Message

From: Gross-Davis, CarolAnn [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C2239389429848BFB670A8B2D97DF908-CDAVISGR]
Sent: 10/6/2020 1:36:41 PM
To: Chakrabarty, Renu M [Renu.M.Chakrabarty@wv.gov]
Subject: RE: [External] RE: EtO - health reviews discussion request

Renu,
Can you send the invite to Alice also? Thanks
Carol Ann

Carol Ann Gross-Davis, Ph.D.
Environmental Scientist
Air Quality Analysis Branch (3AD40)
USEPA, Region 3
Phone: (215) 814-5738
Fax: (215)814-2124
Email: gross-davis.carolann@epa.gov

From: Chakrabarty, Renu M [mailto:Renu.M.Chakrabarty@wv.gov]
Sent: Tuesday, October 06, 2020 9:31 AM
To: Werner, Lora S. (ATSDR/DCHI/EB) <lkw9@cdc.gov>; Gross-Davis, CarolAnn <Gross-Davis.CarolAnn@epa.gov>
Cc: Orr, Lee E <Lee.E.Orr@wv.gov>; michael.egnor <michael.egnor@wv.gov>
Subject: Re: [External] RE: EtO - health reviews discussion request

Thank you, let's meet Thursday at 3pm . Looking forward to talking with you all then.

From: Werner, Lora S. (ATSDR/OAD/OCHHA) <lkw9@cdc.gov>
Sent: Monday, October 5, 2020 10:06 AM
To: Gross-Davis, CarolAnn <Gross-Davis.CarolAnn@epa.gov>; Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Cc: Orr, Lee E <Lee.E.Orr@wv.gov>; Egnor, Michael <Michael.Egnor@wv.gov>
Subject: [External] RE: EtO - health reviews discussion request

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Hi guys
Glad to participate as well if helpful.

I should be able to make the times EPA is available below. Best, Lora

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From: Gross-Davis, CarolAnn <Gross-Davis.CarolAnn@epa.gov>
Sent: Monday, October 5, 2020 9:19 AM
To: renu.m.chakrabarty@wv.gov
Cc: Orr, Lee E <Lee.E.Orr@wv.gov>; michael.egnor <michael.egnor@wv.gov>; Werner, Lora S. (ATSDR/OAD/OCHHA) <lkw9@cdc.gov>
Subject: RE: EtO - health reviews discussion request

Renu,
Hi, Alice and I are available
Wed 10-11 and 1 to 2pm and Thursday at 3pm.
Thanks
Carol Ann

Carol Ann Gross-Davis, Ph.D.
Environmental Scientist
Air Quality Analysis Branch (3AD40)
USEPA, Region 3
Phone: (215) 814-5738
Fax: (215)814-2124
Email: gross-davis.carolann@epa.gov

From: Chakrabarty, Renu M [mailto:Renu.M.Chakrabarty@wv.gov]
Sent: Friday, October 02, 2020 9:44 AM
To: Gross-Davis, CarolAnn <Gross-Davis.CarolAnn@epa.gov>
Cc: Orr, Lee E <Lee.E.Orr@wv.gov>; michael.egnor <michael.egnor@wv.gov>; Werner, Lora S. (ATSDR/DCHI/EB) <lkw9@cdc.gov>
Subject: RE: EtO - health reviews discussion request

Carol Ann,

A few weeks ago, Dr. Carol Ann Gross-Davis provided some background information regarding the issues raised in the May 16, 2019 article on NIOSH data that calls EPA's updated EtO assessment into question. The article is, "*Reevaluation of Historical Exposures to Ethylene Oxide Among U.S. Sterilization Workers in the National Institute of Occupational Safety and Health (NIOSH) Study Cohort*" (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6572526/pdf/ijerph-16-01738.pdf).

It seems that article was funded by the EtO sterilizer industrial organization, and is talking about how NIOSH calculated (modeled) EtO exposure in workers from 1938 to 1978. There was a gap in exposure data from 1938-1978 that EPA estimated a certain way, but that the article offers an alternative way to calculate (that estimates lower exposures).

Dr. Gross-Davis had offered to speak further on this with our BPH colleagues and us and well as on any other EtO issues. Our colleague at BPH, has requested some further discussion on this.

Also, ATSDR release a Draft Tox Profile on EtO, and this may also have some differences from EPA's analysis.

Would you be available during any of the following dates/times? If not, please let us know what might work with your schedule instead.

Oct. 6th, Tuesday, 2:30 pm or after
Oct. 7th, Wednesday, 10 am – 12 noon; 1 – 2 pm
Oct. 8th, Thursday, 2:30 pm or after

Thanks,
Renu

From: Orr, Lee E <Lee.E.Orr@wv.gov>
Sent: Wednesday, September 30, 2020 3:45 PM
To: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Subject: Re: EtO

That will work. Either day

Lee Orr, Readiness Coordinator
Office of Environmental Health Services
Bureau for Public Health
350 Capitol Street, Room 313
Charleston WV 25301-3713
304-356-4290 W
304-550-5607 M

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Wednesday, September 30, 2020 3:43:28 PM
To: Orr, Lee E <Lee.E.Orr@wv.gov>
Subject: RE: EtO

Thanks, Lee. Would 2:30 pm or after work for possible Tu or Th times?

From: Orr, Lee E <Lee.E.Orr@wv.gov>
Sent: Wednesday, September 30, 2020 12:47 PM
To: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Subject: RE: EtO

It looks like I am free Monday and Wednesday for sure. Friday is out and might be able to Tuesday and Thursday later in the afternoon

Lee

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Wednesday, September 30, 2020 12:42 PM
To: Orr, Lee E <Lee.E.Orr@wv.gov>
Subject: RE: EtO

Hi Lee,

Let's look in to next week for scheduling. Some things are scheduled on our end that can't easily be changed.

Thanks,
Renu

From: Orr, Lee E <Lee.E.Orr@wv.gov>
Sent: Tuesday, September 29, 2020 4:38 PM
To: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Subject: Re: EtO

It will probably be best to just schedule something that fits my schedule then see who else can join. I am free most times I am not at the Center for Threat Prep. My schedule there is kind of all over the map. I will be there tomorrow but will be free Thursday and Friday. I'll need to see what the schedule is for next week

Lee Orr, Readiness Coordinator
Office of Environmental Health Services
Bureau for Public Health
350 Capitol Street, Room 313
Charleston WV 25301-3713
304-356-4290 W
304-550-5607 M

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Tuesday, September 29, 2020 4:03:56 PM
To: Orr, Lee E <Lee.E.Orr@wv.gov>
Subject: RE: EtO

Hi Lee,

I can do that. What dates are open for you and your team?

I can check here at DEP and then reach out to Carol Ann at EPA Region 3.

Would you want Lora Werner or one of her folks from ATSDR Region 3 on the call too?

Thanks,
Renu

From: Orr, Lee E <Lee.E.Orr@wv.gov>
Sent: Tuesday, September 29, 2020 11:54 AM
To: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Subject: RE: EtO

Renu,
Would you still like to set up this call?

Lee

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Monday, September 14, 2020 9:49 AM
To: Orr, Lee E <Lee.E.Orr@wv.gov>
Cc: Egnor, Michael <Michael.Egnor@wv.gov>; Gross-Davis, CarolAnn <Gross-Davis.CarolAnn@epa.gov>
Subject: RE: EtO

Hi Lee,

We spoke with Dr. Carol Ann Gross-Davis of EPA Region 3 regarding the issues raised in the May 16, 2019 article on NIOSH data that calls EPA's updated EtO assessment into question that you had shared. The article is, "*Reevaluation of Historical Exposures to Ethylene Oxide Among U.S. Sterilization Workers in the National Institute of Occupational Safety and Health (NIOSH) Study Cohort.*"

It seems that article was funded by the EtO sterilizer industrial organization, and is talking about how NIOSH calculated (modeled) EtO exposure in workers from 1938 to 1978. There was a gap in exposure data from 1938-1978 that EPA estimated a certain way, but that the article offers an alternative way to calculate (that estimates lower exposures).

Dr. Gross-Davis indicated she would be very open to speaking with you and/or other DHHR folks on this issue, or other EtO issues. Her contact information is below. She and Erica Thomasson have spoken on EtO issues previously also in case you want to touch base with her. I can set up
a call if you would like?

Carol Ann Gross-Davis, Ph.D.
Environmental Scientist
Air Quality Analysis Branch (3AD40)
USEPA, Region 3
Phone: (215) 814-5738
Fax: (215)814-2124
Email: gross-davis.carolann@epa.gov

Thanks,
Renu

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Friday, September 11, 2020 3:59 PM
To: Orr, Lee E <Lee.E.Orr@wv.gov>
Subject: EtO

Hi Lee,

It was good to talk with you this afternoon.

I am checking in to the questions raised by the article you sent over – thanks for the reminder.

Once you have had a chance to check with your folks next week, let's get our agencies together, as we discussed, to see where we all are and what our next steps might be regarding EtO.

We can provide updates on our emissions estimation reviews and air dispersion modeling, and we can discuss how the more in-depth cancer registry review is coming along. We can also discuss if/how we may want to reach out to ATSDR Region 3 for a Health Consultation, or consultation/support on DHHR's work.

Have a good weekend.

Thanks,
Renu

From: Orr, Lee E <Lee.E.Orr@wv.gov>
Sent: Wednesday, June 17, 2020 9:41 AM
To: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Subject: RE: BPH-DEP Nov 25th call & Dec 12th Ethylene Oxide meeting - notes and action items, updates, references

Renu,
Have you seen this 2019 NIOSH document? I get a little lost on references to which model, but it appears to call into question EPA's EtO exposure risks.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6572526/pdf/ijerph-16-01738.pdf

lee

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Tuesday, June 16, 2020 9:44 AM
To: Orr, Lee E <Lee.E.Orr@wv.gov>
Subject: FW: BPH-DEP Nov 25th call & Dec 12th Ethylene Oxide meeting - notes and action items, updates, references

Hi Lee,

I just realized you were not on this email chain. Sorry about that.

Renu

From: Chakrabarty, Renu M
Sent: Monday, June 15, 2020 2:32 PM
To: Fisher, Andrea L <Andrea.L.Fisher@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>; Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; McCoy, Markie P <Markie.P.McCoy@wv.gov>; Keville, Elizabeth A <Elizabeth.A.Keville@wv.gov>; Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>
Cc: Mandirola, Scott G <Scott.G.Mandirola@wv.gov>; Crowder, Laura M <Laura.M.Crowder@wv.gov>; McClung, Jon D <Jon.D.McClung@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Egnor, Michael <Michael.Egnor@wv.gov>; Hammonds, Stephanie E <Stephanie.E.Hammonds@wv.gov>; Maguire, Edward F <Edward.F.Maguire@wv.gov>; Compston, Rex E <Rex.E.Compston@wv.gov>; Fletcher, Terry A <Terry.A.Fletcher@wv.gov>
Subject: RE: BPH-DEP Nov 25th call & Dec 12th Ethylene Oxide meeting - notes and action items, updates, references

Good Afternoon,

I hope this note finds everyone well.

I know it has been a while since we've touched base regarding EtO, and that COVID-19 exposure issues have taken priority.

An update from DEP-DAQ is that the CY2017 EtO emissions estimates (both point source and fugitive) evaluation for the NATA hotspot facilities has been completed. The table below summarizes the original, and updated, more accurate EtO emissions estimates. There is an **overall reduction of 2.12 tons** based on using more accurate emissions estimates (particularly more refined stream composition estimates for allocating fugitive emissions). The table below summarizes this information.

DEP-DAQ is still working on more refined air dispersion modeling, including using the updated air emissions data.

The notes below from our December 12th meeting contains a list of items DHHR-BPH was working on, and I wondered who to speak with to obtain an update?

Thanks,
Renu

Facility	2017 SLEIS EO Emission (Ton)			2017 EO Emission (Ton) after Review and Correction		
	Total	PS EO	Fugitive	Total	PS EO	Fugitive
UC/Dow/DuPont Institute	2.3738	0.6103	1.7635	0.8699	0.5620	0.3079
UC/Dow/DuPont S. Charleston	0.7201	0.0432	0.6769	0.1008	0.0432	0.0576
Covestro, S. Charleston	0.0824	0.0400	0.0424	0.0824	0.0400	0.0424
	3.1763 tons			1.0531 tons		

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Wednesday, December 18, 2019 2:50 PM
To: Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Fisher, Andrea L <Andrea.L.Fisher@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>; Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; McCoy, Markie P <Markie.P.McCoy@wv.gov>
Cc: Mandirola, Scott G <Scott.G.Mandirola@wv.gov>; Crowder, Laura M <Laura.M.Crowder@wv.gov>; McClung, Jon D <Jon.D.McClung@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Egnor, Michael <Michael.Egnor@wv.gov>; Hammonds, Stephanie E <Stephanie.E.Hammonds@wv.gov>; Fletcher, Terry A <Terry.A.Fletcher@wv.gov>; Maguire, Edward F <Edward.F.Maguire@wv.gov>
Subject: BPH-DEP Nov 25th call & Dec 12th Ethylene Oxide meeting - notes and action items, updates, references

Good afternoon,

This is a follow-up to our Nov. 25th conference call and Dec. 12th in-person meeting to help keep us on-track over the holidays. A copy of the sign-in sheet from our Dec. 12th meeting is attached.

Thank you for explaining some of the aspects of the Cancer Registry (not just WV issues, but national issues).

- For example, the data only counts residents of Kanawha County during the years studied. If a person moved from somewhere else and got cancer that was diagnosed in Kanahwa County, it would be shown as cancer in Kanawha County (regardless of where the exposure occurred). If someone lived years in Kanawha County and moved outside the county, it would not count in the Kanawha County data if they did get cancer.

- Also, the more geographically refined the analysis, the more potential uncertainty if there are non-specific addresses (PO boxes, general delivery, etc.).

Late last week, we recently became aware of a class action lawsuit regarding Ethylene Oxide (EtO), *Mark Letart, et al v Union Carbide Corporation* (Morgan & Morgan law firm): https://www.courthousenews.com/wp-content/uploads/2019/12/Union-Carbide.pdf. There is a Facebook video post on this lawsuit:

> "If you're living within a five-mile radius of these different factories, you have a very high risk of contracting one of these cancers."
> Attorney Mike Morgan explains the potential risks of prolonged exposure to ethylene oxide
> https://www.facebook.com/MMForthePeople/videos/vb.313942829424/833439343742129/?type=2&theater

My notes on our respective action items are below (please feel free to make any additions and/or corrections as needed).

DEP, DAQ

- Dec. 13th press release *completed, https://dep.wv.gov/news/Pages/WVDEP-working-with-EPA-to-address-issues-involving-ethylene-oxide.aspx*
- Dec 13th FOIA response *completed*
- Dec 19th, 12:30 pm site visit at Union Carbide Corp/Dow's South Charleston facility to become familiar with the EtO processes
    - Steve Blankenship and Lee Orr to accompany DAQ
- Continue to obtain updated data from the facilities, evaluate and review the data, and perform site-specific air dispersion modeling of EtO processes at the Institute and South Charleston facilities; coordinate with EPA Region 3 for resources
    - Facility responses to DEP's formal data requests are due no later than Jan. 15, 2020; some data has already been provided to DEP

DHHR-BPH

- Contact NIOSH to request a specific worker study
    - A November 6, 2019 email from Dr. Carol Ann Gross-Davis of EPA Region 3, attached, contains a summary of EPA's update inhalation cancer unit risk factor, including the national NIOSH data reviewed, as well as a summary of the differences between EPA's updated factor and the proposed Texas Commission on Environmental Quality (TCEQ) factor.
- Obtain pediatric lymphoma cases within the lymphoma data
- Provide County, State and National data for comparison with the zip code and tract data (and block data once completed)
- Obtain a copy of mapping software from within BPH, and map out the known address for various types of cancers associated with EtO
    - 86% of the data can be geo-coded, the other 14% cannot (PO boxes, general delivery, etc); this introduces uncertainty and must be properly caveated
- Develop internal talking points on EtO and how the public can reduce cancer risk factors (lifestyle choices such as exercise, not smoking, healthy eating, etc.)
- Question: One graph showed over 220 in 100,000 for breast cancer in 1997 vs. approximately 20 in 2018. Early detection was mentioned, but doesn't it still count as cancer, regardless of when it's detected? The lymphoma and leukemia rates stayed roughly the same during the same period.
- Check if spontaneous fetal miscarriage data may be available for possible correlation with inhalation exposure areas.
- Contact ATSDR for possible resources

References/Resources

- EPA Oct 18, 2019 memo on sensitivity of EtO risk estimates to dose-response model selection, "IRIS EtO Assessment – Modeling Comparisons and Assessment of Uncertainty," https://www.epa.gov/sites/production/files/2019-11/documents/memo_sensitivity_of_ethylene_oxide_risk_estimates_to_dose-response_model_selection_c_.pdf
- EPA's Evaluation of the Inhalation Carcinogenicity of Ethylene Oxide, Dec. 2016, https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/1025tr.pdf
- Bloomberg Aug 2019 article, attached
- GA press release Oct 2019, attached
- WebMD article, June 2019, attached
- EPA's National Air Toxics Assessment (NATA): https://www.epa.gov/national-air-toxics-assessment
- EPA's EtO webpage: https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide
- EPA regional EtO webpage: https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/regional-information-ethylene-oxide

- ATSDR health consultation, Aug 21, 2018, Sterigenics International, Willowbrook, IL: https://www.atsdr.cdc.gov/HAC/pha/sterigenic/Sterigenics_International_Inc-508.pdf, https://www.epa.gov/il/outdoor-air-monitoring-willowbrook-community
- Colorado DPHE EtO study, https://www.colorado.gov/pacific/cdphe/ethylene-oxide
- Michigan, Viant Medical reports,https://www.michigan.gov/egle/0,9429,7-135-3310_70314_89277---,00.html

Thank you,
Renu

Renu M. Chakrabarty, PE
Assistant Director of Air Monitoring, Laboratory & Air Toxics
Division of Air Quality
West Virginia Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Tel: (304) 926-0499, ext. 1246
Fax: (304) 926-0499

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Friday, November 22, 2019 3:02 PM
To: Fisher, Andrea L <Andrea.L.Fisher@wv.gov>; Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; Crowder, Laura M <Laura.M.Crowder@wv.gov>; Mandirola, Scott G <Scott.G.Mandirola@wv.gov>
Subject: RE: DEP-BPH meeting possible dates/times - Nov 25th 2 pm call; Dec 12th 9 am meeting

Please note the date/time change for our **in-person meeting** to **Th, Dec. 12th at 9 am, at the DHHR Diamond Building**, 350 Capitol Street, CR 706, Charleston, WV 25301.

Please let me know if you will conference me in to the call, or if you want me to call you all (and if so, what numbers to use). My number is (304) 926-0499, ext. 1246.

Thank you,
Renu

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Friday, November 22, 2019 2:40 PM
To: Fisher, Andrea L <Andrea.L.Fisher@wv.gov>; Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; Crowder, Laura M <Laura.M.Crowder@wv.gov>; Mandirola, Scott G <Scott.G.Mandirola@wv.gov>
Subject: RE: DEP-BPH meeting possible dates/times - Nov 25th 2 pm call; Dec 22th 2 pm meeting

Thank you.

For a **conference call**, let's get together this coming **Monday, November 25th at 2 pm**.

For the **in-person** meeting, let's get together on **Wednesday, December 11th from 2 – 3:30 pm**. I can obtain a conference room at the DEP building in Kanawha City, if folks want to meet here, or we can come to your facilities, just let me know. Our Deputy Director Scott Mandirola plans to join us at the in-person meeting.

Thank you,
Renu

From: Fisher, Andrea L <Andrea.L.Fisher@wv.gov>
Sent: Tuesday, November 19, 2019 9:41 AM
To: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>; Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; Crowder, Laura M <Laura.M.Crowder@wv.gov>
Subject: RE: DEP-BPH meeting possible dates/times

In reviewing Dr. Slemp's calendar for a conference call and in-person meeting, she currently has the following availability per the times/dates mentioned below:

Conference Call
November 22 Not Available
November 25 Available anytime in the afternoon 1PM – 4PM
November 26 Available between 2PM-4PM

In-Person Meeting
December 4 Not Available
December 9 Not Available
December 11 Available 9AM-10AM and 2PM-3:30PM
December 12 Available anytime between 9AM – 1PM
December 13 Available 1PM-2PM

Thanks.

Andrea

From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Monday, November 18, 2019 5:07 PM
To: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; Fisher, Andrea L <Andrea.L.Fisher@wv.gov>; Crowder, Laura M <Laura.M.Crowder@wv.gov>
Subject: DEP-BPH meeting possible dates/times

Thank you!

I will be out of town for an air monitoring workshop Tu-Th of this week, and returning on Friday. Perhaps we could touch base via a conference call on Nov. 22nd? Or on the following Mon (11/25) or Tu (11/26)?

Let's also try to get an in-person meeting scheduled when my Director will be available. Here are some possible dates/times:

- Dec. 4th, 1 pm or after
- Dec 9th, 1 pm or after
- Dec. 11th, 9 – 4 pm
- Dec. 12th, 9-11 am
- Dec 13th 9 am – 4 pm

Thank you,
Renu

From: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>
Sent: Monday, November 18, 2019 2:07 PM
To: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>; Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; Fisher, Andrea L <Andrea.L.Fisher@wv.gov>
Subject: RE: DRAFT - ethylene oxide press release statement wrt to DEP and BPH/DHHR

Hi Renu,

From the Cancer Registry perspective, the language in your draft is fine.

Thanks!

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350 Capitol Street, Room 125
Charleston, WV 25301
Phone: (304) 356-4005
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From: Chakrabarty, Renu M
Sent: Monday, November 18, 2019 2:00 PM
To: Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
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Subject: DRAFT - ethylene oxide press release statement wrt to DEP and BPH/DHHR

While there is no final decision yet on whether there will be a press release regarding Ethylene Oxide, we are drafting such a document to have ready.

Does BPH/DHHR have any particular message you would want included (that is, a joint press release)?

And/or, can someone please review the language below for inclusion in the draft press release?

> The agency immediately reached out to the Bureau for Public Health at WVDHHR who did an initial assessment of the cancer registry for the areas of concern in Institute and South Charleston. While no cancer clusters were identified, BPH is continuing their assessment of these areas and working in close communication with the agency.

Thank you,
Renu

From: Slemp, Cathy C <Cathy.C.Slemp@wv.gov>
Sent: Thursday, November 14, 2019 4:06 PM
To: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; Fisher, Andrea L <Andrea.L.Fisher@wv.gov>
Subject: RE: Please HELP re: Ethylene Oxide (EtO)

Thanks Steve. Very helpful to know.
If we use this data anywhere, we should note that that rate is based on very few cases / difference not considered significant.

Occupational study would definitely be a more direct way to look at exposure.

Cathy

Catherine C. Slemp, MD, MPH
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From: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>
Sent: Thursday, November 14, 2019 3:38 PM
To: Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
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Fisher, Andrea L <Andrea.L.Fisher@wv.gov>
Subject: RE: Please HELP re: Ethylene Oxide (EtO)

Hi Dr. Slemp,

The leukemia figure for Institute is based on a total of 3 cases, so I wouldn't put much emphasis on that difference. As a statistician, none of the differences I see in these comparisons are concerning.

But as I mentioned, I am not able to adequately isolate the target area in my data – the zip code boundaries do not align well with the areas of exposure. That is why I have recommended contacting NIOSH who might be willing to investigate cancer incidence among daily on-site workers that are likely to have relatively high levels of exposure.

Thanks!

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From: Slemp, Cathy C
Sent: Thursday, November 14, 2019 3:19 PM
To: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; Fisher, Andrea L <Andrea.L.Fisher@wv.gov>
Subject: RE: Please HELP re: Ethylene Oxide (EtO)

Thanks Steve:

So looking at this, the only one that stands out a bit is Leukemia in Institute, and in Kanawha overall.
How significant are those differences? Are there other communities in Kanawha that contribute to higher rates in Kanawha beyond Institute?
If significant, anything different that we know about EtO exposure in Institute area vs others and/or about linkage between EtO and leukemia or re other exposures in the area that should be considered?

Hoping you can help us interpret this a bit more / craft some language around findings if we need it with media.

Also, we should include / share info with Dr. Young at KCHD as well before any media activity.

Michelle, let us know what's best. Sounds like DEP info could be released tomorrow? Do we know what DEP data / release will discuss or show and can we anticipate what questions will be raised for us? Can we develop some draft talking points for Allison?

Cathy

Catherine C. Slemp, MD, MPH
Commissioner and State Health Officer
Bureau for Public Health, WVDHHR

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From: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>
Sent: Thursday, November 14, 2019 3:00 PM
To: Slemp, Cathy C <Cathy.C.Slemp@wv.gov>; Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; Fisher, Andrea L <Andrea.L.Fisher@wv.gov>
Subject: RE: Please HELP re: Ethylene Oxide (EtO)

Hi Everyone,

Looks like a face-to-face will not be possible today. Let's try to get together soon and talk about the details involved in this inquiry.

Below are two summary tables for the latest Cancer Registry data.

The first table shows the percentage of cancer cases by cancer site for four different geographic areas of Kanawha County. For example, the first column shows that 13.4% of all cases of cancer in Institute was breast cancer. The data span from 1993-2019, and show the percentages for Institute, Dunbar, South Charleston, and the remainder of Kanawha County. The percentage of cases of breast cancer, leukemia, and lymphoma in Institute, Dunbar, and South Charleston is not substantially different from the rest of Kanawha County.

The second table shows a comparison of incidence rates for breast cancer, leukemia, and lymphoma for Kanawha County, WV, and the US for the years 2012-2016, the most current years for which rates are available. Kanawha County ranks 23rd in WV in breast cancer incidence (22 counties in WV have higher breast cancer incidence rates). The rates for Kanawha County are not significantly different from the overall rates for WV.

Here are a few brief caveats regarding these data. In this instance, zip code boundaries do not align well with the expected area of exposure. These zip codes include areas that lie outside the affected area, so the results I have calculated may be quite diluted. Furthermore, we have a fairly high percentage of PO Box and rural route addresses in WV compared to other registries, which introduces an unknown amount of error into the geocoding process. For this reason, I have not analyzed the data by census tract or block groups. I'll be happy to go into more detail about these issues when we meet.

Here are the summary tables. Let me know if you have any questions – I am here until 4:00 today. Thanks!

Percentage of Cancer Cases by Type and Geographic Location 1993-2019

Cancer Type	Area and Zip Code			
	Institute	Dunbar	S. Chas.	Remainder of Kanawha County
	25112	25064	25303	
Breast	13.4%	11.0%	15.2%	12.7%
Lymphoma	2.4%	3.5%	2.9%	3.3%
Leukemia	3.7%	2.0%	2.2%	2.0%

Incidence Rate* Comparison from 2012-2016				
	Kanawha Rate	Kanawha Rank	WV Rate	US Rate
Breast	119.7	23rd	117.5	125.2
Lymphoma	19.7	41st	21.4	NA
Leukemia	17.2	12th	14.5	14.1

*Rate per 100,000

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From: Slemp, Cathy C
Sent: Thursday, November 14, 2019 11:20 AM
To: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>; Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>; Adler, Allison C <Allison.C.Adler@wv.gov>; Thompson, Gary L <Gary.L.Thompson@wv.gov>; Thayer, Chuck E <Chuck.E.Thayer@wv.gov>; Fisher, Andrea L <Andrea.L.Fisher@wv.gov>
Subject: RE: Please HELP re: Ethylene Oxide (EtO)

I and Walt are both out today, but you can pull in Gary Thompson and/or Chuck Thayer on this from Commissioner's Office. Also should link in and brief Allison Adler on it.

Cathy

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From: Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>
Sent: Thursday, November 14, 2019 10:46 AM
To: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>; Slemp, Cathy C <Cathy.C.Slemp@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>
Subject: RE: Please HELP re: Ethylene Oxide (EtO)

Sounds good! How about now? Or maybe 3:30 pm today?

I will be leaving at 11:20 am this morning to go down to one of the hotspot facilities today, but should be back by 3:30 pm this afternoon.

We can do this as a phone call or you all are welcome to come here to DEP in Kanawha City. Let me know and I can make arrangements!

From: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>
Sent: Thursday, November 14, 2019 10:25 AM
To: Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>; Slemp, Cathy C <Cathy.C.Slemp@wv.gov>
Cc: Farley, Shawn O <Shawn.O.Farley@wv.gov>; Chakrabarty, Renu M <Renu.M.Chakrabarty@wv.gov>; Schmitz, Bin Z <Bin.Z.Schmitz@wv.gov>
Subject: RE: Please HELP re: Ethylene Oxide (EtO)

Hi Everyone,

Could we meet for 30 minutes today? I want to discuss details of the limitations of Cancer Registry data for investigating this concern, and those details are better understood when everyone is together looking at maps of the area. Understanding these limitations is very important in evaluating the usefulness of Registry data in this circumstance.

I will pull our most recent data and have a summary available this afternoon.

Thanks!

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From: Cochran, Michelle L
Sent: Wednesday, November 13, 2019 4:09 PM
To: Thomasson, Erica R <Erica.R.Thomasson@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Farley, Shawn O <Shawn.O.Farley@wv.gov>
Subject: RE: Please HELP re: Ethylene Oxide (EtO)

Thanks Erica. I had called and left a voicemail for them.

From: Thomasson, Erica R <Erica.R.Thomasson@wv.gov>
Sent: Wednesday, November 13, 2019 4:08 PM
To: Cochran, Michelle L <Michelle.L.Cochran@wv.gov>; Ivey, Walter M <Walter.M.Ivey@wv.gov>
Cc: Blankenship, Steven E <Steven.E.Blankenship@wv.gov>; Farley, Shawn O <Shawn.O.Farley@wv.gov>
Subject: RE: Please HELP re: Ethylene Oxide (EtO)

Looping Steve and Shawn in on this... Can you give an update on staff where the cancer risk data was going to be teased apart by zip code to see if that showed any difference in the risk? See Micelle's email below. Thanks ☺

From: Cochran, Michelle L <Michelle.L.Cochran@wv.gov>
Sent: Wednesday, November 13, 2019 3:52 PM
To: Ivey, Walter M <Walter.M.Ivey@wv.gov>; Thomasson, Erica R <Erica.R.Thomasson@wv.gov>
Subject: Please HELP re: Ethylene Oxide (EtO)
Importance: High

Folks – I got a call from Renu Chakarbarty from DEP DAQ. She had been trying to reach Walt. She wanted to alert us to the fact that DEP will be doing a press release soon about EtO. This is being done because of a FOIA for EtO that will be fulfilled in the near future. They want to do their own press release on the subject rather than letting the FOIA requester release information and spin it to meet their own needs.

She was also asking about the updated info. from the Cancer Registry staff where the cancer risk data was going to be teased apart by zip code to see if that showed any difference in the risk. The timing/need for this has now changed. They would like to have this if it is available or at least know where this currently stands.

The Secretary's will be briefed at the Gov's office this week at the weekly meeting (9 am on Friday). They expect to have their press release ready to go by then.

Any help/guidance you guys can provide would be greatly appreciated. I have not been included in much of the email discussions about this, so I'm not knowledgeable to discuss or provide details to include in the weekly Gov's briefing notes that are due tomorrow by 2 pm.

Thanks! MC