPA's largest-ever legal teams. They provided critical legal support helping to defeat six court cases attempting to block the EPA from issuing the CPP.

The 67th annual Arthur S. Flemming Awards honors the accomplishments of 12 federal employees across the federal government. The awards are presented by the Arthur S. Flemming Commission and the George Washington University Trachtenberg School of Public Policy and Public Administration, in cooperation with the National Academy of Public Administration.

The award is named after Arthur S. Flemming, an outstanding federal employee who served in government for more than six decades, spanning seven administrations, including service as the secretary of health, education and welfare under President Eisenhower.

More information about these awards visit: https://tspppa.gwu.edu/arthur-s-flemming-awards

More information about EPA's air, climate and energy research and the Village Green Project and data visualization tool visit: http://www.epa.gov/air-research, https://www.epa.gov/villagegreen, and https://www.epa.gov/retigo

More information about the Clean Power Plan visit: https://www.epa.gov/cleanpowerplan

R97

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

From: Bandemehr, Angela
Sent: Thu, 10 Nov 2016 12:39:14 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie;Tierney, Cate;Maher, Lauren
Subject: URGENT; documentation of BLL reductions due to lead paint regulations

Does CDC have references to hand that document the BLL reductions relative to paint regulations? Off the top of my head I can't think of any but I know there are some out there. WHO is questioning our statement that paint laws will reduce BLLs. At the very least, they are requesting references.

Thanks!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Thu, 12 Apr 2018 11:47:09 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Buchanan, Sharunda D. (CDC/ONDIEH/NCEH)
Subject: WB call

The World Bank has asked if we could be available at 2 pm on Tuesday next week. I'm going to be on my way to the airport but will call in. It is the only time that Ernesto is available. Shafick said he will send out the call in details. I'll send a calendar place holder.

Thanks,
Angela

From: Bandemehr, Angela
Sent: Wed, 10 May 2017 16:06:42 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR);Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Mccann, Ellie
Cc: Sims, JaniceHQ
Subject: WHA talking points for HHS on lead paint
Attachments: Lead in Paint Talking Points for HHS.docx

As promised, here is a draft briefing paper for HHS to take to WHA 70 to talk about lead paint, if appropriate. Any thoughts/comments?
Angela

Angela Bandemehr, MSEE
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Lead in Paint Talking Points for HHS
at the World Health Assembly, May 22-31, 2017

Talking Points: (for use as appropriate)

(b) (5)

(b) (5)

From: Bandemehr, Angela
Sent: Tue, 9 Aug 2016 18:03:53 +0000
To: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: world bank draft
Attachments: Chapt 3_Pb in Paint Report_080116.doc, Chpt 2_Pb in Paint Report_080116.doc, Front matter&chpt 1_Pb in Paint Report_073116.doc

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Improving Children's Futures through the Global Elimination of Lead Paint

DRAFT

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DRAFT

EXECUTIVE SUMMARY

TO BE COMPLETED

DRAFT

Introduction

Background

Human beings started using lead compounds in paint centuries ago in order to increase its durability, and since then millions of people have suffered adverse impacts on their health as a result of lead exposure from paint. Lead is a cumulative toxicant that causes profound and permanent adverse health effects, particularly affecting the development of the brain and nervous system.

Lead exposure is estimated to account for 143,000 deaths per year, 4% of the global burden of ischemic heart disease, and 5% of the global burden of stroke. This significant health burden is highest in developing regions. Sadly, there is no safe level of lead in blood. Scientists found neuropsychological impairment measured as IQ loss, decreased hearing, decreased growth, impaired peripheral nerve function, and transplacental transfer in patients with blood lead level (BLL) as low as 10µg/dL.

Lead is particularly harmful to children and they become its victim even before birth when a pregnant woman is exposed to a lead-contaminated environment. According to the World Health Organization, lead exposure is estimated to contribute to about 600,000 new cases of children developing intellectual disabilities every year. Lead contamination causes mental retardation resulting in low IQ level and performance in school and various lifelong illnesses. It also causes delinquent behavior, which has contributed to increased crime rate in the United States and other parts of the world. Eliminating lead from the environment and particularly preventing children from being exposed to lead paint in homes should be prioritized in countries where leaded paint is still being manufactured or used.

Methodology

This study was conducted through review of literature from scholarly articles, in combination with available information from various organizations on global lead paint usage, its effects on children's health, and policy options to eliminate lead from our environment.

Structure/Organization of report

The report comprises four chapters: Chapter 1 provides insight into health impacts of exposure to lead paint on children, global burden of being exposed to lead and cost of using lead paint borne by users and nations as well as regulatory framework relating to lead paint in general. Chapter 2 provides status and inventory of lead in paint and interventions required to reduce lead in paint including what is being done. Chapter 3 provides various policy options to phase out lead paint from our environment i.e., labeling, disclosure of information, legal instruments for suing governments for allowing lead poisoning, command and control instruments, international agreement to phase out lead, education and outreach. Chapter 4 provides conclusion and recommendations to phase out lead based paint from our environment for a wide range of stakeholders including households, governments, civil society and international development organizations.

Objectives

This paper seeks to: (i) to review the global status of childhood lead poisoning; (ii) understand the status and inventory of lead use in paint globally; (iii) review existing efforts and initiatives to reduce lead in paint globally; (iv) identify potential policy options for phasing out lead in paint, particularly in developing countries where leaded paint is still being produced and/or used.

DRAFT

Chapter 1: Status of Childhood Lead Poisoning Globally

Introduction

This chapter discusses health effects of lead paint on children. Even in small concentrations, lead exposure causes severe illnesses including physical diseases like cardiovascular, neurological, reproductive, mental retardation, reduced IQ level which causes lifelong impacts including loss of earnings and whole society bears the economic cost of being exposed to lead poisoning. No lead level is safe for children or human beings. The chapter also examines the health burden of lead exposure and associated cost borne by individuals and society. Lead-based paints are still available and used in various developing countries posing severe health risks to the population. There is enough evidence that it is feasible to phase out lead from paint. Substitutes exist in the market which could replace leaded paint at an affordable or comparable price. The main barrier for reformulation of paint is the lack of policies to prohibit lead based paints for homes, and lack of enforcement where such policies.

1.1 Health Effects of Childhood Lead Exposure

1. **Lead has been used by human beings historically through mining, smelting and for various purposes**; medicines, beauty cosmetics, glazes and paint pigments long times ago (Meyer, Brown, and Falk 2008, 167). A brief history of lead poisoning is given in Annex A.
2. **Causes of lead pollution differ across countries depending upon present or past practices** from historic contamination, lead products recycling or manufacturing of new products (Meyer, Brown, and Falk 2008) (Figure 1). Important sources of lead pollution are given in Annex –B.

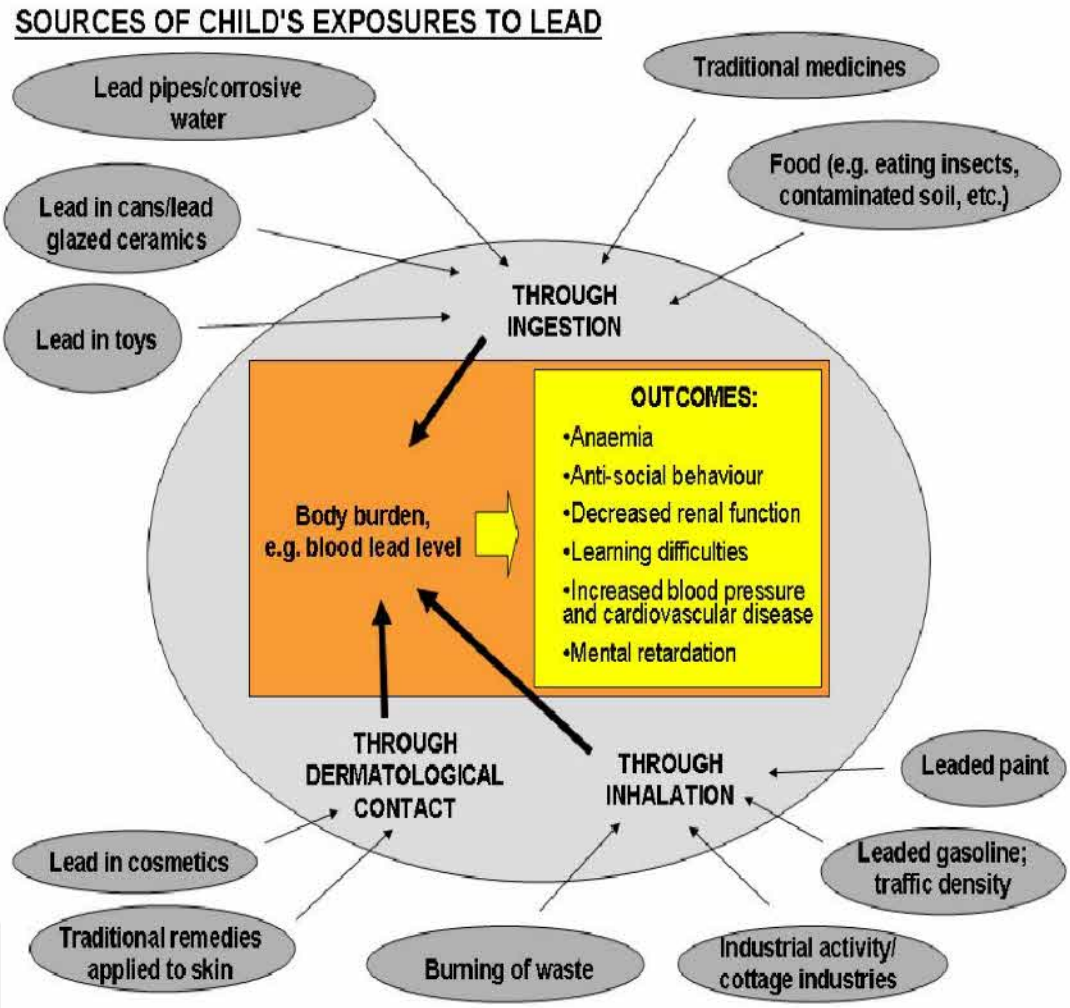

Figure 1 Sources of childhood lead exposure (Source WHO, 2010,19).

3. **Children can get exposed to lead through various routes like ingestion, inhalation, contact though skin and through the umbilical cord to the child before birth**. (WHO 2016, 1). Major exposure routes include: ingestion of lead dust or paint chips especially kids having pica behavior are at greater risk or inhalation of fine lead particles or fumes due to sanding or

burning lead paint.[1] Lead is present in the environment in various forms and children are particularly exposed to its effects through various routes (Figure 2).

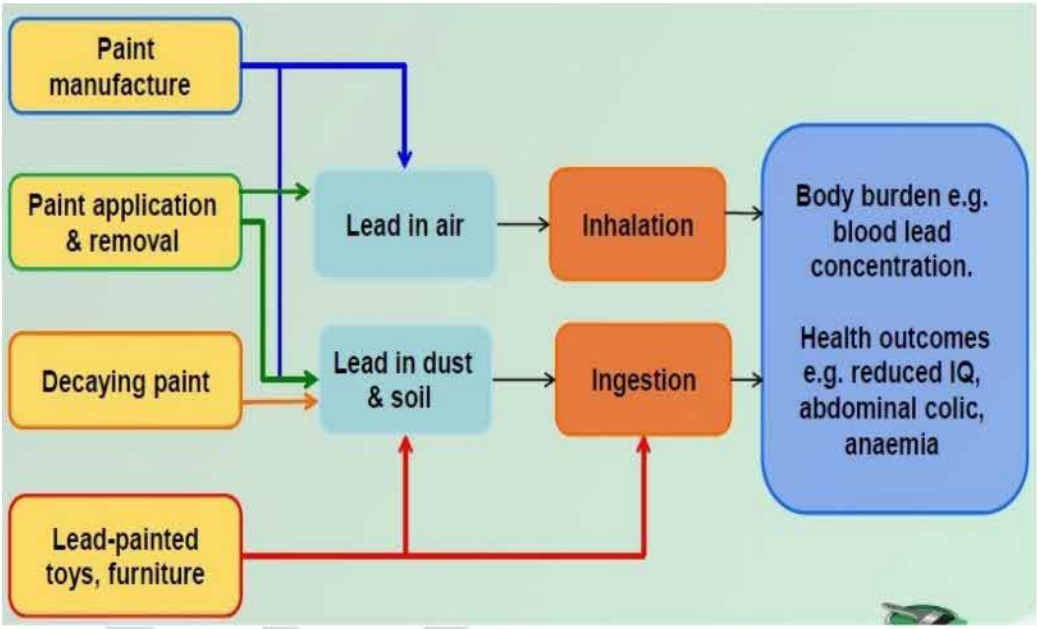

Figure 2 Exposure routes of children to lead based Paint

(Source http://web.unep.org/sites/all/themes/noleadpaint/docs/Module%20Bi%20Health%20Impacts%20FINAL.pdf)

4. **Lead poisoning has general symptoms.** The main problem inherent while studying lead poisoning is that the symptoms are general which make diagnosis difficult in certain cases of over exposure to lead and the first effect of lead exposure appears in blood level (Harrison and Laxen 1984, 153). Lead poisoning warning signs in children may include vomiting, drowsiness, irritability, ataxia, gastrointestinal problems, fatigue or stupor (ibid).

5. **Lead poisoning has become one of the top ten environmental diseases of children in the world** (UNEP 2013, 27). Lead-based mental retardation (MR) is recognized as an environmental disease (Figure 3).

[1] (Source http://web.unep.org/sites/all/themes/noleadpaint/docs/Module%20Bi%20Health%20Impacts%20FINAL.pdf).

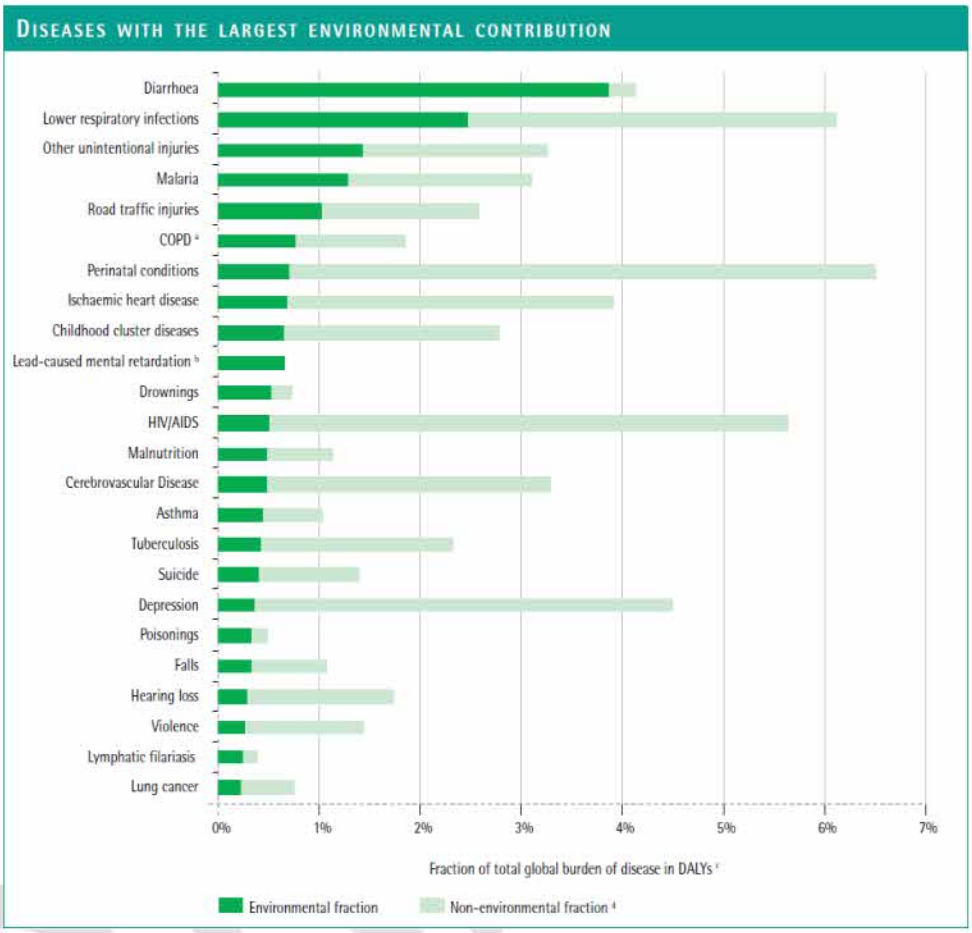

Figure 3 Lead based mental retardation as environmental disease, (Source: www.who.int)

6. **A substantial and compelling body of scientific evidence has established that lead has a profound negative effect on fetal, infant and child development**. No 'safe' blood lead level in children has been identified. Even at blood lead levels that are low by historic standards, lead can directly affect children's life performance through its impact on IQ, attention span, impulse control and executive function. This is a staggering loss to the individual child. There are a number of severe health effects corresponding to levels of lead in blood at different concentrations (Figure 4).

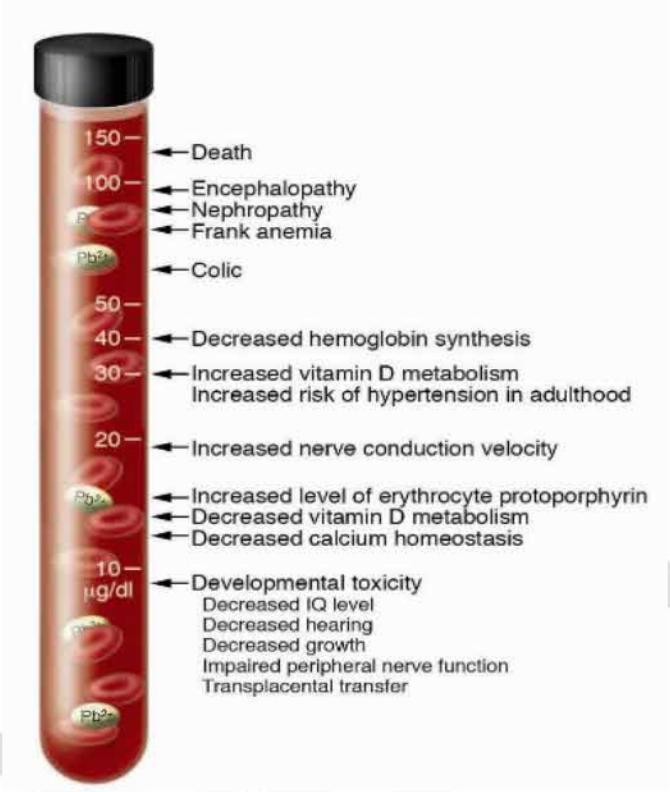

Figure 4 Test tube indicating health effects corresponding to levels of lead in blood (WHO 2010,24)

7. **Small children are at a greater risk of being poisoned by lead as it is highly likely that children of age group between one to six year ingests around 100 milligrams (mg) of dust from the house or soil every day** (UNEP 2013, 26). Paint chips could be more detrimental due to high lead content than is usually present in house dust or soil. In children suffering from malnutrition lead gets absorbed into their bodies at much faster rate (UNEP 2013, 26). Children are more prone to be affected by lead pollution than adults and the lead contamination cause irreversible and lifelong effects for both children and adults (Figure 5).

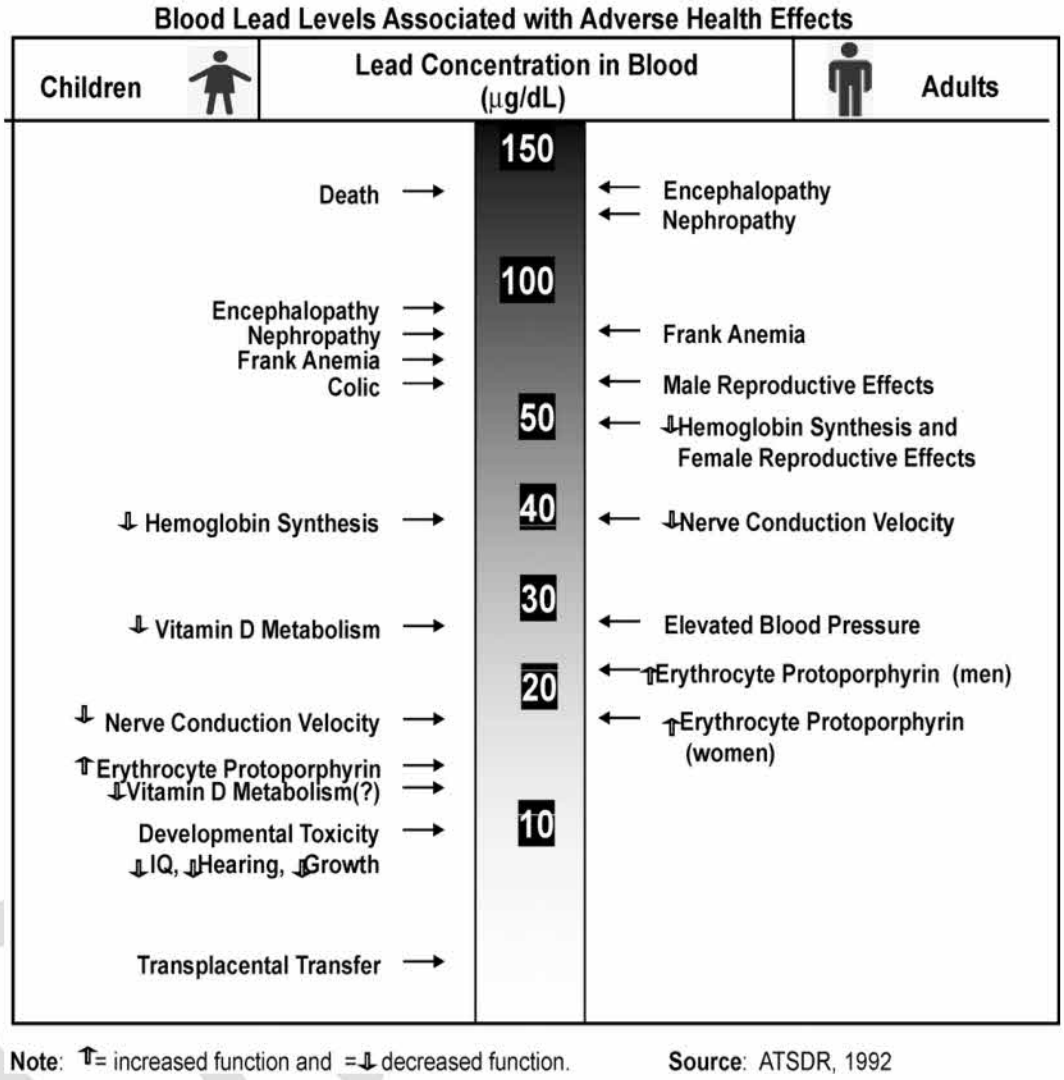

Figure 5 Negative impacts of lead on health of children and adults
Source (Meyer, Brown, and Falk 2008,168).

8. **Lead poisoning affects children in multiple ways and its effects could be permanent.** Physical health or mental growth of a child could be permanently affected after being exposed to lead contamination from childhood till adulthood. Lead exposure causes long-term injury risk to children by posing harm to balance and coordination of the body as well as other neuromuscular skills. This could result in falls and discourage children from taking part in sports or outdoor activities which are highly necessary for developing social connections (CDC 2015, 1) and the whole society pays the cost of lead poisoning (CDC 2015, 18).

9. Lead is a highly toxic chemical which effects children in multiple ways including "*impairments in haeme, vitamin D and red blood cell nucleotide metabolism, perturbations of calcium homeostasis in the hepatocytes, bone cells and brain cells and neurological damage*"(Nriagu 1988,147) (Figure 6).

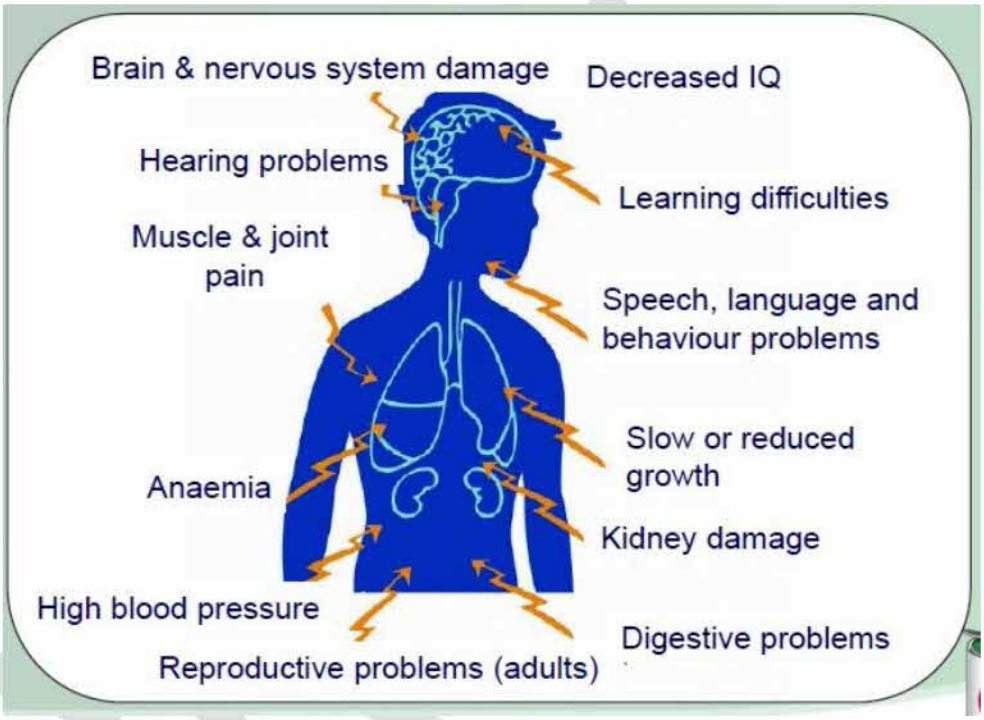

Figure 6 Lead as multi system toxicant (source GAELP Module Bi)

Source: http://web.unep.org/sites/all/themes/noleadpaint/docs/Module%20Bi%20Health%20Impacts%20FINAL.pdf), Retrieved on June 09, 2016.

10. **Lead poses negative, irreversible and lifelong health impacts on children, who are more prone to lead poisoning than adults** for the following reasons: (i) Lead interferes with brain development, growth and differentiation process. It damages the brain even low level exposure is untreatable and irreversible. (ii) Lead exposure in early childhood alters genes which increases risk of diseases in later life (UNEP, 2013, 26).

11. **For children gastrointestinal lead absorption is fifty percent through ingestion which is much higher while for adults it is 10% and for expecting mothers it is higher than in the normal adults** (UNEP 2013, 27). Lead stored in the bones gets mobilized during

pregnancy and lactation in women having prior exposure to lead which is a big risk since lead entered into blood of mother and breast milk can be highly harmful for the fetus or newborn (Ettinger et al. 2010,1). Lead freely reaches the placenta through passive diffusion and has been detected in the brain of fetus following the first trimester and in various studies it has also been found in the women's breast milk (Ettinger et al. 2010,27). In a study conducted in Lima to find the lead level in the Umbilical Cord Blood (UCB) of newborns 0-4 months old, it was found that UCB was ≥ 3,0 μg/dL in 30% of the infants which was thought as increased risk while it was ≥ 5 μg/dL in 16% of the population having toxic lead level in UCB (Guillén-Mendoza et al. 2013,224). So it is highly important to prevent primary exposure to minimize risk and irremediable consequences (Ettinger et al. 2010,27).

12. **The population-wide effects of lead are extensive. Shifting the mean IQ of a population by as little as 5 points results in increasing by more than fifty percent the number of children with IQs defined as mildly mentally retarded.** Assuming a mean IQ of 100 for a big population size with a normal distribution where tail of the curve describe the individuals with higher IQ level above 130 and those having lower IQ below 70. Due to reduction of five points in IQ there will be a significant change in the number of persons in the tails of distribution curve. For example, in a population of 100 million with a mean IQ of 100 there will be 6 million people having IQs level above 130 and equal number having IQ level below 70. With a reduction of 5 points in IQ level there will be only 2.4 million persons having IQs more than 130 and 9.4 million persons will be having IQ level less than 70 who would need remediation support. (Gilbert , Weiss B. 2006,5). This causes staggering losses to the children's families, communities and countries (Figure 7).

13. Children's intellectual level decreases after being exposed to lead with maximum blood lead levels <7.5 μg/dL. In other research conducted in Boston, Massachusetts, similar results were found in children with maximum blood lead level less than 10 μg/dL but it was hard to study the maternal IQ scores which were not easily available (Lanphear et al. 2005, 894).

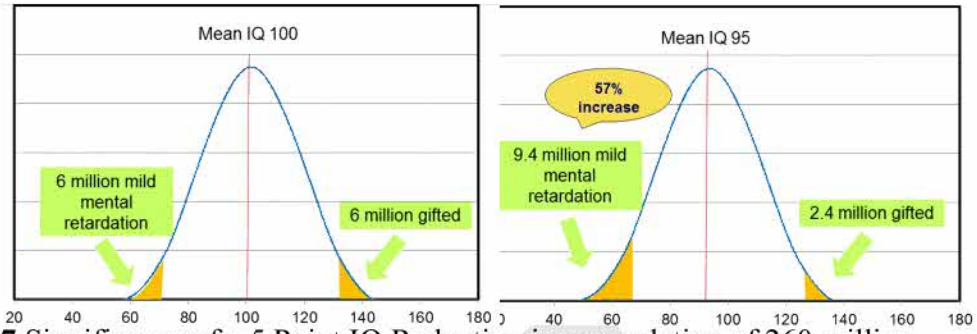

Figure 7 Significance of a 5 Point IQ Reduction in a population of 260 million people, (source modified from Gilbert , Weiss B. 2006, 14).

14. **Lead poses significant health hazards to the exposed public even in low concentration**. Risk of various conditions or diseases increase due to lead exposure which is widespread in developed world like; school failure, reading problems, hearing loss delinquent behavior, tooth decay, renal disease, spontaneous abortions or cardiovascular disease. Limited studies have been conducted to find the link between these conditions or diseases amongst individuals with blood lead levels < 10 µg/dL. Existing data does not provide any confirmation of a threshold for the negative effects of lead exposure (Lanphear et al. 2005, 899).

15. **Research studies show very low lead level in blood cause cognitive impairments in children.** Lead is highly toxic even in very small concentration particularly in children (Meyer, Brown, and Falk 2008) and cognitive impairment related to exposure to lead in early age carry on to late childhood until early maturity (Tong and McMichael 1999,107). Lead exposure has a constant effect on cognitive growth in growing children (Tong and McMichael 1999,107). "Once a child's health or cognition has been harmed by lead, the effects can be permanent and continue into adulthood" (CDC 2015, 1).

16. **Various type of women population subgroups are at increased risk of lead poisoning from exposure to lead pollution** and have been recognized to be extremely exposed to lead in multiple ways mainly; workers in certain professions, new born recent immigrants as well as those practicing certain behaviors associated with lead exposure like pica or renovation of older homes which were built before 1978 (Ettinger et al. 2010, 35). There are a number of risk factors associated to lead exposure in pregnant or lactating Women as well (**Annex C)**.

17. **Blood lead level of population has significantly reduced in the countries where lead has been banned in the gasoline** but in various developing countries despite of using unleaded gasoline a lot of children and workforce are highly vulnerable to fugitive lead contamination (Meyer, Brown, and Falk 2008).

18. **Research studies show direct relationships between lead exposure and hypertension**. Due to stress lead exposure pose extra effect on blood pressure in human beings (Tibbetts 2007,417). Besides that even low level lead exposure has been associated with reduced aptitude and learning ability on standard IQ scores in school children. In addition, research studies show decline in aptitude at blood lead levels less than the CDC blood lead level of 10μg/dL. Blood lead levels much less than 10 μg/dL in early childhood is directly related with reduced learning and results in elementary school as determined by end-of-grade performance tests (Tibbetts 2007, 417).

19. **The results of studies show that high lead concentration in blood were related to physical impairment and mental retardation**. Higher blood lead is related to absolute IQ loss to a greater extent and at low level impact is higher with an increase of each ug/dL. IQ is an excellent indicator of academic performance and BLL of 10 versus 1 ug/dl impairs achievement with a reduction of 7.4 IQ points (Nevin 2009,4).

20. Preschool blood lead level of 10 ug/dl is related to an IQ loss of 7.4 in children having blood lead of 1 ug/dl (Nevin 2009,3). With an increase of each ug/dl from 10-15 ug/dl IQ level lowers by 0.323 points for each ug/dl and above 15 ug/dl IQ level lowers by 0.232 points. So, BLL of 40 ug/dL reduces IQ by almost 15 points against blood lead of 1 ug/dL, and BLL of 60-80 ug/dL lowers IQ around 20 to 25 points (ibid). Standard value for IQ is 100 and usually IQ level of around 25% of the population is below 90 but with a loss of further 15 to 25 IQ points because of BLL of 40-80 ug/dL may significantly affect the percentage of children who satisfy mental retardation state of major intellectual constraint (Nevin 2009,4) (Figure 8).

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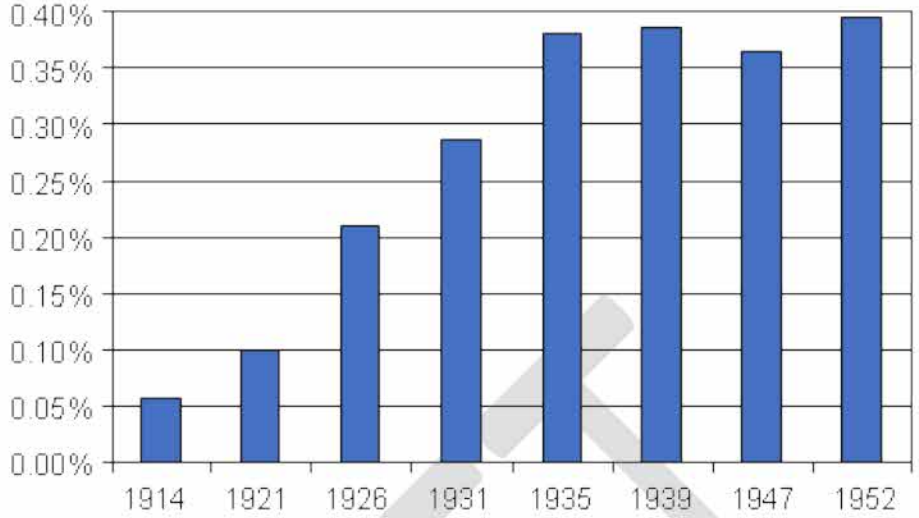

Figure 8 Mental Retardation prevalence in USA in public school between 1914 – 1952, (Source Nevin 2009, 303)

21. **Other work illustrates very strong relationship between preschool exposure to lead in blood and criminal behavior.** This observation has been made in various developed countries including USA, Canada, Britain, France, Australia, West Germany, Italy and New Zealand and others (Figure 9). The correlation is described by neurological behavioral damage in the initial year of life and the climax age committing crime, robbery and brutal offenses (Nevin 2007, 316). The adverse impacts of blood lead are also visible in particular age arrest and incarceration trends. The results of regression analysis of average massacre statistics across United States cities between 1985–1994 imply the reason of murder could be particularly related to severe lead poisoning in childhood (Nevin 2007, 315). There is enough evidence that *"preschool lead exposure affects the risk of criminal behavior later in life"* (Nevin 2007, 333).

22. Global trends and percentage of arrests highlight that preschool exposure to blood lead significantly affects young children offensive behavior and associated trends in index crime relating to property or robbery. *"Violent crime trends and shifts to higher adult arrest rates suggest blood lead also affects violent and repeat offending"*(Nevin 2007, 333). It is also evident that severe lead poisoning is the cause of high murder rates in USA as well as other parts of the world. (Nevin 2007, 333).

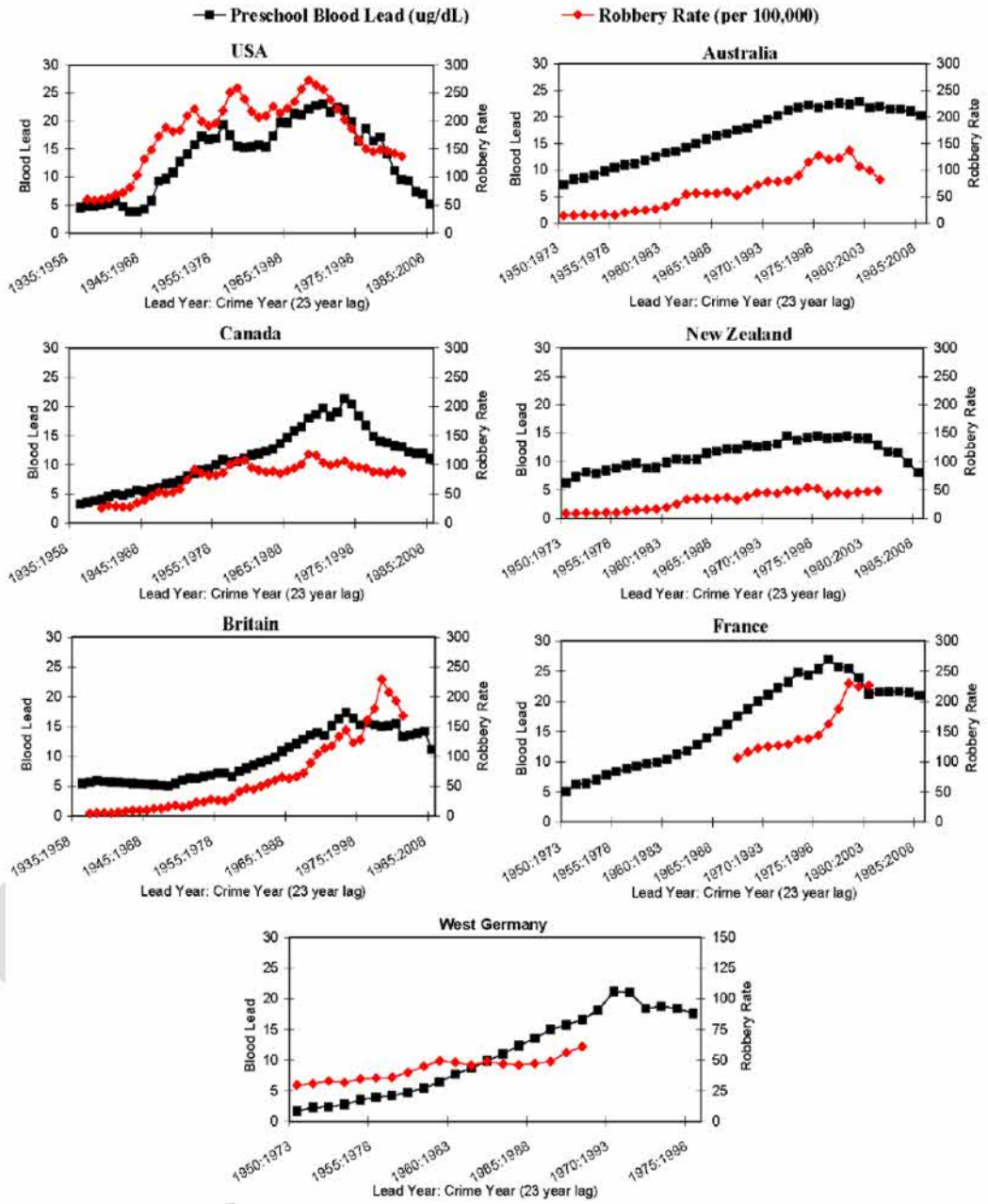

Figure 9 Preschool Blood Lead versus Robbery with 23-Year Lag for various countries (Source Nevin, 2007, 328).

23. **Low lead level is associated with neurological, cardiovascular, immunological, renal, reproductive and/or developmental effects.** There is enough evidence that blood Pb levels less

than 10 µg/dL or even 5 µg/dL are linked with adverse health effects in children as well as in adults (NTP 2012, xiii). In addition lead bioaccumulates in the bones and may cause harmful health impacts in adults even after long time of exposure and in expecting mothers accumulated lead from the bones can act as an endogenous source of lead poisoning for the growing fetus. (Meyer, Brown, and Falk 2008). Lead exposure causes proximal tubular injury in kidneys resulting to tubulo-interstitial disease and fibrosis (WHO 2010, 29, 30). Lead poisoning causes hyperuricaemia and gout by inhibiting secretion of uric acid as well as reduces renal clearance, glomerular filtration rate and tubular reabsorption. BLL higher than 40 µg/dl poses great risk of nephropathy and associated renal failure (ibid). Even the lower concentration of lead could increase the risk of kidney dysfunction by decline its function. There is inverse relationship between blood lead and glomerular filtration rate in groups having low blood level lead of 2 µg/dl. *People with diabetes and hypertension are at increased risk of clinical renal dysfunction at lower exposures to lead"* (WHO 2010, 29, 30). lead is linked to "a wide range of negative pregnancy outcomes, including early membrane rupture, low birth weight, spontaneous abortion, complications during pregnancy, increased perinatal mortality, inhibited postnatal growth and development" (Nriagu 1988,156).

24. **In 2006, the first incident of death of a child due to lead poisoning occurred in United States since 2000. The postmortem exposed a metallic heart shaped charm in the stomach which contained 99.1% of lead** (Meyer, Brown, and Falk 2008, 172). After that the charms were taken back and in two year time span it was the fifteenth recall of lead containing toys. In 2007, in United States a lot of recalls were announced for taking back leaded children toys on suspicion of containing lead and over a number of decades various products which children could possibly access have also been recalled (Meyer, Brown, and Falk 2008, 173).

25. **Early exposure can cause profound neurobehavioral problems including decreased life-long intellectual performance and behavioral changes** even at blood concentrations below 5 µg/dL, which researchers once thought was far too low to harm children. Lead exposure has also been associated with Alzheimer's and cardiovascular disease. (Kessler 2014, 97).

26. **Childhood lead exposure is also related to reducing brain region-specific gray matter volume in adults.** The regions which become affected comprise the parts of prefrontal

cortex and anterior cingulate cortex (ACC) which is responsible for mood regulation, decision-making and executive functions (Cecil et al 2008). Adverse cognitive and behavioral responses could be associated to effect of lead on brain growth due to constant changes in brain's structure (Cecil et al 2008) (Figure 10). Blood lead affects volume of brain as well as fine motor function in males, such effects were not found on females having same lead blood level. (ibid).

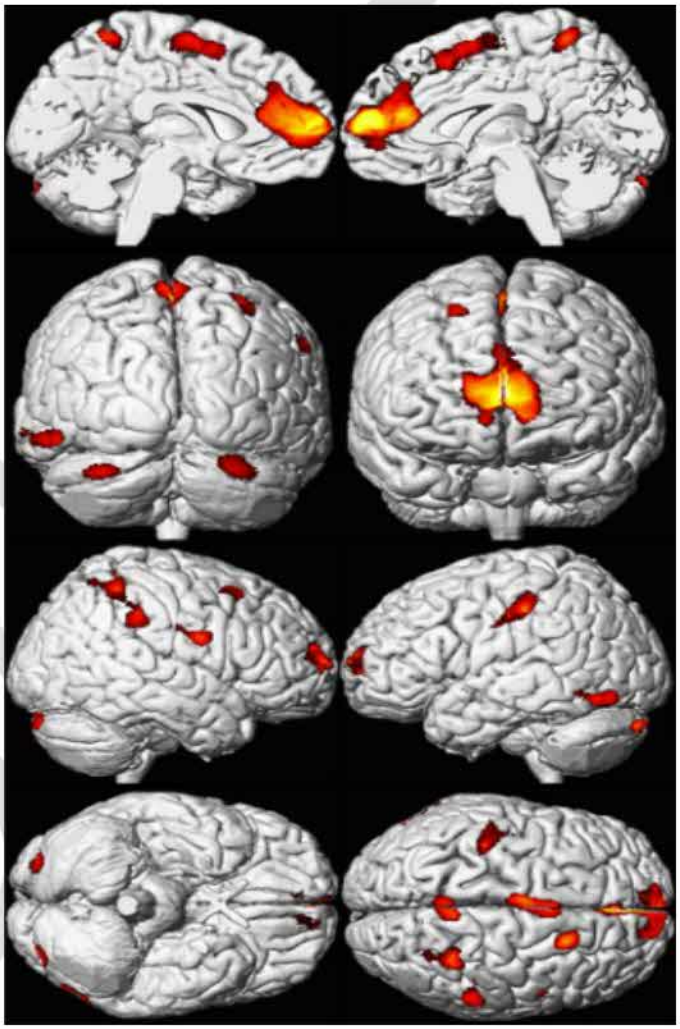

Figure 10 Regional Brain volume loss shown in red and yellow clusters from different angels of brain (Source Cecil et al 2008).

(http://www.ehatlas.ca/lead/human-impact/health-concerns), retrieved on May 15, 2016

27. **Research studies highlight likely relationship between blood lead level and emotional and behavior related issues in later adolescent age.** Low level **l**ead exposure <40 ug/dl illustrates minor but substantial possible relationship between childhood aggressive behavior as well as issues encountered by girls i.e., anxiety, somatic complaints and depression etc (McFarlane et al. 2013, 11). *"early childhood lead exposure may show small associations with adult emotional and behavioral functioning in female mood" (McFarlane et al. 2013, 16).*

28. Lead exposure is the fifth leading environmental health risk in developing countries in terms of premature deaths (Awe et al 2015) Figure 11

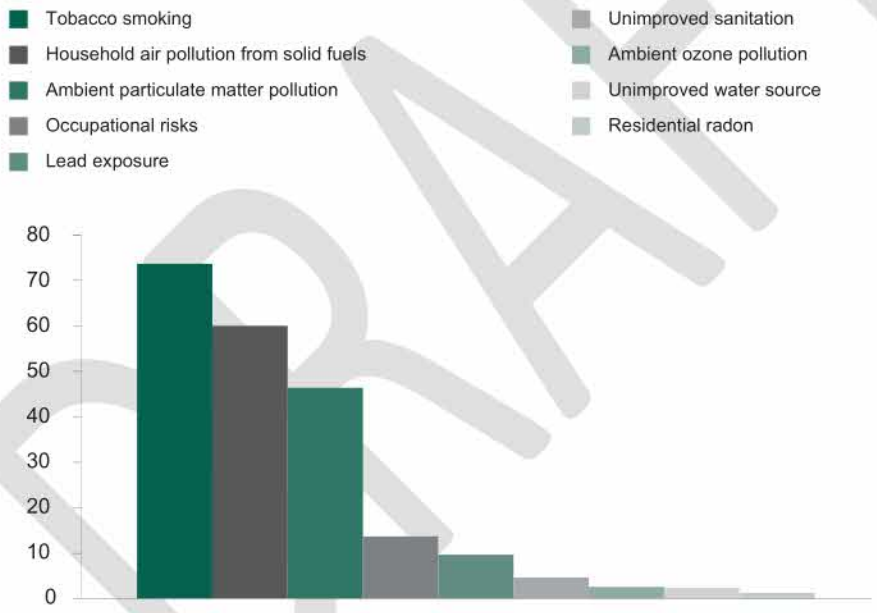

Figure 11 Comparison of Health risks in developing countries premature deaths (Source: Awe et al. 2015,7).

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B Global Burden and Costs of Lead Exposure

29. **The economic burden associated with childhood lead exposure for low and middle income countries amounted to 1.20% of world GDP.** Low- and middle-income countries disproportionately carry this burden. Figure 12, Figure 13.

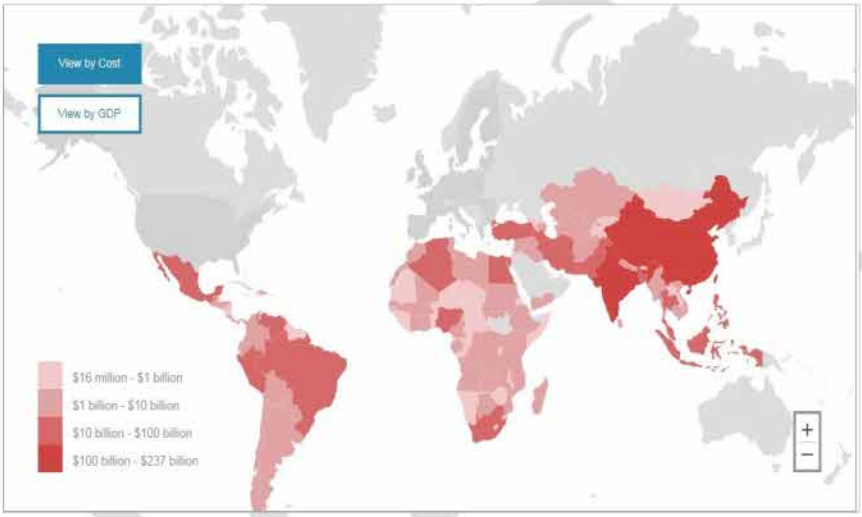

Figure 12: Economic Costs of Childhood Lead Exposure in Low and Middle Income Countries (source http://www.med.nyu.edu)

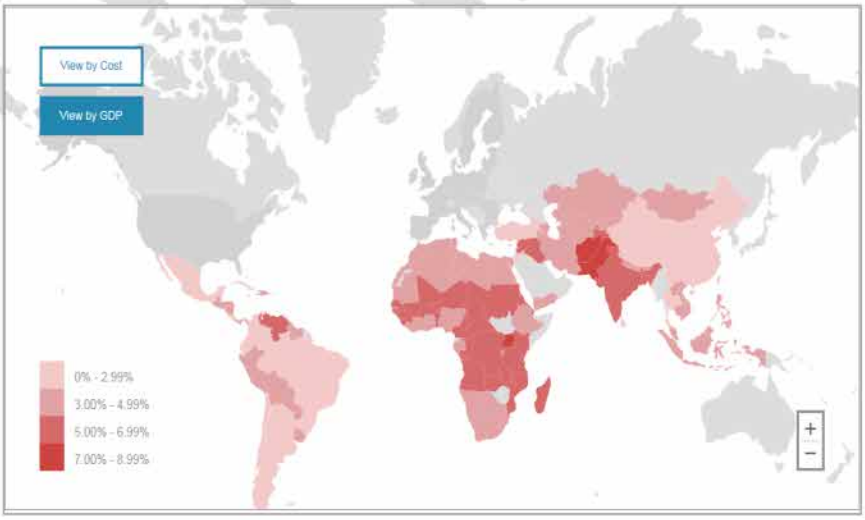

Figure 13: Economic Costs of Childhood Lead Exposure by GDP, (source http://www.med.nyu.edu)

The total estimated global economic lost was calculated as US $977 billion mainly suffered by poor and medium income countries (Figure 14). The major lost suffered by Asia amounting to $699.9 billion (1.88% of GDP), for Africa equivalent to $134.7 billion (4.03% of GDP) and for Latin America and the Caribbean $142.3 billion (2.04% of GDP) (Attina and Trasande 2013, 1097) For comparison, in the United States and Europe lead-attributable economic costs have been estimated at $50.9 and $55 billion, respectively, suggesting that the largest burden of lead exposure is now borne by low- and middle-income countries (Figure 15) (Attina and Trasande 2013, 1097), (UNEP 2013, 28) The estimated total financial loss lies between $728.6 - 1162.5 billion (Attina and Trasande 2013, 1097).

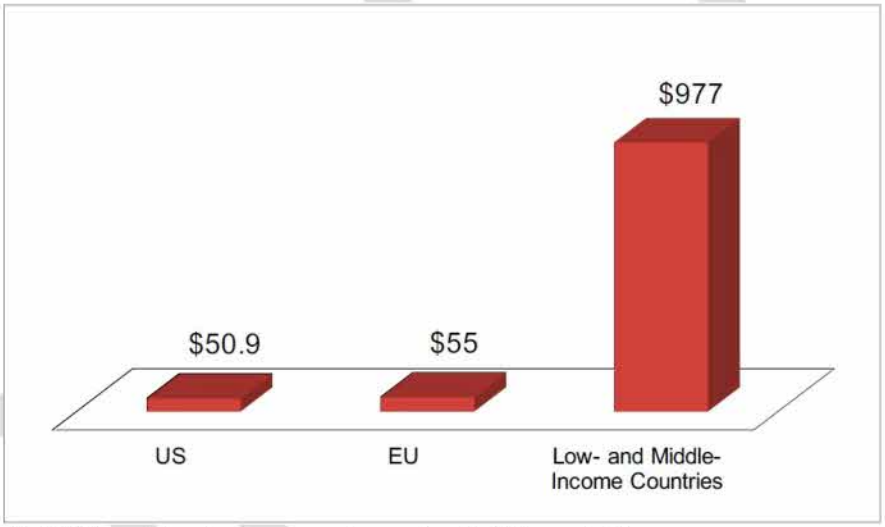

Figure 14 Burden of childhood lead exposure in cost of billions dollars, (source http://www.med.nyu.edu)

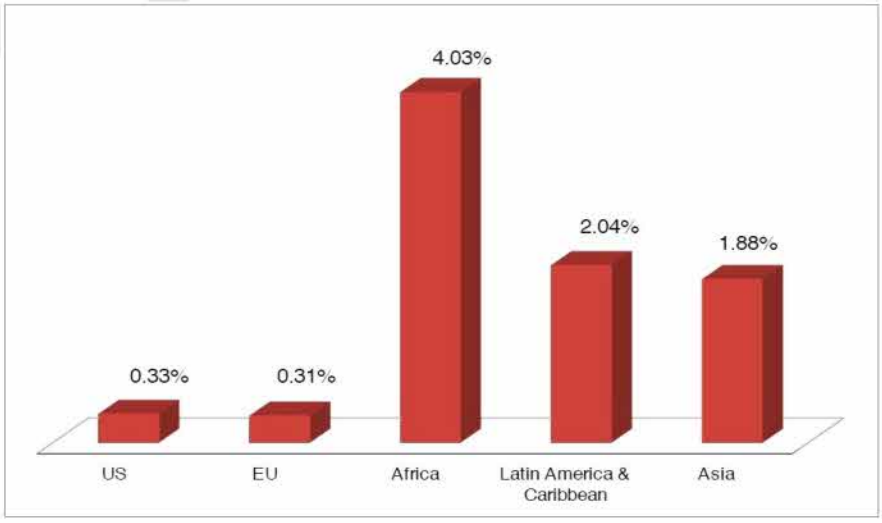

Figure 15 Comparison of childhood lead exposure as % of GDP (source http://www.med.nyu.edu)

30. **The economic burden associated with childhood lead exposure for low and middle income countries amounted to 1.20% of world GDP.** Low- and middle-income countries disproportionately carry this burden. Figure 12, Figure 13.

31. **Society pays a high cost associated to lead poisoning in terms of health care expenditure** for example in US in the year 2006 health related expenditure for being exposed to lead poisoning was very high between USD 10,805,891 to 53,099,158 (Table 1). While the rate of increased crime associated to lead poisoning in US was between USD 1,763,363,153 for the year 2006 (Table 2) and IQ loss associated to lead contamination in terms of reduced performance in the school was also very high in terns of loss of earning and revenue etc.(Table 3).

Blood lead level (µg/dL)	Cost of recommended medical action ($)	Lower bound of affected children (no.)	Upper bound of affected children (no.)[b]	Lower bound cost ($)	Upper bound cost ($)
10–15	74	24,554	120,656	1,816,996	8,928,552
15–20	74	8,185	40,220	605,690	2,976,305
20–45	1,207	6,347	31,189	7,660,829	37,644,611
45–70	1,335	376	1,848	501,960	2,466,585
> 70	3,444	64	314	220,416	1,083,104
All levels		39,526	194,227	10,805,891	53,099,158

Table1 Health care costs of Lead poisoning in US (in 2006 in USD) (Source Gould 2009,1164).

Crime	All crimes per 100,000 residents (no.)[a]	Lead-linked crimes per 100,000 residents (no.)[b]	Total lead linked crimes (no.)	Direct costs per crime ($)[c]	Total direct costs ($)[c]
Burglaries	1335.7	38.7	116,541	4,010	467,329,410
Robberies	213.7	0.83	2,499	22,871	57,154,379
Aggravated assaults	352.9	17.9	53,904	20,363	1,097,628,286

Rape	37.6	1.39	4,186	28,415	118,945,567
Murder	8.3	0.238	717	31,110	22,305,512
Totals			177,847		1,763,363,153

Table 2 Crimes associated with lead poisoning in US (Source Gould 2009,1165).

BLL (μg/dL)	Lower bound of affected children (no.)	Upper bound of affected children (no.)	Average BLL per BLL group (μg/dL)[b]	Average IQ point loss per μg/dL[c]	Lower bound IQ loss	Upper bound IQ loss
2–10	5,632,147	7,400,920	3.13	0.513	9,043,482	11,883,583
10–20	32,739	160,876[d]	~ 15	0.19	199,053	978,129
≥ 20	6,678	32,815[d]	~ 20	0.11	46,946	230,690
Totals					9,289,482	13,092,402

Table 3 Lead poisoning associated with IQ loss in US (Source: Gould 2009,1164).

32. **Lead exposure is still a major health issue in houses in Europe and United States, particularly old houses which pose high risk to soil, water, paint and dust and it increases at locations where repairs or renovation of housing is done**. According to an estimation around 66% of the burden of lead exposure (and its influence on mild mental retardation and cardiovascular effects) is due to lead based paint, polluted dust and soil in houses which approximately cause around 695,000 DALYs per year (Braubach et al. 2011, 144). The continuous production of new lead-based paint causes a promising risk to the all houses globally which could increase this figure in case no efforts are taken in order to stop it. The environmental burden of health related issues and loss of productivity relating to lead based paint in dwellings is highly significant (Braubach et al. 2011, 144).

33. In a study economic benefits of preventing elevated blood lead levels among a group of children ≤ 6 years old were estimated. By controlling/ eliminating lead based paint making an investment of $1–$11 billion for avoiding the future cost it was learnt that benefits related to each group in terms of saving the different expenditure would be health care ($11–$53 billion), special education ($30–$146 million), lifetime loss of earning ($165–$233 billion), tax revenue

loss ($25–$35 billion), attention deficit–hyperactivity disorder ($267 million), and the direct costs of crime ($1.7 billion) (Gould 2009,1162). It was estimated that for controlling lead paint hazard, return in investment would be USD $17–$221 for each dollar spent and it would provide net savings equal to USD $181–269 billion associated to just IQ loss (ibid*).* According to Gould 2009 *"There are substantial returns to investing in lead hazard control, particularly targeted at early intervention in communities most likely at risk. Given the high societal costs of inaction, lead hazard control appears to be well worth the price"* Gould 2009,1162).

34. Immunizations are often cited as one of the few interventions with positive returns. These returns for avoiding the hazards of lead paint compare favorably to those estimated for immunizations--between$5.30 and $16.50 --in costs prevented for every dollar spent on immunizations (Zhou et al. 2005).

35. It is estimated that lead accounts for 0.6% of the global burden of disease equivalent to 9 million DALYs (WHO 2010, 33) and it is the only environmental disease without a related non-environmental factor such as immune deficiency. Most estimates of disease burden and costs of lead are likely to be conservative given that they do not include estimates of death and severe morbidities resulting from very high blood lead levels. Such levels often involve intensive exposures that manifest as outbreaks. These events continue to occur periodically throughout low and middle income countries.

36. **The society will benefit an estimated annual amount of $43–110 billion or even more for eliminating lead exposure in children and the overall removal of lead in the environment will advantage all the children and adults in United States as well**. (Levin et al. 2008). Elevated BLLs not only costs to the individuals but these cause burden on the society in terms of economic drain. The link between IQ and loss of earnings in lifetime was estimated taking into account the direct and indirect costs incurred to the society of elevated BLLs approximately to $43.4 billion for a age group of five years old children based on average BLL of 2.7 μg/dL which caused loss of 0.25 IQ point for each 1 μg/dL of BLL and. *"Over a 20-year period (one generation), the loss amounts to $868 billion"* (Gilbert and Weiss, 2006, 696). It is estimated that the United States faces $50.9 billion annually in terms of loss of earnings due to IQ points lost for being exposed to lead (Kessler 2014, 102).

37. **In Ohio direct costs of exposure to elevated blood lead level to children above 10 µg/dL were calculated**. It was estimated that lead poisoning incurs $0.5 million annually to local governments but in the calculations indirect costs relating to the society of reduced IQ were ignored. So it is cost efficient to make investments for reducing childhood lead exposure. A research in Washington State investigated the total cost of being exposure to lead as $1.5 billion for children of five year for the cohort studied. Similar findings were calculated by various researchers incurring same cost to the society as well as likely contributions to increased neurodegeneration relating to aging. (Gilbert and Weiss, 2006, 694).

38. *"The association with childhood lead poisoning of lead-based paint, lead-contaminated dust and soil and lead in drinking-water is now well-established. Exposure to lead in housing in the European Region is calculated to result in at least 694 980 DALYs (79.2 per 100 000 population) per year"* (Braubach et al. 2011,6) Developed countries including United Sates have established policy measures in place to control the use of lead based paints but various developing countries including India have failed to regulate lead content in paint. In a study conducted in India it was found that paint samples contained thousands of ppm of lead particularly paint of yellow color had the maximum lead contamination (Kumar and Gottesfeld 2008, 333), Figure

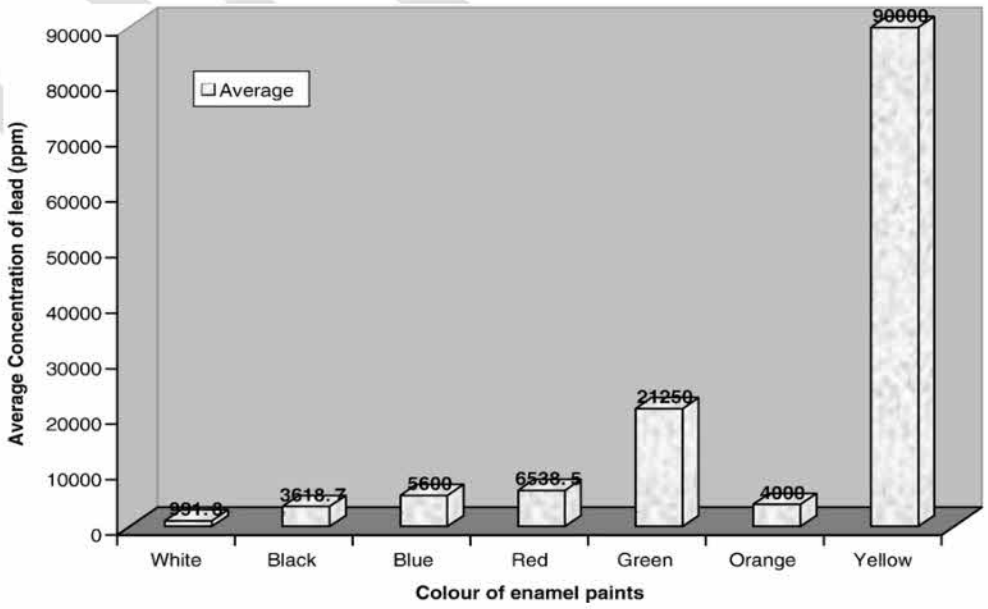

Figure 10 Average concentration of lead in different colours of enamel paint in India

Source: (Kumar and Gottesfeld 2008, 335).

39. According to a research 38 million homes in the United States contain lead based paint, out of that 24 million houses appeared to have risks of lead contamination in 2000. There are young children in four million of these houses and 1.2 million homes are at substantial risk with poor families living there having children less than 6 years old (Gould 2009, 1163). In 2006 1.02 million houses were high risk in 2006. Approaching these 1.02 million houses which require urgent attention would require amount ranging between $1,200–$10,800 for each housing unit and the calculated total cost appeared in the range of $1.2 billion - $11.0 billion (Gould 2009, 1163). Research conducted in 2000 estimated DALYs relating to lead based paint exposure associated with mild mental retardation and cardiovascular diseases were found to be enormous (Figure 11).

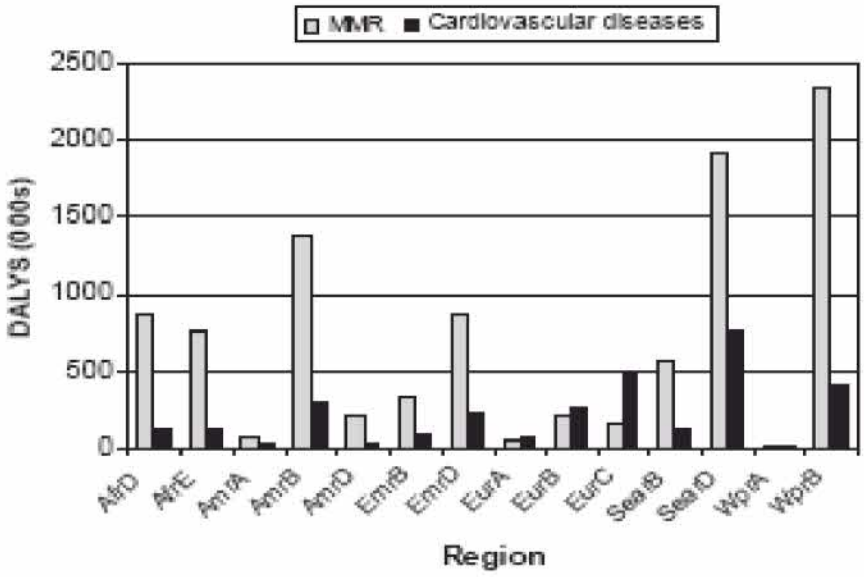

Figure 11 DALYs due to lead-induced mild mental retardation and cardiovascular diseases, in 2000 (Source WHO, 2010, 33).

(Note. The following abbreviations, are used in this figure: AfrD = Africa D; AfrE = Africa E; AmrA = America A; AmrB = America B; AmrD = America D; EmrB = Eastern Mediterranean B; EmrD = Mediterranean D; EurA = Europe A; EurB = Europe B; EurC = Europe C; Sea 1B = South-East Asia B; Sea 1D = South-East Asia B; WprA = Western Pacific A; WprB = Western Pacific B)

40. **Recent studies show that in low and middle income countries elevated BLL causes loss of IQ points costing $977 billion on annual basis resulting in low productivity and lowering of each IQ point costing a child estimated 2% of earning potential in their life time.** That economic burden was quantified as 1.2% of global GDP for 2011. In some states, number of IQ points lost due to lead exposure are much higher than 1 which require allocating more resources to eliminate lead based paints and exposure from other routes (Kessler 2014, 102). The lead related economic burden is very high according to a recent estimation it was calculated that "more than $50 billion in a single year is lost as a result of reduced cognitive potential and associated lost productivity" (CDC 2015, 1).

41. In 2012 lead associated global disease burden in terms of DALYs was equivalent to 13,936,000 and lead related diseases were Idiopathic intellectual disability 9.8%; ischaemic heart disease (IHD) 4% and stroke 4.6% and associated deaths were 674 000 (WHO 2016, 6).

Lead causes significant burden of disease there are annual:

- 143,000 deaths
- 8.977 (DALYs)
- 7.2 million DALYs – mild mental retardation
- 1.8 million DALYs – cardiovascular disease
- approximately 600,000 new cases of intellectual disabilities in children

(Source: GAELP tool kit)
http://web.unep.org/sites/all/themes/noleadpaint/docs/Module%20Bi%20Health%20Impacts%20FINAL.pdf

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Citations

1. Attina, Teresa M., and Leonardo Trasande. 2013. "Economic Costs of Childhood Lead Exposure in Low- and Middle-Income Countries." *Environmental Health Perspectives (Online)* 121 (9): 1097.

2. Awe, Yewande, Jostein Nygard, Steinar Larssen, Heejoo Lee, Hari Dulal, and Rahul Kanakia. 2015. "Clean Air and Healthy Lungs: Enhancing the World Bank's Approach to Air Quality Management."

3. Braubach, Matthias, David E Jacobs, David Ormandy, World Health Organization, and Regional Office for Europe. 2011. *Environmental Burden of Disease Associated with Inadequate Housing a Method Guide to the Quantification of Health Effects of Selected Housing Risks in the WHO European Region*. Copenhagen: World Health Organization Regional Office for Europe. http://www.euro.who.int/__data/assets/pdf_file/0017/145511/e95004sum.pdf.

4. CDC 2015, "Educational Interventions for Children Affected by Lead" Center for Disease Control, National Center for Environmental Health, Division of Emergency and Environmental Health Services.

5. Cecil, Kim M, Christopher J Brubaker, Caleb M Adler, Kim N Dietrich, Mekibib Altaye, John C Egelhoff, Stephanie Wessel, et al. 2008. "Decreased Brain Volume in Adults with Childhood Lead Exposure." Edited by John Balmes. *PLoS Medicine* 5 (5): e112.

6. Ettinger, Adrienne S., Anne M. Wengrovitz, C. Portier, and M. J. Brown. 2010. *Guidelines for the Identification and Management of Lead Exposure in Pregnant and Lactating Women*. US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Environmental Health/Agency for Toxic Substances and Disease

7. Gilbert, Steven G., and Bernard Weiss. 2006. "A Rationale for Lowering the Blood Lead Action Level from 10 to 2µg/dL." *NeuroToxicology* 27 (5): 693–701.

8. Gould, Elise. 2009. "Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control." *Environmental Health Perspectives* 117 (7): 1162–67. doi:10.1289/ehp.0800408.

9. Guillén-Mendoza, Daniel, Felipe Escate-Lazo, Fabiola Rivera-Abbiati, and Daniel Guillén-Pinto. 2013. "Plomo En Sangre de Cordón Umbilical de Neonatos Nacidos En Un Hospital Del Norte de Lima." *Revista Peruana de Medicina Experimental Y Salud Publica* 30 (2): 224–28.

10. Harrison, R. M., and D. P. H. Laxen. 1984. *Lead Pollution*. Boston, MA: Springer US. http://link.springer.com/10.1007/978-1-4615-9705-6.

11. Kessler, Rebecca. 2014. "Lead-Based Decorative Paints: Where Are They Still Sold—and Why?" *Environmental Health Perspectives* 122 (4): A96–103. doi:10.1289/ehp.122-a96.
12. Kumar, A, and P Gottesfeld. 2008. "Lead Content in Household Paints in India." *Science of The Total Environment* 407 (1): 333–37. doi:10.1016/j.scitotenv.2008.08.038.

13. Kumar, A, and P Gottesfeld. 2008. "Lead Content in Household Paints in India." *Science of The Total Environment* 407 (1): 333–37.

14. Lanphear, Bruce P., Richard Hornung, Jane Khoury, Kimberly Yolton, Peter Baghurst, David C. Bellinger, Richard L. Canfield, et al. 2005. "Low-Level Environmental Lead Exposure and Children's Intellectual Function: An International Pooled Analysis." *Environmental Health Perspectives* 113 (7): 894–99. doi:10.1289/ehp.7688.

15. Levin, Ronnie, Mary Jean Brown, Michael E. Kashtock, David E. Jacobs, Elizabeth A. Whelan, Joanne Rodman, Michael R. Schock, Alma Padilla, and Thomas Sinks. 2008. "Lead Exposures in U.S. Children, 2008: Implications for Prevention." *Environmental Health Perspectives* 116 (10): 1285–93. doi:10.1289/ehp.11241.

16. McFarlane, Alexander C., Amelia K. Searle, Miranda Van Hooff, Peter A. Baghurst, Michael G. Sawyer, Cherrie Galletly, Malcolm R. Sim, and Levina S. Clark. 2013. "Prospective Associations between Childhood Low-Level Lead Exposure and Adult Mental Health Problems: The Port Pirie Cohort Study." *NeuroToxicology* 39 (December): 11–17

17. Meyer, P, M Brown, and H Falk. 2008. "Global Approach to Reducing Lead Exposure and Poisoning." *Mutation Research/Reviews in Mutation Research* 659 (1-2): 166–75. doi:10.1016/j.mrrev.2008.03.003.

18. Nevin, Rick. 2007. "Understanding International Crime Trends: The Legacy of Preschool Lead Exposure." *Environmental Research* 104 (3): 315–36. doi:10.1016/j.envres.2007.02.008.

DRAFT

19. Nevin, Rick. 2009. "Trends in Preschool Lead Exposure, Mental Retardation, and Scholastic Achievement: Association or Causation?" *Environmental Research* 109 (3): 301–10. doi:10.1016/j.envres.2008.12.003.

20. Nriagu, Jerome O. 1988. "A Silent Epidemic of Environmental Metal Poisoning?" *Environmental Pollution* 50 (1): 139–61.

21. NTP 2012, " NTP Monograph Health Effects of Low-Level Lead", National Institutes of Health U.S. Department of Health and Human Services

22. Tibbetts, John. 2007. "Another Test for Lead Effects: Early Childhood Exposure Influences End-of-Grade Scores." *Environmental Health Perspectives* 115 (8): A417.

23. Tong, Shilu, and Anthony J. McMichael. 1999. "The Magnitude, Persistence and Public Health Significance of Cognitive Effects of Environmental Lead Exposure in Childhood." *Journal of Environmental Medicine* 1 (2): 103–10. doi:10.1002/(SICI)1099-1301(199904/06)1:2<103::AID-JEM15>3.0.CO;2-S.

24. UNEP 2013, "Lead in Enamel Decorative Paints National Paint Testing Results: A Nine Country Study", United Nations Environment Program

25. UNEP 2016, "Global Report on the Status of Legal Limits on Lead in Paint", United Nations Environment Program

26. WHO 2010. "Childhood Lead Poisoning". World Health Organization. Geneva, Switzerland.

27. WHO 2016. "The Public Health Impact of Chemicals: Knowns and Unknowns" World Health Organization. Geneva, Switzerland.

Web References

28. http://www.who.int/quantifying_ehimpacts/publications/preventingdisease6.pdf, retrieved on May 18, 2016).

29. http://www.ehatlas.ca/lead/human-impact/health-concerns), retrieved May 18, 2016).

DRAFT

30. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2212280/pdf/nihms37310.pdf, retrieved on May 24, 2016.

31. http://www.med.nyu.edu/pediatrics/research/environmentalpediatrics/leadexposure, retrieved on June 05, 2016

DRAFT

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Fri, 5 May 2017 11:58:00 -0400
To: wolfson.steve@epa.gov;bandemehr.angela@epa.gov;Mccann, Ellie;Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: FW: draft LP 1-pager for review
Attachments: leadpaintsummary ALB comments.docx

The draft with Angela's comments looks good. Thanks.

Not sure if Helen will be back in time, but possible she may be able to comment on Monday.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
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From: Maher, Lauren [mailto:Maher.Lauren@epa.gov]
Sent: Friday, May 05, 2017 11:40 AM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Wolfson, Steve <Wolfson.Steve@epa.gov>; Ward, W. Robert <Ward.Robert@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Tierney, Cate <Tierney.Cate@epa.gov>; Leonard, Darlene <Leonard.Darlene@epa.gov>; Cappuccilli, Eva <cappuccilli.eva@epa.gov>; Ford, Joe <Ford.Joe@epa.gov>; Maher, Lauren <Maher.Lauren@epa.gov>; Mance, Cassandra <mance.cassandra@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Ortega, Kellie <Ortega.Kellie@epa.gov>; Huber, Patrick <Huber.Patrick@epa.gov>; Sellars, Shayna <sellars.shayna@epa.gov>
Subject: FW: draft LP 1-pager for review

Hi all,

Attached is the document that Steve mentioned on our call today (with Angela's comments) for your review. Please send any comments to **Steve Wolfson** (Steve, is the deadline still Monday at 12pm?).

Thanks!

Lauren Maher
Attorney Advisor

Cross-Cutting Issues Law Office
Office of General Counsel
U.S. Environmental Protection Agency
202-564-9888
maher.lauren@epa.gov

From: Bandemehr, Angela
Sent: Wednesday, May 03, 2017 3:32 PM
To: Wolfson, Steve <Wolfson.Steve@epa.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Maher, Lauren <Maher.Lauren@epa.gov>
Subject: Re: draft LP 1-pager for review

Here are some initial thoughts from me. I suggest some different references, but have not pulled them out yet.

Maybe we can discuss at the team meeting?

Thanks for putting this together, Steve.

Angela

Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
Office of International and Tribal Affairs
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, MC2660R
Washington, DC 20460

Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: Wolfson, Steve
Sent: Tuesday, May 2, 2017 10:17:15 AM
To: Mccann, Ellie; Bandemehr, Angela; Maher, Lauren
Subject: draft LP 1-pager for review

Hi, folks –

Would you please take a look at this 1-pager and get me any comments **by noon on May 8**? It draws on various EPA and LPA materials (especially Walker's overview presentation) and the ABA R&R. If desired, we can discuss at the team meeting Friday or set another time to discuss.

The context is to provide it as a proposed draft for a call-out box in the upcoming UNEP report on Environmental Rule of Law. One of our partners in LPA efforts, Arnold Kreilhuber at UNEP-Legal, is supervising the report, which is largely being drafted at the Environmental Law Institute.

This draft 1-pager incorporates an initial round of comments from Lauren. I got a positive preliminary reaction from ELI to the idea of adding a call-out box on lead paint. There are still some process issues to work out between UNEP and the State Dept. before we send it, but Tim reports that they are almost worked out, so this seemed a good time to get input from the team.

As you review, a couple of things to keep in mind –

- ELI or UNEP might shorten it due to their space limitations, so streamlined edits are more likely to survive than new lengthy passages;
- One part of this that would really benefit from your input is the footnotes – in some places we have more than 1 source to choose from (or list both?), and in some we may benefit from additional cites. My cites largely track the ABA R&R, but for a UNEP publication that could be distributed quite widely, we should take another look at which sources we think are the best to cite.
- Some version of this 1-pager might be useful for us in other contexts, so if you think of other contexts it might be useful for as you're editing, plse. let me know. We could have a base 1-pager that we adapt for various contexts.

Best,

Steve Wolfson
US Environmental Protection Agency
Office of General Counsel – International Law Group
WJC North, Room 7506C
202 564-5411

(b) (5)

(b) (5)

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Fri, 26 Jan 2018 09:59:46 -0500
To: Mccann, Ellie;Angela Bandemehr;Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Subject: Re: Agenda for LPA team meeting on Friday

Just back from essentially a month of travel and unable to make today's call.

I am interested in the AAP agenda item. Angela, if OK I would call you on Monday to learn more about that.

Thanks, Henry

From: "Mccann, Ellie" <Mccann.Ellie@epa.gov>
Sent: Thursday, January 25, 2018 1:32 PM
To: "Smith, Walker" <Smith.Walker@epa.gov>,"Falk, Henry (CDC/ONDIEH/OD) (CTR)" <hxf1@cdc.gov>,"Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" <hhs0@cdc.gov>,"Bandemehr, Angela" <Bandemehr.Angela@epa.gov>,"Tierney, Cate" <Tierney.Cate@epa.gov>,"Leonard, Darlene" <Leonard.Darlene@epa.gov>,"Cappuccilli, Eva" <cappuccilli.eva@epa.gov>,"Harrington, Glenn" <Harrington.Glenn@epa.gov>,"Ford, Joe" <Ford.Joe@epa.gov>,"Maher, Lauren" <Maher.Lauren@epa.gov>,"Marzouk, Evonne" <Marzouk.Evonne@epa.gov>,"Mccann, Ellie" <Mccann.Ellie@epa.gov>,"Ortega, Kellie" <Ortega.Kellie@epa.gov>,"Huber, Patrick" <Huber.Patrick@epa.gov>,"Sellars, Shayna" <sellars.shayna@epa.gov>,"Wolfson, Steve" <Wolfson.Steve@epa.gov>
CC: "Sims, JaniceHQ" <Sims.JaniceHQ@epa.gov>,"Shannon, Julie" <Shannon.Julie@EPA.GOV>
Subject: Agenda for LPA team meeting on Friday

All – agenda below and attached. See you tomorrow.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520

<u>EPA Lead Paint Alliance Team meeting, January 26</u>, 2018, 10:30 – 12:00
Location: EPA East Room 5207A; Call: 866-299-3188, 202-566-0520#

<u>Invitees:</u>
OITA: Walker Smith, Angela Bandemehr, Patrick Huber, Evonne Marzouk, Glenn Harrington, Janice Sims
OPPT: Ellie McCann, Darlene Leonard, Eva Cappuccilli, Shayna Sellars, Julie Shannon
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

OECA: Cate Tierney, Kellie Ortega
OGC: Lauren Maher, Steve Wolfson
OAR: Joe Ford
US CDC: Helen Rogers, Henry Falk

Key meetings/calls

Previous 2 weeks (Jan. 15-26):

Jan. 17 – EPA/ABA-ROLI call re GEF project
Jan. 18 – EPA/UNEP-RONA mtg re Pb paint activities & coordination
Jan. 19 – EPA/UNEP/NCPCs re role in GEF project for National Cleaner Production Centers
Jan. 23 – EPA/AAP (American Academy of Pediatrics) call re opportunities to assist LPA
Jan. 23-25 – SAICM regional mtg: Asia Pacific, in Bangkok, Thailand
Jan. 24 – EPA/WHO/UNEP/DOC call re activities in Eurasian Region (EAEU/CEE)
Jan 24 – EPA/UNEP-LAC re preparations for SAICM regional mtg in Panama on Jan. 29

Upcoming:

Jan. 29-31 – SAICM regional mtg: Latin America & Caribbean, in Panama City, Panama
Jan/Feb (TBD) – UNEP submits to GEF the global lead paint project implementation plan
Feb. 6-8 – SAICM regional mtg: Africa, in Abidjan, Ivory Coast
Feb. 8 – OECD Chemicals Committee meeting
Feb. 9 – SAICM regional mtg: Western Europe & Other Groups, in Paris, France
Feb. 19-23 – SAICM regional mtg: Central & Eastern Europe, in Lodz, Poland
March (TBD) – World Bank annual staff training mtg; WB lead paint report to be published
March 13-15 – SAICM Second Intersessional Meeting (focus: SAICM beyond 2020)
April 12-13 – 2018 Summit of the Americas, Peru; possible lead paint presentation
April 23 – EPA/OEJ's Goldman Prize presentation for IPEN person's work on Philippine Pb paint law
October (TBD) – SAICM OEWG (Open-ended Working Group) meeting

AGENDA

1. GEF Lead Paint Project planning – Angela
2. Spanish translations of model law - Ellie
3. Latin America & Caribbean activities - Patrick
    - Jamaica workshop follow-up
    - SAICM regional meeting for LAC (Jan. 29)
4. Central & Eastern Europe activities - Angela
    - Kazakhstan's draft LP law
    - SAICM regional meeting for CEE (Feb. 19)
5. Ukraine's draft LP law - Ellie
6. American Academy of Pediatrics: future work – Angela
7. LPA brand identity guidelines - Ellie

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Fri, 3 Mar 2017 18:06:06 -0500
To: Bandemehr, Angela;Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Mccann, Ellie;Mance, Cassandra
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Call with the World Bank next week

Thanks. I can do Tuesday at 9 or at 2, Thursday at 10, or Friday at 9 or 3. If it's possible to avoid Friday at 3, that would be fine with me.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

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(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, March 03, 2017 3:48 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Mance, Cassandra <mance.cassandra@epa.gov>
Subject: RE: Call with the World Bank next week

One correction – remove Friday at 2 pm from the list of possible times/dates. Thanks!

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Friday, March 03, 2017 3:43 PM
To: Henry Falk (hxf1@cdc.gov) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Ellie McCann <mccann.ellie@epa.gov>; Mance, Cassandra <mance.cassandra@epa.gov>
Subject: Call with the World Bank next week

When is a good time to have a call with the World Bank on the lead paint report next week?

For Ellie and I the following times are good:

- Tuesday at 9 or 1 or 2
- Thursday at 10 or 2
- Friday at 9 or 2 or 3

Please let me know what works for you and I'll notify the Bank on Monday. By the way, Mary Jean will be working on it for the Bank.

Thanks!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Wed, 19 Oct 2016 09:31:17 -0400
To: 'Bandemehr, Angela'
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Draft Outline

(b) (5)

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

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From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Wednesday, October 19, 2016 8:58 AM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>
Subject: FW: Draft Outline

(b) (5)

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Ernesto Sanchez-Triana [mailto:esancheztriana@worldbank.org]
Sent: Tuesday, October 18, 2016 10:37 PM

To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Yewande Aramide Awe <yawe@worldbank.org>; Ana Luisa Gomes Lima <alima1@worldbank.org>; Shafick Hoossein <shoossein@worldbank.org>
Subject: RE: Draft Outline

Dear Angela,
For your comments, I am attaching the draft ToRs for the economic analysis.
Best regards,
Ernesto

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Thursday, October 06, 2016 2:40 PM
To: Shafick Hoossein <shoossein@worldbank.org>; Ruth Jane Kennedy-Walker <rkennedywalker@worldbank.org>; Henry Falk <hxf1@cdc.gov>; hhs0@cdc.gov; Mccann, Ellie <Mccann.Ellie@epa.gov>; Wolfson, Steve <Wolfson.Steve@epa.gov>
Cc: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>
Subject: Draft Outline

Dear All:
Based on our call this week, I have revised the outline. Please let me know if you have further thoughts and comments.

Also, please note that our next call is on October 20th. I sent an update to change the time from 2 pm to 1 pm DC time, due to a conflict. Please let me know if this works for you.

Best,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Bandemehr, Angela
Sent: Wednesday, October 05, 2016 9:33 AM
To: Shafick Hoossein <shoossein@worldbank.org>; Ruth Jane Kennedy-Walker <rkennedywalker@worldbank.org>; Henry Falk <hxf1@cdc.gov>; hhs0@cdc.gov; Mccann, Ellie <Mccann.Ellie@epa.gov>
Subject: Call follow up

Thank you all for a good call! I noted the following action items.
- Angela revise outline
- Angela to continue working on chapters 2 and 3
- Shafick to check with Ernesto on the TOR and involving air economists. Ruth will help wth the latter.

I look forward to our next call in two weeks.

Angela

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Sun, 4 Feb 2018 08:55:51 -0500
To: Bandemehr, Angela;Buchanan, Sharunda D. (CDC/ONDIEH/NCEH);Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie;Marzouk, Evonne
Subject: RE: EPA-CDC meeting

Hi all, the Wed 11am time slot in general is very good for me. Unfortunately, I won't be able to make this Wednesday's meeting.

PS. Wednesday is my 75th birthday, and my family just detailed for me the plans for the day, my son is flying in from San Francisco to participate, etc. Turns out this Wednesday is booked. All in a good cause. I plan to join the following Wednesdays. Sorry about this. I'll catch up with Sharunda after the meeting. Henry

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
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Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

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From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Thursday, February 1, 2018 2:33 PM
To: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: EPA-CDC meeting

Hi everyone!
Since we have now changed our Lead Paint Team meetings to the time for our EPA-CDC meeting (11 am on Wednesday, starting on Feb 7), I suggest the EPA-CDC discussion be the central agenda item for the team meeting call.

If we find that there are several topics where we need to follow up on a small group basis, we can do that subsequently.

Would this be acceptable to everyone?

Best,
Angela

From: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) [mailto:sdb4@cdc.gov]
Sent: Friday, January 26, 2018 2:05 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; hhs0@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Thanks, so much…this is a good time for me!

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, January 26, 2018 2:02 PM
To: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Hi Sharunda:
We could do 11 am. Would that work for you? We could keep it to 30-45 minutes to give you time before your afternoon meeting, if you like.

Would this work for you, Henry?

Thanks for your flexibility.

Angela

From: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) [mailto:sdb4@cdc.gov]
Sent: Friday, January 26, 2018 1:58 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; hhs0@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

February 7th, I'm scheduled for an afternoon meeting, 12:30 – 3:30 pm. I do have some availability on this day during the morning, however.

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, January 26, 2018 1:52 PM
To: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Wednesday or Thursday afternoon would work best for us, but it does not appear that both Henry and Sharunda are available at those times. Should we look at the week after next? Now I'm thinking I'd like to also invite my Office Director, Walker Smith to the call, if possible, and it would be easier to involve her, if we have more lead time.

We could do Wednesday, February 7 at 2 or 3 pm. Would that work?

Thank you for your patience in scheduling!

Regards,
Angela

From: Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) [mailto:sdb4@cdc.gov]
Sent: Friday, January 26, 2018 1:37 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; hhs0@cdc.gov
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Next week's availability includes the following:

- Tues, Jan 30 -- 9:30 – 11:30
- Thurs, Feb 1 -- 1 – 3pm
- Fri, Feb 2 – 9:30 – 10:30 am

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, January 26, 2018 12:25 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>; Buchanan, Sharunda D. (CDC/ONDIEH/NCEH) <sdb4@cdc.gov>
Subject: RE: Agenda for LPA team meeting on Friday

Hi Henry:
Great idea for an introductory call with Sharunda. Since our lead on the AAP is out today and I'm not sure of her schedule on Monday, plus Ellie is out Monday, I think it would be better to wait to do an introductory call with Sharunda for later next week. Would that work? If so, please let us know what day would work best.

If you still want to talk about AAP on Monday, Evonne and I would be happy to call you.

Regards,

Angela

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Friday, January 26, 2018 10:18 AM
To: hhs0@cdc.gov; Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Marzouk, Evonne <Marzouk.Evonne@epa.gov>; SDB4@cdc.gov
Subject: Re: Agenda for LPA team meeting on Friday

I am free all day Monday. Perhaps it would also be a good time to introduce Sharunda to you. Helen, can you check if Sharunda available Monday?

From: "Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" <hhs0@cdc.gov>
Sent: Friday, January 26, 2018 10:13 AM
To: "Bandemehr, Angela" <Bandemehr.Angela@epa.gov>
CC: "Falk, Henry (CDC/ONDIEH/OD) (CTR)" <hxf1@cdc.gov>,"Mccann, Ellie" <Mccann.Ellie@epa.gov>,"Marzouk, Evonne" <Marzouk.Evonne@epa.gov>,"Buchanan, Sharunda D. (CDC/ONDIEH/NCEH)" <sdb4@cdc.gov>
Subject: Re: Agenda for LPA team meeting on Friday

I was going to mention this on the call today—Dr Sharunda Buchanan will be attending these meetings instead of me going forward. So please loop her into this and subsequent meetings. Unfortunately, she is unable to make the call today, but I've cc:d her so you can start adding her to invites.

Thanks! Helen

Helen S. Rogers, PhD
Senior Science Officer/ Lead Scientist
Water and Food Environmental Health Services Branch (proposed)
Division of Environmental Health, Service and Practice (proposed)
CDC/NCEH/Division of Emergency and Environmental Health Services
I telework Tuesday's and Fridays from 7-3:30.
404-784-2531 (cell)
404-663-1203 (blackberry)

On Jan 26, 2018, at 10:04 AM, Bandemehr, Angela <Bandemehr.Angela@epa.gov> wrote:

> Hi Henry:
> Happy to talk about the AAP engagement. Looping in Evonne, who is leading on this. What time would work for a call on Monday?
> Angela
>
> ---
>
> **From:** Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
> **Sent:** Friday, January 26, 2018 10:00 AM
> **To:** Mccann, Ellie <Mccann.Ellie@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; hhs0@cdc.gov
> **Subject:** Re: Agenda for LPA team meeting on Friday
>
> Just back from essentially a month of travel and unable to make today's call.

I am interested in the AAP agenda item. Angela, if OK I would call you on Monday to learn more about that.

Thanks, Henry

From: "Mccann, Ellie" <Mccann.Ellie@epa.gov>
Sent: Thursday, January 25, 2018 1:32 PM
To: "Smith, Walker" <Smith.Walker@epa.gov>,"Falk, Henry (CDC/ONDIEH/OD) (CTR)" <hxf1@cdc.gov>,"Schurz Rogers, Helen (CDC/ONDIEH/NCEH)" <hhs0@cdc.gov>,"Bandemehr, Angela" <Bandemehr.Angela@epa.gov>,"Tierney, Cate" <Tierney.Cate@epa.gov>,"Leonard, Darlene" <Leonard.Darlene@epa.gov>,"Cappuccilli, Eva" <cappuccilli.eva@epa.gov>,"Harrington, Glenn" <Harrington.Glenn@epa.gov>,"Ford, Joe" <Ford.Joe@epa.gov>,"Maher, Lauren" <Maher.Lauren@epa.gov>,"Marzouk, Evonne" <Marzouk.Evonne@epa.gov>,"Mccann, Ellie" <Mccann.Ellie@epa.gov>,"Ortega, Kellie" <Ortega.Kellie@epa.gov>,"Huber, Patrick" <Huber.Patrick@epa.gov>,"Sellars, Shayna" <sellars.shayna@epa.gov>,"Wolfson, Steve" <Wolfson.Steve@epa.gov>
CC: "Sims, JaniceHQ" <Sims.JaniceHQ@epa.gov>,"Shannon, Julie" <Shannon.Julie@EPA.GOV>
Subject: Agenda for LPA team meeting on Friday

All – agenda below and attached. See you tomorrow.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520

EPA Lead Paint Alliance Team meeting, January 26, 2018, 10:30 – 12:00
Location: EPA East Room 5207A; Call: 866-299-3188, 202-566-0520#

Invitees:
OITA: Walker Smith, Angela Bandemehr, Patrick Huber, Evonne Marzouk, Glenn Harrington, Janice Sims
OPPT: Ellie McCann, Darlene Leonard, Eva Cappuccilli, Shayna Sellars, Julie Shannon
OECA: Cate Tierney, Kellie Ortega
OGC: Lauren Maher, Steve Wolfson
OAR: Joe Ford
US CDC: Helen Rogers, Henry Falk
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Key meetings/calls

Previous 2 weeks (Jan. 15-26):

Jan. 17 – EPA/ABA-ROLI call re GEF project
Jan. 18 – EPA/UNEP-RONA mtg re Pb paint activities & coordination
Jan. 19 – EPA/UNEP/NCPCs re role in GEF project for National Cleaner Production Centers
Jan. 23 – EPA/AAP (American Academy of Pediatrics) call re opportunities to assist LPA
Jan. 23-25 – SAICM regional mtg: Asia Pacific, in Bangkok, Thailand
Jan. 24 – EPA/WHO/UNEP/DOC call re activities in Eurasian Region (EAEU/CEE)
Jan 24 – EPA/UNEP-LAC re preparations for SAICM regional mtg in Panama on Jan. 29

Upcoming:

Jan. 29-31 – SAICM regional mtg: Latin America & Caribbean, in Panama City, Panama
Jan/Feb (TBD) – UNEP submits to GEF the global lead paint project implementation plan
Feb. 6-8 – SAICM regional mtg: Africa, in Abidjan, Ivory Coast
Feb. 8 – OECD Chemicals Committee meeting
Feb. 9 – SAICM regional mtg: Western Europe & Other Groups, in Paris, France
Feb. 19-23 – SAICM regional mtg: Central & Eastern Europe, in Lodz, Poland
March (TBD) – World Bank annual staff training mtg; WB lead paint report to be published
March 13-15 – SAICM Second Intersessional Meeting (focus: SAICM beyond 2020)
April 12-13 – 2018 Summit of the Americas, Peru; possible lead paint presentation
April 23 – EPA/OEJ's Goldman Prize presentation for IPEN person's work on Philippine Pb paint law
October (TBD) – SAICM OEWG (Open-ended Working Group) meeting

AGENDA

1. GEF Lead Paint Project planning – Angela
2. Spanish translations of model law - Ellie
3. Latin America & Caribbean activities - Patrick
    - Jamaica workshop follow-up
    - SAICM regional meeting for LAC (Jan. 29)
4. Central & Eastern Europe activities - Angela
    - Kazakhstan's draft LP law
    - SAICM regional meeting for CEE (Feb. 19)
5. Ukraine's draft LP law - Ellie
6. American Academy of Pediatrics: future work – Angela
7. LPA brand identity guidelines - Ellie

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Wed, 15 Mar 2017 18:55:49 -0400
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Bandemehr, Angela
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Follow up to WB/EPA call on March 10

I was on the call, and my sense of the conversation at this point was that they were only asking about materials that they might share on their travels. I guess there might be requests for in person travel later on, but they conceivably could use their contract with Mary Jean for that. At least on the call they weren't talking about travel.

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Henry Falk, MD, MPH
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Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
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hxf1@cdc.gov

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From: Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Sent: Wednesday, March 15, 2017 12:47 PM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: Follow up to WB/EPA call on March 10

Hi Angela,

Please let me know if there is other information they need, and I'll see what I can find.

I can't even fathom a guess at our travel dollars, but I suspect they don't include travel to Southeast Asia!

Regards, Helen

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Wednesday, March 15, 2017 12:40 PM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: Follow up to WB/EPA call on March 10

Hi Helen!
Thanks for pulling this together. I'm not sure what they were requesting exactly, but this is good information for them to have. Not sure if they wanted to have a person from CDC or EPA to help with this or just information. But I think sending information is a good step. On our side, our travel dollars and personnel are very limited. I can imagine it is the same for you.

Thanks,
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) [mailto:hhs0@cdc.gov]
Sent: Wednesday, March 15, 2017 10:57 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Subject: RE: Follow up to WB/EPA call on March 10

Hi Angela,

The documents at this URL have been cleared by CDC. These include the lead prevalence studies and environmental sampling modules, as well as additional cleared materials:
https://www.cdc.gov/nceh/lead/publications/default.htm#small_area_surveillance

In addition, I am attaching the slides from the GAELP website.

Does this cover what WB is requesting?

Thanks!
Helen

Helen S. Rogers, PhD
Associate Director for Science
Division of Emergency and Environmental Health Services | Office of the Director, MS F-60
National Center for Environmental Health | Centers for Disease Control and Prevention
770-488-3431 (Office) | 404-784-2531 (Mobile) | 404-663-1203 (blackberry)
e-mail: Helen.rogers@cdc.hhs.gov

I telework on Fridays

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Monday, March 13, 2017 11:45 AM
To: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Shafick Hoossein <shoossein@worldbank.org>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Wolfson, Steve

<Wolfson.Steve@epa.gov>; Mance, Cassandra <mance.cassandra@epa.gov>; Ana Luisa Gomes Lima <alima1@worldbank.org>; Yewande Awe <yawe@worldbank.org>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Sims, JaniceHQ <Sims.JaniceHQ@epa.gov>
Subject: Follow up to WB/EPA call on March 10

Greetings everyone!
As promised, here is a summary of key issues status and actions after our call on Friday. Thanks so much for the discussion, it was very productive, as evidenced by the very long action item list! For readability, I have put the status and actions for the lead paint report first. Please let me know if I missed anything.

I will be checking schedules to set up another call the week after next and will send out a separate email on this.
Thanks!
Angela

- Lead Paint Report

- WB in process of hiring Mary Jean Brown as a health consultant.
- An economic consultant is already on board.
- WB seeking input on a policy consultant to help explain how governments can put in place lead paint policies
    - ACTION: EPA/CDC to send recommendations for policy consultant
- ACTION: Conduct revisions of existing chapters in parallel with the contractor working on some of the chapters with the following authors:
    - Chapters 1 and 2 (Introduction and Health): health consultant
    - Chapter 3 (Global Status): WB to add its work; EPA to update Global Alliance work
    - Chapter 4 (Case Studies): health consultant/policy consultant
        - NOTE: possibly the policy consultant could help here, as it requires review of regulations?
    - Chapter 5 (Economic impact): economic consultant
    - Chapter 6 (Best Practices): WB?
    - Chapter 7 (Government Action): WB/policy consultant?
    - Chapter 8 (Conclusions): WB/policy consultant?
- WB may provide the report as an online learning course or tool.
- WB seeking to have a draft report by May.

- Model Lead Paint Law

    - EPA finalizing next draft with UNEP and WHO this week
    - ACTION: EPA will send to the World Bank by next week, pending outcome of discussions

- Possible joint regional work on lead paint

    - Southeast Asia Region: EPA and the WB are working there bilaterally in some of the same countries; it may be possible and desirable to coordinate our missions and activities. The WB is conducting a mission from May 15-31 in Lao, Cambodia, Vietnam and Korea. EPA is developing a plan for travel to the region in April and in the Summer and Fall.

        - ACTION: Ernesto to send travel plan; EPA to provide information on travel plan
        - ACTION: Explore possible coordination of missions/activities in this region, if feasible
        - ACTION: CDC to share information on blood lead testing and surveys
        - ACTION: EPA to share information from the Alliance Toolkit and WHO on lead paint testing

    - Specific Southeast Asia Country Status and Actions

        - Lao:

            - WB program programmatic operation approved and being implemented; Lao committed to lead paint law by May 2018.
            - ACTION: WB to provide new version of lead paint model law when it is available from EPA.
            - ACTION: WB planning possible workshop in next 3-4 months.

        - Vietnam:

            - WB planning to travel to Vietnam at the end of April and will talk about lead, including lead in paint.
            - EPA engagement in Vietnam is described below in "Background"

        - Cambodia:

            - WB planning travel to Cambodia in May;

        - EPA engagement in Cambodia described in "Background" lead to inclusion of lead paint in draft, new Environmental Code; details to be developed in implementing directive.
        - ACTION: EPA to provide Cambodia with latest draft of model lead paint law to assist with development of implementing directives

- Latin America and the Caribbean
    - Mexico: WB possible travel to Mexico
        - ACTION: EPA to provide background/talking points on lead in paint (and other issues)
    - Colombia/Peru: WB mission end of March
        - ACTION: EPA to provide background/talking points on lead in paint (and other issues
- Africa: The Lead Paint Alliance is engaged with the East Africa and West Africa regional economic groups to promote regional lead paint laws. An upcoming Environment and Health Ministers Conference to be held June 19-23 is an opportunity to highlight lead in paint.
    - ACTION: EPA to send concept note for ministers meeting

Background on EPA's engagement in Southeast Asia on Lead in Paint:

Vietnam

In 2016 EPA Office of General Counsel sent a small team to Hanoi to meet with Vietnam Ministry of Environment and Natural Resources officials and U.S. AID representatives. During the visit it became apparent that MONRE Department of Legal Affairs is very interested in expanding cooperation, in particular to further develop the environmental law framework and implementing sub-legislation, more clearly define standards and roles between agencies, and for coordination mechanisms and improving capacity for compliance assurance.
Several additional missions during the course of this year are being planned, including several workshops on environmental law topics (possibly air pollution, water pollution, lead paint elimination), potentially including "twinning" projects with other countries in East Asia. The timing and focus of these sessions is not yet set in stone, but we anticipate most of these meetings will take place late spring through summer.

Cambodia

In 2016 EPA Office of General Counsel sent two small legal drafting teams to Phnom Penh to work with Cambodia Ministry of Environment officials in support of a UNDP-U.S. AID program drafting a new Cambodia Environmental Code. EPA provided legal text on a range of pollution prevention and control issues, including public disclosure of pollutant discharge information (PRTR), water pollution control, hazardous waste management, and control of toxic chemicals, including elimination of lead paint. The Cambodian officials were very receptive to EPA's presentation of the case for, and key elements of, legal limits on lead paint, and indicated their intent to include such provisions in their Environmental Code or in implementing directives.

Several additional missions during the course of this year are being planned, to assist Cambodia MOE with implementation of the new Environmental Code. We anticipate addressing several of the topics listed above, including lead paint elimination. The timing and focus of these sessions is not yet set in stone, but we anticipate a meeting focused on coordination and agenda-setting this spring followed by two more in-depth substantive discussions in the summer.

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From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Tue, 15 Nov 2016 14:25:42 -0500
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Bandemehr, Angela
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: following up to obtain lead consultant contacts

Angela, I think it would be OK to reach out to Joel Schwartz and see if he has any recommendations. He does travel a lot, etc. and I'm not certain we'll hear back in time, but nothing lost. You can say that I suggested you ask him.

CDC Contact Info
Henry Falk, MD, MPH
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Room 10003, Building 106, Chamblee Campus.
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From: Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Sent: Tuesday, November 15, 2016 10:05 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: following up to obtain lead consultant contacts

Scott Grosse would be a good person to ask—as would Adam Skelton who runs the Prevention Effectiveness program.

I can reach out to them. Do we have any specific descriptions of the project that I can send along? I have the consultant terms of reference, can I send that?

Helen

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Tuesday, November 15, 2016 9:29 AM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: following up to obtain lead consultant contacts

Hi Helen!
Do you think it is worth following up with Scott Grosse at CDC about any other ideas for folks with experience in lead cost-benefit analyses? What about with Joel Schwartz? I do not know either of

them, but would be happy to reach out to them – maybe copying you also? I'd like to put in at least one other name for an economist and/or someone who can do a cost-benefit analysis. I think the WB asked only for one recommendation, but it never hurts to give extra ideas.

(b) (5)

Thanks!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Monday, November 14, 2016 9:43 AM
To: Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Mance, Cassandra <mance.cassandra@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: Suggestions for World Bank contractors

(b) (5)

(b) (5)

I hope this is helpful. I just returned from India and see a conference call on the calendar for Wednesday morning; can you fill me in briefly on what that one is about? Many thanks, Henry

CDC Contact Info
Henry Falk, MD, MPH
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From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Monday, November 14, 2016 9:07 AM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Mance, Cassandra <mance.cassandra@epa.gov>
Subject: Suggestions for World Bank contractors

Good morning!

I'm just now getting to this task the WB asked us to look into - recommending any other researchers who could work on their report. If you recall, they were looking both for an economist and a generalist.

I went back to some email exchanges I had last year with Mary Jean and others in the EPA Children's Health office and came up with this list. Do you know any of them? Would you recommend them? Any others?

(b) (5)

Thanks!
Angela

Childhood Lead Poisoning: Conservative Estimates of the ...

ehp.niehs.nih.gov

Lead poisoning is a serious hazard for children and causes significant biological and neurologic damage linked to cognitive and behavioral impairment (Bellinger 2008a

Mark Miller, MD, MPH - Western States PEHSU

wspehsu.ucsf.edu

Dr. Mark Miller is an Assistant Clinical Professor in the Departments of Pediatrics and Internal Medicine (Division of Occupational and Environmental Health) at the University of California San Francisco (UCSF). He is also the Co-Director of the UCSF Pediatric Environmental Health Specialty Unit (PEHSU) and the director of the Children's Environmental Health

Program at California Environmental ...

Thanks,
Angela

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From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Fri, 12 Aug 2016 12:12:04 -0400
To: Brown, Mary Jean (CDC/ONDIEH/NCEH);'Bandemehr, Angela'
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: for call with bloomberg

(b) (5)

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hxf1@cdc.gov

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From: Brown, Mary Jean (CDC/ONDIEH/NCEH)
Sent: Friday, August 12, 2016 11:11 AM
To: 'Bandemehr, Angela' <Bandemehr.Angela@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: for call with bloomberg

Here are some comments. I would focus on the second half of this agenda, Jessica is an expert in lead and lead poisoning, MJ

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, August 12, 2016 8:41 AM

To: Brown, Mary Jean (CDC/ONDIEH/NCEH) <mjb5@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: for call with bloomberg

Walker asked me to put together an internal EPA outline of the lead paint alliance work to help guide our message. Please find it attached. I also had the additional thoughts below based on a review of their annual report and would like your thoughts.

(b) (5)

Thanks
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Wed, 13 Apr 2016 14:26:22 -0400
To: 'Sinks, Tom';Teichman, Kevin
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Hi Kevin

Kevin, I probably know as much as anybody else about hippopotamus sweat. I hope all is well!

My son worked one summer for a month at the Atlanta zoo when he was a teenager. His most memorable experience was immunizing the rhinoceros. There is apparently only one small spot on the rhinoceros where you get the needle through the body armor, and it took them about 4 hours to position the rhinoceros so that they could plunge the needle and then run away as fast as possible. I'm sure that collecting sweat from a hippo has its moments..

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From: Sinks, Tom [mailto:Sinks.Tom@epa.gov]
Sent: Tuesday, April 12, 2016 11:12 AM
To: Teichman, Kevin <Teichman.Kevin@epa.gov>
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: Hi Kevin

I had lunch with Henry Falk yesterday and he made a point of asking me to say hello to you. I forgot to mention to Henry your fascinating research on hippopotamus sweat. I did tell him you were well.

Thomas Sinks, Ph.D.
Director, Office of the Science Advisor
Environmental Protection Agency
1200 Pennsylvania Ave NW
Room 41251 RRB, MC 8105 R
Washington DC, 20460
office: (202) 564-6811 mobile: (404) 226-6288
email: sinks.tom@epa.gov

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Tue, 6 Sep 2016 10:13:25 -0400
To: 'Bandemehr, Angela'
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Invitation to AG Chair/Secretariat call

Angela, we can discuss this further at 2pm, but if OK it would be great if Helen Rogers can join on this call as well; if so, can you also please send her an invite.

Similarly for the WB call tomorrow at 2-3.

Helen and I can probably do both of those calls tomorrow from her office in Chamblee.

Thanks

CDC Contact Info
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hxf1@cdc.gov

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From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Wednesday, August 10, 2016 7:57 AM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Brown, Mary Jean (CDC/ONDIEH/NCEH) <mjb5@cdc.gov>
Subject: Invitation to AG Chair/Secretariat call

Henry:
I just sent you an invitation to our periodic call with WHO/UNEP. EPA/CDC are the Chair of the Lead Paint Alliance Advisory Group. And CDC regularly joins us on those calls. We talk about strategic matters and resolve issues. Mary Jean can fill you in on the details. I'm also happy to tell you more about it. The call happens roughly monthly, depending on schedules and need for discussion. So it would be great if you can also participate on those calls.

Regards,
Angela

Angela Bandemehr
International Program Manager

Office of Global Affairs and Policy
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Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Sat, 24 Mar 2018 16:28:37 -0400
To: Bandemehr, Angela
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Lead exposures

Angela, perhaps I missed it, but I don't see any data on lead levels in paint in the article from Pure Earth; how are they making their judgments? Is this just an outdated assumption based on what might have been true years ago? Is there more to this than what I'm seeing?

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From: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Sent: Wednesday, March 21, 2018 1:33 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: FW: Lead exposures

Hi Henry:
Here is the Pure Earth paper, which is being sent around to UNEP and to the World Bank and we are working to provide an update to explain the lead paint piece.

Would appreciate any information you can find out from Phil about the methodology used to reach the conclusions in this paper and why they are saying that lead paint has been solved.

Appreciate this being close hold.

Thanks!
Angela

From: Smith, Walker
Sent: Friday, March 16, 2018 5:14 PM
To: Jacob Duer <jacob.duer@un.org>; Ernesto Sanchez-Triana <esancheztriana@worldbank.org>
Cc: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: FW: Lead exposures

Dear Jacob and Ernesto,

I wanted to let you know that we are developing a paper that addresses the question of why lead paint is a major pathway for lead exposure in the developing world. We think this is important because some of the assertions in this report are incorrect and "paint" an inaccurate picture about the problem of lead paint exposure. This paper will be important messaging for the Lead Paint Alliance, and won't be responding to the Pure Earth paper but will explain the importance of addressing lead paint. In the meantime, please let Angela or I know if you have any questions.

Best regards,

Walker

Walker B. Smith
Director
Office of Global Affairs and Policy
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From: Richard Fuller [mailto:fuller@pureearth.org]
Sent: Tuesday, March 13, 2018 6:15 PM
To: Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Jacob Duer <Jacob.DUER@unep.org>; Smith, Walker <Smith.Walker@epa.gov>
Cc: Rachael Vinyard <rachael@pureearth.org>; Bret Ericson <bret@pureearth.org>
Subject: Fwd: Lead exposures

All

Forgive me if you already received this- I am working off an iPad in Melbourne.

Jack and his local counterparts made professional estimates of likely exposures to lead from various sources, in five countries where we have extensive experience.

It is the starting point for a proper source apportionment study, and extremely interesting in its own right. And when taken together with the new Lanphear study on mortality, frankly quite frightening.

Best

RF

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Tue, 29 Nov 2016 20:32:46 -0500
To: 'Cantor, Doreen';Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Lead reference level

Doreen, I am forwarding your request to Helen Schurz Rogers who is Acting Lead for the lead poisoning prevention team in place of Mary Jean; Helen would be in a much better position than me to reply to your inquiry. I hope this is helpful. Best, Henry

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Cantor, Doreen [mailto:Cantor.Doreen@epa.gov]
Sent: Tuesday, November 29, 2016 4:51 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: Lead reference level

Hi, Henry. Could you give me an estimate as to if/when the CDC lead reference level will be updated? I had worked on this with Mary Jean a bit before she left, but have not heard anything since. Thank you very much. Please feel free to call if that's easier.

Doreen Cantor Paster
Associate Chief, Lead, Heavy Metals, & Inorganics Branch
US Environmental Protection Agency (7404T)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Phone: 202-566-0486

LET'S MAKE ALL KIDS LEAD-FREE KIDS!
Need information on lead? Go to epa.gov/lead
See a lead violation? Report it at epa.gov/tips

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Thu, 19 Jan 2017 17:04:38 -0500
To: Mccann, Ellie;Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Bandemehr, Angela;Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Oops, sorry

OK. Thanks. We understand.

I will be out of the country (Israel, Italy and Geneva) from January 24 to February 10. If need be, speak with Helen and if possible keep me in the loop by e-mail. Hope you all manage the next few days OK; in Atlanta at the moment it's about 70 degrees, peaceful, and very quiet (but we're all anxious as to how the world will unfold going forward). Talk to you soon. Best, Henry

---

From: Mccann, Ellie [mailto:Mccann.Ellie@epa.gov]
Sent: Thursday, January 19, 2017 4:35 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>
Cc: Bandemehr, Angela <Bandemehr.Angela@epa.gov>
Subject: Oops, sorry

Dear Helen and Henry,

Oops, our apologies! We are so sorry we were not able to follow through with our scheduled call at 3 pm to catch up with you on CDC-related topics! EPA folks are all working from home today because of the inauguration logistics chaos in downtown DC, and Angela got tied up in a conference call that ran past 3 pm. Now Angela cannot get email access, and asked me to send you our apologies. We will reschedule (again!) in a couple of weeks, when Angela returns from a week-long work trip to Mexico next week.

Best wishes to you both.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Ellie McCann
Senior Policy Advisor
Office of Pollution Prevention & Toxics
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460
202-566-0520
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Tue, 6 Sep 2016 09:55:17 -0400
To: 'Bandemehr, Angela'
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: PAHO

OK. I will call you and try to link in Helen.

Helen, what is best number to reach you at 2pm? If you're in Chamblee, I'll just come to your office.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Tuesday, September 06, 2016 7:56 AM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: Re: PAHO

2 pm works. Thanks!

Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
Office of International and Tribal Affairs
US Environmental Protection Agency
1200 Pennsylvania Ave, NW, MC2660R
Washington, DC 20460

Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Sent: Monday, September 5, 2016 10:07:39 PM
To: Bandemehr, Angela

Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: PAHO

Angela, I spoke with Helen Rogers at length on Friday afternoon; she was named by Patrick Breysse and Donna Knutson as the NCEH/ATSDR replacement for Mary Jean Brown in work with the Lead Paint Alliance.

Would you have time tomorrow for a short introductory call with me, you, and Helen? Best times for me are at 2pm, 4pm, or between 10am and noon. Let me know and I will alert Helen. Also, can you arrange a call in number as Helen and I may be in separate places for the call. I did alert her about the Wed calls, but you can fill in more detail when we speak.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, September 02, 2016 12:07 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: PAHO

Henry:
Our meeting with PAHO went well. They are interested in doing an event during the week of action. It may end up being more of a webinar for folks in LAC but it might also include a face to face component. Not clear yet.

Have a great weekend.

Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Mon, 5 Sep 2016 22:07:39 -0400
To: 'Bandemehr, Angela'
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: PAHO

Angela, I spoke with Helen Rogers at length on Friday afternoon; she was named by Patrick Breysse and Donna Knutson as the NCEH/ATSDR replacement for Mary Jean Brown in work with the Lead Paint Alliance.

Would you have time tomorrow for a short introductory call with me, you, and Helen? Best times for me are at 2pm, 4pm, or between 10am and noon. Let me know and I will alert Helen. Also, can you arrange a call in number as Helen and I may be in separate places for the call. I did alert her about the Wed calls, but you can fill in more detail when we speak.

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Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, September 02, 2016 12:07 PM
To: Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: PAHO

Henry:
Our meeting with PAHO went well. They are interested in doing an event during the week of action. It may end up being more of a webinar for folks in LAC but it might also include a face to face component. Not clear yet.

Have a great weekend.

Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency

Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Tue, 22 May 2018 11:33:06 -0400
To: Marzouk, Evonne
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Possible opportunity for Henry Falk to speak to paint industry in Israel

I had a good talk with Tamar Berman on Friday, and EHF was supportive in offering to work on my schedule. They said they would get back to me by late Monday, but have not yet heard if they were able to work this out. I'll let you know when I hear from them.

From: "Marzouk, Evonne" <Marzouk.Evonne@epa.gov>
Sent: Tuesday, May 22, 2018 10:53 AM
To: "Falk, Henry (CDC/ONDIEH/OD) (CTR)" <hxf1@cdc.gov>
Subject: RE: Possible opportunity for Henry Falk to speak to paint industry in Israel

Hi Henry,
Just wondering if there are any updates you'd like to share on this. Thanks!

Evonne

From: Falk, Henry (CDC/ONDIEH/OD) (CTR) [mailto:hxf1@cdc.gov]
Sent: Thursday, May 17, 2018 6:21 PM
To: Marzouk, Evonne <Marzouk.Evonne@epa.gov>; tamar.berman@MOH.GOV.IL
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mercurio, Cristina <Mercurio.Cristina@epa.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Subject: RE: Possible opportunity for Henry Falk to speak to paint industry in Israel

Evonne, Thanks. One minor correction is that my trip is being funded by the EHF and the PHFI, not the Indian and Israeli governments, so my first priority is to them and their needs. If there is time, then we could consider the lead paint talks, but I need to check.

Tamar—I will be at home tomorrow morning till 8am. You could call me at 7am if that works for you, or even earlier if preferable. Home phone is (b)(6) After 8am, I have various appointments, but you could try to reach me on my cell at (b)(6) and we will see if possible to talk, or I will try to be available at a specific time if you alert me in advance. I hope all is well, and I would look forward to seeing you in Israel.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523

hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Sent: Thursday, May 17, 2018 6:09 PM
To: tamar.berman@MOH.GOV.IL; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mercurio, Cristina <Mercurio.Cristina@epa.gov>
Subject: Possible opportunity for Henry Falk to speak to paint industry in Israel
Importance: High

Hello Tamar and Henry,
This afternoon EPA met with Chuck Ashley of the U.S. Embassy in Israel, who has been involved in our conversations about lead paint in Israel. We provided Chuck with a debrief of yesterday's call with Tamar, including the possibility that Henry might be invited to speak with the paint industry while he is there. Chuck also expressed interest in bringing Henry in as a speaker on this topic (on behalf of the U.S. Embassy) – to engage with government representatives (including the Ministry of Economy and Border Control) and/or industry in Israel on the issue of lead in paint. If this seems like a good idea, Chuck would need a rough proposal to get to his Embassy (for the possible honoraria and event planning) by Tuesday.

I have just spoken with Henry by phone, and he is interested in exploring this possibility but also expressed that his primary commitment on this short trip is to the EHF and to the Israeli and Indian governments which are paying for his trip.

Tamar, if you are interested in having Henry speak to the industry while he is in Israel, he suggests that the best thing would be for you together to speak to the head of EHF regarding what may be possible in the context of his current trip plans. If you would like to coordinate that, Henry will be home tomorrow morning at 7 am his time (2 pm your time) and would be available to speak to you at that time. Because of the holiday on Sunday/Monday, this may be his only opportunity to chat with you before Tuesday. Henry will respond to this message with his contact details.

Best wishes
Evonne

P.S. I will be out of the office until Tuesday but look forward to hearing the results of this conversation!

Evonne Marzouk
Communications Specialist
Office of Global Affairs and Policy
Office of International and Tribal Affairs
U.S. Environmental Protection Agency
202-564-7529
Marzouk.evonne@epa.gov

www.epa.gov/international
Follow us on Twitter! @EPAAllNations

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Thu, 17 May 2018 18:20:45 -0400
To: Marzouk, Evonne;tamar.berman@MOH.GOV.IL
Cc: Mccann, Ellie;Bandemehr, Angela;Mercurio, Cristina;Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Possible opportunity for Henry Falk to speak to paint industry in Israel

Evonne, Thanks. One minor correction is that my trip is being funded by the EHF and the PHFI, not the Indian and Israeli governments, so my first priority is to them and their needs. If there is time, then we could consider the lead paint talks, but I need to check.

Tamar—I will be at home tomorrow morning till 8am. You could call me at 7am if that works for you, or even earlier if preferable. Home phone is (b)(6) After 8am, I have various appointments, but you could try to reach me on my cell at (b)(6) and we will see if possible to talk, or I will try to be available at a specific time if you alert me in advance. I hope all is well, and I would look forward to seeing you in Israel.

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Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone (b)(6)
(b)(6)

From: Marzouk, Evonne <Marzouk.Evonne@epa.gov>
Sent: Thursday, May 17, 2018 6:09 PM
To: tamar.berman@MOH.GOV.IL; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>; Bandemehr, Angela <Bandemehr.Angela@epa.gov>; Mercurio, Cristina <Mercurio.Cristina@epa.gov>
Subject: Possible opportunity for Henry Falk to speak to paint industry in Israel
Importance: High

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Best wishes
Evonne

P.S. I will be out of the office until Tuesday but look forward to hearing the results of this conversation!

Evonne Marzouk
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From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Mon, 14 Nov 2016 09:42:33 -0500
To: 'Bandemehr, Angela';Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mance, Cassandra;Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: Suggestions for World Bank contractors

First, is Mary Jean still on the list?

I do know 3 of the 4 people on the list; I don't know Jennifer Gould, and I'm probably unlikely to know too many economists.

Leo Trasande used to be on our NCEH Board of Scientific Counselors. I knew him when he worked with Phil Landrigan at Mt Sinai; before that I think he did a stint as a visiting scientist type on children's environmental health issues with Hillary Clinton in DC when she was Senator from NY, so he's very familiar with policy type analyses. He's now at NYU and as you know has done some published cost-benefit type analyses on lead poisoning and other topics. He also worked on the since abandoned National Children's study. I think he is very capable of doing what is needed here.

Dave Jacobs has a long history working on housing and lead paint issues, including at HUD for many years. He's also very solid and experienced with these issues, and with doing reports, statements, etc. I also think he is very capable of doing what is needed here. I think Helen and I would know both Leo and David well, and could work very well with them.

I know Mark Miller, but not as well. He is a very sound pediatrician who was in practice for many years, and I interacted with him on the American Academy of Pediatrics Committee on Environmental Hazards; they have produced multiple committee statements on lead poisoning guidance for the Academy, so he is very familiar with lead issues, but perhaps mostly with the clinical and public health aspects. I think he is less academic than Leo and David, and so I am not as certain of his ability to pull off this type of report by himself. He would certainly be a good resource on lead issues, but I would probably rank Leo and David higher for this purpose.

Helen probably has separate experiences with this group than mine, so I would look forward to her thoughts; she also may have more recent experience with them than mine, for example with their contributions to CDC lead poisoning statements and reports, so important to hear from her.

Decades ago, Joel Schwartz who was then at EPA (now at Harvard School of Public Health) did a major cost benefit analysis for us at CDC on lead paint issues, and as you may know he did the EPA analysis for lead in gasoline. He is a super bright guy, whose work has now moved on to air pollution. I'm very doubtful that he would have the time or interest to do this now, but he understands the issue better than almost anybody and might be a good source of recommendations for other people who could do this.

Scott Grosse at CDC (now in Birth Defects I believe) is also very familiar with cost-benefit issues in this area, and might also be a source for additional recommendations; Helen could follow up with him if needed.

I hope this is helpful. I just returned from India and see a conference call on the calendar for Wednesday morning; can you fill me in briefly on what that one is about? Many thanks, Henry

CDC Contact Info
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Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
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From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Monday, November 14, 2016 9:07 AM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Mance, Cassandra <mance.cassandra@epa.gov>
Subject: Suggestions for World Bank contractors

Good morning!
I'm just now getting to this task the WB asked us to look into - recommending any other researchers who could work on their report. If you recall, they were looking both for an economist and a generalist.

I went back to some email exchanges I had last year with Mary Jean and others in the EPA Children's Health office and came up with this list. Do you know any of them? Would you recommend them? Any others?

Mark Miller - co-director: Western States Pediatric Environmental Health Unit (or one of his staff?)(http://wspehsu.ucsf.edu/about-us/our-team/ucsf-pehsu-staff/mark-miller-md-mph/)
Leo Trasande - NYU
David Jacobs - National Center for Healthy Housing
Jennifer Gould - Economic Policy Institute, Washington, DC, USA -
http://ehp.niehs.nih.gov/0800408/

Thanks!
Angela

Childhood Lead Poisoning: Conservative Estimates of the ...

ehp.niehs.nih.gov

Lead poisoning is a serious hazard for children and causes significant biological and neurologic damage linked to cognitive and behavioral impairment (Bellinger 2008a

Mark Miller, MD, MPH - Western States PEHSU

wspehsu.ucsf.edu

Dr. Mark Miller is an Assistant Clinical Professor in the Departments of Pediatrics and Internal Medicine (Division of Occupational and Environmental Health) at the University of California San Francisco (UCSF). He is also the Co-Director of the UCSF Pediatric Environmental Health Specialty Unit (PEHSU) and the director of the Children's Environmental Health Program at California Environmental ...

Thanks,
Angela

Angela Bandemehr, MSEE
International Program Manager
Global Affairs and Policy
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Washington, DC 20460

Office: +202-564-1427
Email: bandemehr.angela@epa.gov
Website: http://www.epa.gov/international

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Wed, 21 Dec 2016 15:19:21 -0500
To: 'Bandemehr, Angela';Schurz Rogers, Helen (CDC/ONDIEH/NCEH)
Cc: Mccann, Ellie;Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: WHA roadmap and draft EPA comments

(b) (5)

I haven't had a chance to discuss this with Helen yet, but as I leave for vacation on Friday, I thought I would pass this on. It would be important from the CDC perspective to get Helen's thoughts on this.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
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Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Tuesday, December 20, 2016 10:35 AM
To: Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Mccann, Ellie <Mccann.Ellie@epa.gov>
Subject: WHA roadmap and draft EPA comments

Hi Helen and Henry!
Please find attached the WHA roadmap for chemicals and EPA's proposed comments. I also included some of the background documents as well. We will be submitting our comments to HHS, likely just after the holidays, so if you have any further thoughts, let us know.

Looking forward to connecting in the new year! And I wish you a peaceful and joyful holiday season!!
Angela

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Sat, 3 Jun 2017 23:26:38 -0400
To: Bandemehr, Angela
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: World Bank Lead Report Team Meeting

Angela, just trying to catch up after being out this week; do we have the newest draft from MJB? I presume we have the EPA comments referenced below and Helen and I will review the package before the next call. Thanks.

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Friday, June 02, 2017 2:09 PM
To: Shafick Hoossein <shoossein@worldbank.org>; Mccann, Ellie <Mccann.Ellie@epa.gov>; Wolfson, Steve <Wolfson.Steve@epa.gov>; Ernesto Sanchez-Triana <esancheztriana@worldbank.org>; Maher, Lauren <Maher.Lauren@epa.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>; mary jean brown <mjb686@outlook.com>; Mance, Cassandra <mance.cassandra@epa.gov>; Yewande Aramide Awe <yawe@worldbank.org>
Subject: World Bank Lead Report Team Meeting

(b) (5)

(b) (5)

[redacted]

Angela Bandemehr
International Program Manager
Office of Global Affairs and Policy
U.S. Environmental Protection Agency
Ph: 202.564.1427

From: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Sent: Thu, 27 Oct 2016 10:18:35 -0400
To: 'Bandemehr, Angela'
Cc: Schurz Rogers, Helen (CDC/ONDIEH/NCEH);Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: RE: World Bank Report

Angela, I think the changes to the outline look good. Sorry if I didn't reply sooner.

I think you have the right types of information in Chapter 2, but I haven't tried to edit yet given your comments below. Helen and I can work on that whenever you think appropriate. Thanks

CDC Contact Info
Henry Falk, MD, MPH
Total Solutions,, Inc.
Consultant to Office of Noncommunicable Disease, Injury and Environmental Health (ONDIEH)/CDC.
Room 10003, Building 106, Chamblee Campus.
Office phone: 770-488-0608
Cell phone: 404-216-0523
hxf1@cdc.gov

Personal Contact Info (non-CDC)
Cell phone: (b)(6)
(b)(6)

From: Bandemehr, Angela [mailto:Bandemehr.Angela@epa.gov]
Sent: Monday, October 17, 2016 12:27 PM
To: Mccann, Ellie <Mccann.Ellie@epa.gov>; Schurz Rogers, Helen (CDC/ONDIEH/NCEH) <hhs0@cdc.gov>; Falk, Henry (CDC/ONDIEH/OD) (CTR) <hxf1@cdc.gov>
Cc: Wolfson, Steve <Wolfson.Steve@epa.gov>; Maher, Lauren <Maher.Lauren@epa.gov>; Samtani, Riddhi <samtani.riddhi@epa.gov>; Sims, JaniceHQ <Sims.JaniceHQ@epa.gov>
Subject: World Bank Report

I'm working on the chapters of the World Bank report and wanted to share what I have so far. I'd really like your thoughts on where I'm heading with this. I have taken what the Bank started with and moved content around. I have not added much content yet, though I made a start. I also revised the outline, based on how the report seems to be shaping up as I edit it.

All: see the revised outline - especially the report objectives

Helen/Henry: Please see chapter 2. Any glaring omissions?
Ellie: Please see chapter 3. Still need to refine the discussion on lead paint laws. Any references I'm missing?

Plan going forward:

- share revised outline with the World Bank for this week's call.
- agree on report objectives
- finish revisions on Chapters 1-3 and send to the Bank
- start writing chapter 7 (possible government policies)
- compile information on industry best practices (chapter 6), IPEN paint studies (chapter 3), case studies (chapter 4) and other chapters.
- once WB contractor hired, work closely to review drafts

I'd like to share the revised outline with the Bank for the Thursday call. I think I'll hold off on the chapters, until I have had a chance to review more closely. Please let me know what you think.

Angela

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Sent: Fri, 12 Aug 2016 14:37:56 -0400
To: smith.walker@epa.gov;bandemehr.angela@epa.gov
Cc: Falk, Henry (CDC/ONDIEH/OD) (CTR)
Subject: Thanks

I think that was a good call; you presented well. Jessica will be very circumspect until she has a clearer indication of how Bloomberg leadership will feel about this, and she tries very hard to not to raise expectations inappropriately, so we'll have to wait and see what if anything transpires. But the discussion was good.

Also, could you please send me copies of whatever documents/links you forward to Jessica; I would appreciate it and it will make it easier for me to respond to any queries that will come my way. Thanks again.

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