

Chronology of MDHHS E-mails, along with select MDHHS/MDEQ/MI State Public Statements pertaining to blood lead levels of kids in Michigan, primarily in Flint

While the emails are arranged chronologically, if a specific subject matter is discussed over a longer period of time (>1 day), they are grouped together for continuity.

Highlights are either in red or yellow from Flintwaterstudy.org.

FlintWaterStudy.org

Use the following suggested citation.

Edwards, M., S. Roy, W. Rhoads, E. Garner, and R. Martin.

Chronological compilation of e-mails from MDHHS Freedom of Information Act (FOIA) request #2015-557 (2015).

-----Original Message-----

From: Dykema, Linda D. (DCH)

Sent: Thursday, July 23, 2015 10:07 AM

To: Miller, Corinne (DCH); Peeler, Nancy (DCH); Anderson, Paula (DCH); Travis, Rashmi (DCH); Grijalva, Nancy (DCH); Moran, Susan (DCH)

Cc: Priem, Wesley F. (DCH); Bouters, Janese (DCH); Barr, Jacqui (DCH); Fink, Brenda (DCH); Groetsch, Kory J. (DCH)

Subject: RE: Director's Office Assignment -- Flint - need update asap

I spoke with Steve Busch, Lansing District Office manager, DEQ Office of Drinking Water & Municipal Assistance.

The city of Flint recently conducted drinking water testing throughout the city with special attention to those areas known to have old service lines. The city water supply is in compliance with the lead rule, which means that 90% of the water samples were less than the lead action level of 15 ppb. DEQ will, however, recommend that Flint further "optimize" their corrosion control methods. The DEQ has not seen a change in the city's compliance with the lead rule since switching to the Flint River source.

Some water samples had lead levels above 15 ppb. Homeowners receive their sampling results and those with elevated levels are provided with information regarding how to minimize their exposure, including replacement of water supply lines. The city pays for line replacement from the main to the property boundary. The property owner is responsible for some portion of the cost if the line replaced is on their property. To Steve's knowledge, there is no program in Flint to assist homeowners with limited financial means.

Regarding the home with high drinking water lead levels: some years ago the supply line that serves the neighborhood was replaced, but somehow this house was not connected to the new line, such that the family's

drinking water supply was coming from the old corroded lead pipe. None of the neighbors water had elevated lead levels, which was likely why she was temporarily connected by garden hose to a tap supplied by the new line. She has since been permanently connected to the new line.

Regarding the EPA drinking water official quoted in the press articles: the report that he issued was a result of his own research and was not reviewed or approved by EPA management. He has essentially acted outside his authority.

-----Original Message-----

From: Miller, Corinne (DCH)

Sent: Tuesday, July 28, 2015 11:11 AM

To: LyonCallo, Sarah (DCH)

Subject: FW: Director's Office Assignment -- Flint - need update asap

Below is the e-mail Linda sent to a group of individuals last week when the issue about lead in drinking water was raised. Linda reached out to the DEQ regional office that would work with Flint.

Both Brenda Fink and Nancy Peeler were included in Linda's response.

-----Original Message-----

From: LyonCallo, Sarah (DCH)

Sent: Tuesday, July 28, 2015 11:17 AM

To: Miller, Corinne (DCH); Dykema, Linda D. (DCH)

Subject: RE: Director's Office Assignment -- Flint - need update asap

Linda and I talked and I am going to cc you both when the request goes back to Nancy.

In the interim, Nancy wanted to add some more years of data to the comparison (so there are 4 total years of data).

Cristin is adding these years to the control chart for the proportion of first time elevated BLL of those tested using method by Shewart for proportions. (Linda - the data are deduped to "kid".)

From: [Miller, Corinne \(DCH\)](#)
To: [LyonCallo, Sarah \(DCH\)](#); [Dykema, Linda D. \(DCH\)](#)
Subject: RE: Director's Office Assignment -- Flint - need update asap
Date: Tuesday, July 28, 2015 12:23:13 PM

Thanks Sarah. Be sure to cc Brenda Fink too.

Exemplary false statement from MDEQ. Compare the above (specifically Page 3 email: “none of the neighbors’ water had elevated lead levels”) with the following from EPA Scientist Miguel Del Toral’s draft memo (June 24):

- e. EPA Region 5 collects a set of sequential samples from each of two residences on Bryant Street which are connected to the same main as the Walters’ old service line. These samples were analyzed by Chicago Regional Laboratory. The results indicate that home #1 (4526 Bryant Street) does not appear to have a lead service line and lead results in all samples are low. The results from home #2 (4614 Bryant Street) indicate that the portion of the service line from the external shut-off valve to the water main is likely made of lead, which is consistent with the historical practice in Flint. The sampling had a high lead result (peak value) of 22 ug/L.

Full memo: <http://flintwaterstudy.org/wp-content/uploads/2015/11/Miguels-Memo.pdf>

On Jul 27, 2015, at 1:14 PM, Peeler, Nancy (DCH)
<PeelerN@michigan.gov> wrote:

Hi Cristin and Patti –
This is the CLPPP data for Flint that I had mentioned to you last week. Cristin, can you quickly run any tests to see if the difference in the first graph is statistically significant? Bob is at his desk today, best to connect with him if you have questions about the data. We are hoping to send this up today, so we appreciate anything you can do to get us a response this afternoon, if at all possible. Many thanks!

Nancy

On Jul 27, 2015, at 3:11 PM, "McKane, Patricia (DCH)"
<McKaneP@michigan.gov> wrote:

Thanks Nancy.
I was in a session on Shewart charts for QI. I think this might be a good approach for the needs assessment We can talk more. Hopefully the slides will be available, because I can't type that much with my thumbs

From: Peeler, Nancy (DCH)
Sent: Monday, July 27, 2015 3:37 PM
To: McKane, Patricia (DCH)
Cc: Larder, Cristin (DCH); Scott, Robert L. (DCH)
Subject: Re: Flint Testing and EBLLs.xlsx

Thanks, Patti. I'm looking forward to hearing about your ColIN meeting, I'm sure you will be bringing great information back.

From: Larder, Cristin (DCH)
Sent: Tuesday, July 28, 2015 9:25 AM
To: Peeler, Nancy (DCH); McKane, Patricia (DCH)
Cc: Scott, Robert L. (DCH)
Subject: RE: Flint Testing and EBLLs.xlsx

Hi Nancy,

I made a p-chart, which Shewhart's version of a control chart for proportions, for the data you sent. Basically, I used the monthly data from 2013-14 to create upper and lower control limits, then plotted the 2014-15 data in a run chart. It shows that the three months in question are the only ones that lie outside the control limit: in fact, they are the only points that lie well above the mean at all. This doesn't say anything about causality, but it does warrant further investigation.

There are several next steps we can employ if the folks upstairs ask us to look deeper into the data. Also, I'm not sure if you talked at all with the Environmental Health folks, but their toxicologists could probably help give us some context to the issue.

Cristin

From: Larder, Cristin (DCH)
Sent: Tuesday, July 28, 2015 10:07 AM
To: Peeler, Nancy (DCH); McKane, Patricia (DCH)
Cc: Scott, Robert L. (DCH)
Subject: RE: Flint Testing and EBLLs.xlsx

Nancy and Bob,

Is the control chart clear enough, do you think? I could whip up a fact sheet with a description of what it shows, if you think it would help make it more digestible for our audience.

Cristin

From: Scott, Robert L. (DCH)
Sent: Tuesday, July 28, 2015 10:15 AM
To: Larder, Cristin (DCH); Peeler, Nancy (DCH); McKane, Patricia (DCH)
Subject: RE: Flint Testing and EBLLs.xlsx

Cristin,

I can safely say I don't understand it without some explanation.

However, late yesterday Nancy and I decided to take a look two years farther back to see how they fit with the recent years. Please see attached, which I just finished this morning. Sorry I didn't have this for you yesterday before you did the analysis. Would this new information change the analysis?

Thanks,

Bob

From: Larder, Cristin (DCH)
Sent: Tuesday, July 28, 2015 11:00 AM
To: Scott, Robert L. (DCH); Peeler, Nancy (DCH); McKane, Patricia (DCH)
Subject: RE: Flint Testing and EBLLs.xlsx

Okay, thanks, Bob. I'll incorporate the previous years and put the new results into a publisher document with some description of what's going on in the chart.

We'll find out if this changes the results!

From: Scott, Robert L. (DCH)
Sent: Tuesday, July 28, 2015 1:48 PM
To: Peeler, Nancy (DCH)
Subject: FW: Flint Testing and EBLLs.xlsx

Nancy,

I said this morning I'd look to see if the distribution of EBLLs in the July-September 2014 "spike" was any different from the typical distribution of EBLLs in Flint. I compared totals by zip code vs totals by zip code from 2010 (BLLs >=5). The pattern is very similar and is further evidence, I think, that the water was not a major factor here.

A	B	C	D
July-September 2010			
zip	# of EBLL		
48503	11	16	% of total
48504	17	24	% of total
48505	19	27	% of total
48506	11	16	% of total
48507	8	11	% of total
48532	█	6	% of total
Total	70	100	% of total
CY 2010			
zip	# of EBLL		
48503	68	21	% of total
48504	88	27	% of total
48505	79	24	% of total
48506	50	15	% of total
48507	30	9	% of total
48532	11	3	% of total
Total	326	100	% of total

Cristin is redoing her analysis with the extra two years of data. I assume it's OK to let her go ahead with that.

Bob

From: Scott, Robert L. (DCH)
Sent: Tuesday, July 28, 2015 2:28 PM
To: Peeler, Nancy (DCH)
Subject: RE: Flint Testing and EBLLs.xlsx

No, sorry, I mislabeled the top one. Should say "July-September 2014."

From: Larder, Cristin (DCH)
Sent: Tuesday, July 28, 2015 4:54 PM
To: Scott, Robert L. (DCH); Peeler, Nancy (DCH)
Cc: LyonCallo, Sarah (DCH); McKane, Patricia (DCH)
Subject: RE: Flint Testing and EBLLs.xlsx

Hello Nancy and Bob,

It turns out that adding in the additional two years of data did not change the results of the analysis:

there does appear to be a higher proportion of EBLL last summer than usual. I wrote up my methods and results in the attached brief, just in case anyone asks for specifics.

Have a good night!

Cristin

From: LyonCallo, Sarah (DCH)
Sent: Tuesday, July 28, 2015 5:01 PM
To: Miller, Corinne (DCH); Dykema, Linda D. (DCH)
Subject: FW: Flint Testing and EBLLs.xlsx

Attached is Cristin's work with the monthly EBLL proportion data for Flint.

From: [Miller, Corinne \(DCH\)](#)
To: [LyonCallo, Sarah \(DCH\)](#); [Dykema, Linda D. \(DCH\)](#)
Subject: RE: Flint Testing and EBLLs.xlsx
Date: Wednesday, July 29, 2015 8:54:24 AM

Thanks Sarah.



Elevated Blood Lead Levels Among Children <16 Years of Age

City of Flint, May 2011— April 2015

QUESTION:

Were positive tests for elevated blood lead levels (EBLL) higher than usual for children under age 16 living in the City of Flint during the months of July, August, and September, 2014?

METHODS:

- The number of children tested for lead poisoning varies from month to month, so the proportion of children with a first-time blood lead level ≥ 5 $\mu\text{g/dL}$ was calculated for each month (Figure 1).
- To determine whether or not the difference between the summer of 2014 and the previous three years warrants further investigation, a control chart for proportions (Figure 3) was constructed.
- Monthly data from May 2011 to April 2014 were used to construct upper and lower control limits (UCL and LCL) representing the amount of expected variation in EBLL (Figure 3).
- Finally, proportions of EBLL from May 2014 to April 2015 were plotted in Figure 3.

Figure 1. Formula for Calculating Monthly Proportion of Children with Elevated Blood Lead Levels

$$\frac{\text{Number of Children with Blood Lead Level } \geq 5 \mu\text{g/dL}}{\text{Total Number of Children Tested}} = \text{Proportion with EBLL}$$

Figure 2. Proportion of Children Tested for Lead Poisoning with Elevated Blood Lead Levels, May 2011—April 2015

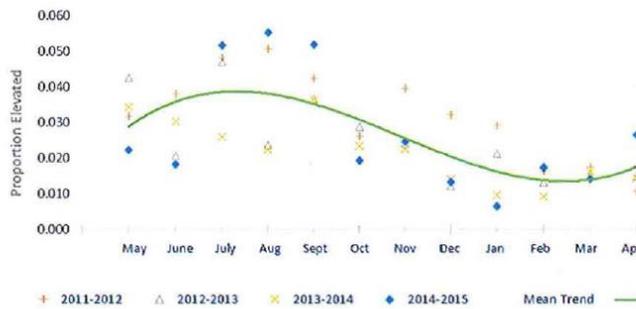


Figure 3. Control Chart of Proportion of Children Tested for Lead Poisoning with Elevated Blood Lead Levels, May 2014—April 2015



RESULTS:

- Figure 2 shows that—on average—there appears to be a higher proportion of first-time EBLL during the summer months of July, August, and September.
- However, even compared to the previous three years, the proportion of first-time EBLL is highest during summer 2014 (Figure 2).
- Based on the control chart for proportions (Figure 3), only the summer months of July, August, and September had proportions of EBLL higher than that expected from random variation over time.
- Further, the summer months of 2014 were the only data points between May 2014 and April 2015 with EBLL proportions above the average (mean) of the previous three years (Figure 3).

CONCLUSION:

- Based on the results depicted in Figure 3, positive tests for EBLL were higher than usual for children under age 16 living in the City of Flint during the months of July, August, and September, 2014.
- However, it's important to note that the purpose of control charts is to monitor data for the quick detection of abnormal variation—not to construct a case for causality.

SOURCES:

- Data for the City of Flint was provided by the [Childhood Lead Poisoning Prevention Program](#) at the Michigan Department of Health and Human Services (MDHHS). Information is current as of July 27, 2015.
- Control chart methods are based on [The Six Sigma Way Team Fieldbook: An Implementation Guide for Process Improvement Teams](#), by Peter Pande, Robert Neuman, and Roland Cavanagh.

At 03:14 PM 11/17/2006, Robert L. Scott wrote:

Thanks for the info. Please see attached. Just a reminder that a "proposal" is also required. It need not be particularly long or formal, but should indicate clearly the data requested, and what you intend to do with it.

--

Date: Fri, 17 Nov 2006 15:41:55 -0500

To: "Robert L. Scott" <scottrob@michigan.gov>

From: Marc Edwards <edwardsm@vt.edu>

Subject: Proposal and signed data agreement

Robert,

Attached is my signed agreement. My proposal is to do a study of potential benefits resulting from a community intervention in Lansing, MI.

Specifically, last year Lansing distributed drinking water filters and sent out enhanced flushing instructions to mitigate levels of lead in drinking water in homes with lead pipes. I am trying to determine whether this intervention had any discernable benefit on blood lead levels in the population.

To conduct this statistical test, I would like the following fields extracted from your database:

- 1) City of Lansing blood lead values, draw dates, and subject ID number from January 1 2001 to present. If you do not have accessible data starting in 2001, then go back as far as you can (e.g., 2002).
- 2) The same data for Ingham County (which I assume includes Lansing). If it is possible to get all data from within Ingham County but excluding Lansing that would be ideal. But I could presumably delete the duplicate data between set 1 and set 2 by hand if necessary.
- 3) The same data for the city of Detroit MI.

The statistical comparison will examine 1) temporal changes in % elevated blood lead for Lansing before and after the intervention, and 2) cross comparisons in trends between Lansing (with intervention) and Detroit and Ingham County (without intervention).

This is a fairly straightforward test that I suspect will confirm that no significant change arose due to the intervention in Lansing, consistent with water as a minor contributor to blood lead in Lansing.

If you should have additional questions please e-mail me at this address or call me at [REDACTED]

Regards,
Marc Edwards

From: Marc Edwards [<mailto:edwardsm@vt.edu>]

Sent: Wednesday, September 2, 2015 8:36 PM

To: 'scottrob@michigan.gov' <scottrob@michigan.gov>

Subject: Repeat of 2006 study request, but for Flint and Genesee County and Detroit zip codes, from January 1 2011 to present.

Hi Robert,

I would like to repeat the study I did below, but updated for Flint Michigan, Genesee Country Michigan, and Detroit.

What I need is blood lead data from all Flint zip codes, Genesee County zip codes and Detroit zip codes from 2011 to present.

Please do not identify the records by name, but have an ID code for each individual that can be sorted, along with the date of the measurement, blood lead result, zip code in which the child resides, and child's birth date so I can determine the age of the subject.

The intervention of interest, is the change from Detroit water to Flint River water, in Flint Michigan. Genesee County and Detroit serve as control data sets.

If it can be provided in a format that can be read into EXCEL, that would be best.

Let me know if you need a new signed data sharing agreement, or whether our agreement from 2006 is still ok.

Best Regards,

Marc Edwards

From: Marc Edwards [<mailto:edwardsm@vt.edu>]

Sent: Monday, September 07, 2015 11:40 AM

To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>

Subject: FW: Repeat of 2006 study request, but for Flint and Genesee County and Detroit zip codes, from January 1 2011 to present.

Robert,

Can you confirm that you received the e-mail below, with the request for blood lead data on Flint?

Marc

From: Scott, Robert L. (DCH) [<mailto:ScottR9@michigan.gov>]

Sent: Tuesday, September 08, 2015 7:55 AM

To: Marc Edwards

Subject: RE: Repeat of 2006 study request, but for Flint and Genesee County and Detroit zip codes, from January 1 2011 to present.

Yes, sorry for the delay; I'll get you a more complete answer later today.

From: Scott, Robert L. (DCH) [mailto:ScottR9@michigan.gov]

Sent: Tuesday, September 08, 2015 4:19 PM

To: Marc Edwards

Subject: RE: Repeat of 2006 study request, but for Flint and Genesee County and Detroit zip codes, from January 1 2011 to present.

Marc,

Sorry I'm slow to get back to you. Yes, I think this sounds great. There has been some concern about the water source change in Flint, and in fact we had a call about it today. Yes, this will need a new data sharing agreement. Please fill out the attached and send back to me, leaving it as a Word document without signature. I'll run it past Legal, and they'll no doubt ask for a couple of changes.

Thanks,

Bob

Robert L. Scott

Childhood Lead Poisoning Prevention Program

Michigan Department of Health & Human Services

[\(517\) 335-8178](tel:5173358178)

fax [\(517\) 335-8509](tel:5173358509)

From: Marc Edwards [mailto:edwardsm@vt.edu]

Sent: Tuesday, September 08, 2015 5:39 PM

To: 'Scott, Robert L. (DCH)'

Subject: RE: Repeat of 2006 study request, but for Flint and Genesee County and Detroit zip codes, from January 1 2011 to present.

Here you go.

Best Regards,

Marc

**DATA USE AND NON-DISCLOSURE AGREEMENT CONCERNING
PROTECTED HEALTH INFORMATION OR OTHER CONFIDENTIAL INFORMATION**
Michigan Department of Health and Human Services

Project Title: Flint Water Study
Data Recipient: Marc Edwards
Organization: Virginia Tech
Address: 407 Durham Hall
Blacksburg, VA 24061
Phone: 540 320 8740 e-mail: edwardsm@vt.edu

In accordance with this agreement, data are provided by the Michigan Department of Health and Human Services (MDHHS), Bureau/Division on Date to the Data Recipient.

The parties agree to the provisions specified in this Agreement, the Health Insurance Portability and Accountability Act (HIPAA), and all other applicable public health, research, and confidentiality laws.

SECTION 1: DATA SOURCE, PURPOSE, USE, DESCRIPTION, APPROVAL (IF HUMAN SUBJECT RESEARCH)

What is the Source of the Requested Data? (e.g., Vital Records, Health Statistics, Cancer Surveillance, Medicaid, etc.)
Blood Lead Surveillance Data

What is the Data Recipient's Purpose for, and Specific Use of, the Data?

1. Describe why these data are requested (e.g., Research, Statistics, Public Health, Health Care Operations, Administration of the Medicaid Program).
We are researching the effects of interrupted corrosion control on lead in Flint's drinking water. Increased lead in drinking water can increase the incidence of childhood lead poisoning or elevated blood lead. The Michigan DEQ has issued a press statement, that said that they have studied the blood lead records and that there is no increase in blood lead of Flint residents since the switch to Flint River Water Source. I want to verify their claim scientifically by repeating their study.
2. Describe how the data will be used/disclosed, or incorporate by reference and attach a copy of the research protocol, work plan, or request letter that details the purpose and use of data, etc.
The analysis will be similar to an ecological study I conducted in Washington DC from 2000-2007. In that case the intervention was chloramination, whereas in Flint the intervention was changing from a non-corrosive source water to a corrosive source.
3. Describe the data requested indicating amount, type, by what medium the data will be provided, and whether the data recipient is granted access to the data warehouse or state archives.
I previously did a similar study in 2006, and the requested data was provided to me on CD-ROM.
 - a. Specify the data elements (e.g., age, gender, etc.) and time periods (e.g., January 2003 through January 2005).
All blood lead data from all Flint zip codes, Genesee County (but not including zip codes) and Detroit zip codes from 2011 to present. Please do not identify the records by subject name, but have an ID code for each individual that can be sorted, along with the date of the measurement, blood lead result, area in which the child resides, and child's birth date so I can determine the age of the subject. Genesee County and Detroit serve as control groups to Flint.
 - b. Specify if the data requested is identifiable, de-identified, or a limited data set as defined by HIPAA.
It would be de-identified if the zip codes for Flint are identified as Flint, zip codes for Genesee County (minus Flint) are identified as Genesee County, and Detroit zip codes are identified as Detroit.

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- c. Specify the medium requested (e.g., electronic, hard copy, etc.).
Electronic
- d. Specify if direct access to the data warehouse or state archives is requested.
No. Electronic is fine.

From: Marc Edwards [<mailto:edwardsm@vt.edu>]

Sent: Thursday, September 10, 2015 7:57 PM

To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>

Subject: RE: Repeat of 2006 study request, but for Flint and Genesee County and Detroit zip codes, from January 1 2011 to present.

Do you need anything else from me?

Marc

From: Scott, Robert L. (DCH) [<mailto:ScottR9@michigan.gov>]

Sent: Friday, September 11, 2015 12:58 PM

To: Marc Edwards

Subject: RE: Repeat of 2006 study request, but for Flint and Genesee County and Detroit zip codes, from January 1 2011 to present.

Maybe. My contact at Legal let me know the other day that he's unusually busy with other matters right now, so his review of DUAs might be delayed unless there was a specific reason for quicker action on his part.

If you are in need of a reasonably-quick turnaround—i.e., a week rather than a month or so—then please send me a paragraph explaining why. I'll pass that along with your DUA.

If you're not in a hurry, then I'm all set for now—I'll submit your DUA as is.

From: Marc Edwards [<mailto:edwardsm@vt.edu>]

Sent: Friday, September 11, 2015 1:03 PM

To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>

Subject: RE: Repeat of 2006 study request, but for Flint and Genesee County and Detroit zip codes, from January 1 2011 to present.

Yes, I think there is clearly some urgency to the situation.

MDEQ has publicly stated that your blood lead records, are showing that there is no public health concern for residents in Flint.

The levels of lead in Flint water, that we are finding in our water sampling, are certainly in a range that can cause childhood lead poisoning.

Indeed, one child has already, likely been lead poisoned from exposure to high lead in water.

I think the fact that you already have other teams working on these records, indicates a high level of interest, and urgency.

Congressional interest in the safety of the water is also very high, and this will be an important issue in deciding options for treating the water, in the weeks and months ahead.

Best Regards,

Marc

From Michigan Radio (Sep 6, 2015):

Team testing Flint water for lead sample by sample

...

“The samples don’t match the testing that we’ve been doing in the same kind of neighborhoods all over the city for the past year,” says Brad Wurfel, a state Department of Environmental Quality spokesman.

Wurfel says DEQ has conducted two rounds of testing in the past year. He adds that the Department of Community Health conducts its own blood level lead testing in Flint.

“With these kind of numbers,” Wurfel says, “we would have expected to be seeing a spike somewhere else in the other lead monitoring that goes on in the community.”

...

<http://michiganradio.org/post/team-testing-flint-water-lead-sample-sample>

From: Scott, Robert L. (DCH)

Sent: Friday, September 11, 2015 1:09 PM

To: Peeler, Nancy (DCH); Lishinski, Karen (DCH); Priem, Wesley F. (DCH)

Subject: Flint water study

Nancy, Karen and Wes,

I'm passing this along as follow-up to our previous attention to the Flint water changeover situation. The attached was submitted to me along with a request for de-identified data, which should be no problem.

When you have a few minutes you might want to take a look at it. Sounds like there might be more to this than what we learned previously. Yikes!

Robert L. Scott

Childhood Lead Poisoning Prevention Program Michigan
Department of Health & Human Services (517) 335-8178

fax (517) 335-8509

Attached (Edwards et al. 2015. NSF Rapid Grant Proposal):

A. Project Summary

Overview: Flint, MI, is currently suffering from a "perfect storm" attributable to out-of-control corrosion of its potable water distribution system. The corrosion is undermining water affordability for residents, financial viability of city government, water aesthetics, and hygiene/sanitation as revealed in local and national news reporting. We *hypothesize* that these circumstances will also create severe chemical/biological health risks for Flint residents, including elevated levels of lead and opportunistic premise plumbing pathogens (OPPPs) in drinking water. Preliminary data collected from a home of a lead poisoned child in Flint has revealed extraordinarily high levels of lead, with average concentrations over 20 minutes of water use exceeding 2,000 ppb (> 200 times the World Health Organization allowable levels for lead in potable water).

The main *objectives* of this research are to: 1) compare levels of chlorine, iron, fecal indicator bacteria, OPPPs, and corrosion-inducing bacteria present in water mains of a distribution system with uncontrolled corrosion (Flint) versus surrounding cities/counties still using non-corrosive water, 2) profile OPPPs occurrence in hot and cold potable water systems at these same locations, and 3) determine if there is evidence of elevated lead in Flint homes, and, if so, forensically determine the links to iron corrosion. Our team is uniquely qualified to do this work given our just published peer reviewed research on this subject and our extensive collaborations with key stakeholders in Flint.

Intellectual Merit: The four elements of the "perfect storm" currently undermining water quality (and possibly public health) in Flint include: a) chronic underinvestment in water infrastructure, b) underappreciation of the role of corrosion control in sustaining urban potable water systems, c) increased corrosion due to higher chloride in Flint's new source water, and d) failure to appropriately monitor for lead and OPPPs. The latter two factors are amongst the most important health problems arising in modern potable water systems. The high rates of corrosion occurring in Flint are releasing high levels of iron to water and consuming chlorine disinfectant, which our most recent laboratory testing has indicated will increase lead release to water and growth of OPPPs in cold and hot water plumbing systems. The unfortunate but unique opportunity offered by Flint's current situation, provides an ideal opportunity to field test our recent discoveries regarding potentially adverse consequences of iron corrosion on chemical/microbiological water quality at field rather than laboratory scale.

Broader Impacts: This RAPID grant will directly assist residents of Flint in assessing the current safety of their potable water supply. If the results support recently issued public assurances regarding safety of water, the current problems in Flint can be considered mainly of aesthetics and perception due to very distasteful or discolored water. However, if sampling reveals widespread problems, the public will learn of the potential health threat. Since elements of the "perfect storm" afflicting Flint are occurring at some level in many other financially stressed U.S. urban centers with decaying drinking water infrastructure, this Rapid Response Research (RAPID) grant also provides an unprecedented opportunity to advance fundamental scientific and practical understanding at this emerging nexus of infrastructure-environmental engineering-public health. The general results and approach used herein can inform residents and managers of other U.S. cities, who will soon be dealing with similar problems associated with failing potable water infrastructure exacerbated by increased chloride in water due to excessive use of road salt and rising sea levels. The research also provides a compelling case study in *Citizen Science*, since the experiences of Flint parents in monitoring their children's health and environmental exposures was a trigger for our preliminary testing, and Flint consumers will be scientifically empowered by participating in fundamental research relying on collection of samples from their homes and residences. There is also a social justice implication of the research, in that these results can help inform the current policy debate regarding strategies for dealing with cities that have gone bankrupt, as well as the discussion of access to safe and affordable drinking water as a basic human right.

RAPID: Synergistic Impacts of Corrosive Water and Interrupted Corrosion Control on Chemical/Microbiological Water Quality: Flint, MI

1. Problem Statement and Objectives

Flint, MI, is currently suffering from a “perfect storm” due to out-of-control corrosion of its potable water distribution system, undermining the well-being of the community including water affordability for residents, financial viability of city government, water aesthetics, and hygiene/sanitation.¹⁻¹³ Flint’s problems began in April 2014, when emergency managers hired to deal with the city’s fiscal crisis determined they could save money by switching to a local river water source as opposed to purchasing water from Detroit (Table 1). As a result of the change in source water, the Larson Iron Corrosion Index was raised from 0.54 (low corrosion) to 2.3 (very high corrosion) and the chloride to sulfate mass ratio (CSMR) index for lead corrosion increased from 0.45 (low corrosion) to 1.6 (very high corrosion). Concurrently, the managers and state primary agency attempted to save even more money by not feeding an orthophosphate corrosion inhibitor to the water supply (Table 1).

Not surprisingly, the combined effect of more corrosive water and removal of the corrosion inhibitor unleashed unprecedented corrosion in the water main distribution system with cascading personal, economic, and public health consequences to Flint as tracked by news reports and mandatory chemical/biological monitoring of water in the distribution system mains.¹⁻¹⁴ *Our recent research also predicts that these circumstances will potentially create severe chemical/biological health risks for residents, due to impacts on water within building (premises) plumbing systems that include elevated levels of lead and opportunistic premises plumbing pathogens (OPPPs).*¹⁵⁻¹⁸ Because the factors impacting Flint are also occurring at some level in many other financially-stressed U.S. urban centers with decaying drinking water infrastructure,

this Rapid Response Research (RAPID) grant provides an unprecedented opportunity to advance fundamental scientific and practical understanding at this emerging nexus of infrastructure-environmental engineering-public health. We view August-September 2015 as the ideal time to first sample in Flint, as more than 16 months of uncontrolled corrosion have occurred and the water remains near its seasonal peak temperature, maximizing the likelihood of serious problems with lead and OPPPs if they exist.

Our key hypothesis is that the rapid corrosion of iron water mains will dramatically increase lead release to water and growth of OPPPs as measured in consumers’ homes. Mechanistically, higher iron corrosion produces both higher iron in water and lower levels of free chlorine, both of which dramatically increased lead release and OPPPs regrowth in our just published laboratory research utilizing simulated distribution systems.¹⁵⁻¹⁹ The main objectives of this research are to: 1) compare levels of chlorine, iron, fecal indicator bacteria, OPPPs, and corrosion-inducing bacteria present in water mains of a distribution system with uncontrolled corrosion (Flint) versus controlled corrosion in surrounding cities/counties still using non-corrosive Detroit water, 2) profile hot and cold potable water systems at the same sampling locations in MI for OPPPs, and 3) determine if there is evidence of elevated lead in Flint homes, and, if so, forensically determine the links to iron corrosion.^{15, 17-20} The unfortunate but unique opportunity offered by Flint’s current situation provides an ideal opportunity to field test our recent discoveries regarding adverse consequences of iron corrosion on OPPPs and lead concentration at the tap.

Table 1. Water quality parameters for drinking water supplied in Flint, MI before and after the April 2014 switch

Parameter	Before ¹	After ²
pH	7.38	7.61
Hardness (mg/L as CaCO ₃)	101	183
Alkalinity (mg/L as CaCO ₃)	78	77
Chloride (mg/L)	11.4	92
Sulfate (mg/L)	25.2	41
CSMR ³	0.45	1.6
Inhibitor (mg/L as P)	0.35	NONE
Larson Ratio ⁴	0.5	2.3

¹Source: City of Flint Monthly Operation Report, June 2015. Available from www.cityofflint.com

²Source: DWSID 2014 Water Quality Report. Available from www.dwsid.org

³A measure of corrosivity to lead; a value > 0.5 is a critical trigger [10]

⁴A measure of corrosivity to mild steel and iron; corrosion rate increases linearly with Larson Ratio [8]

2. Review of Local Events and Intellectual Merit

Local Impacts. After the switch of water sources, residents of Flint were immediately subject to an outbreak of corrosion-related drinking water problems including flooding from large water main breaks and reported health ailments.¹⁻⁶ General Motors, a prime customer of the water system, reported that the new water was severely corroding auto parts on its assembly line and had to begin importing water, costing the city \$400,000 in lost revenue.⁷ The PI was also alerted by an Environmental Protection Agency volunteer to a case of childhood lead poisoning in a Flint home that was certified as “lead free.”⁸ Samples collected from the home exhibited classic “red water” that is occurring throughout the city (Figure 1), along with the highest sustained levels of lead in drinking water that we have encountered in over 25 years of research on the subject. Specifically, in 30 samples collected over a period of 25 minutes flushing at the kitchen faucet, lead concentrations averaged over 2,000 ppb and were as high as 13,000 ppb. For perspective, these levels are more than 200-1,300 times higher than World Health Organization standards (10 ppb) and several even exceeded the EPA criterion for “hazardous waste” of 5,000 ppb Pb. The city has also reported unspecified economic losses due to water main breaks and water losses through leaks.^{1,7,11-12}

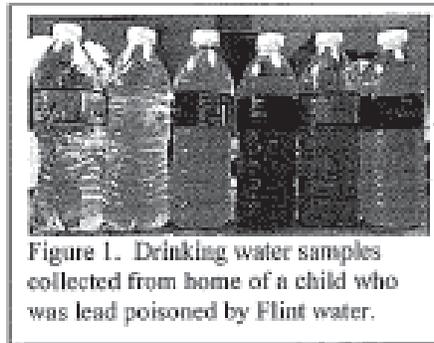


Figure 1. Drinking water samples collected from home of a child who was lead poisoned by Flint water.

The corrosion problems have also had cascading impacts on health parameters monitored under federal regulations. Because the corrosion is rapidly consuming chlorine disinfectant in the water, the city violated EPA limits for *E. coli*.^{5,6} The detaching iron rust also has the potential to expose consumers to other contaminants that pose a serious public health risk, including arsenic¹⁴ and lead that have accumulated in pipes or sorbed to iron surfaces.¹⁵⁻¹⁶ Health effects reported by residents since the switch include skin rashes, hair loss, vomiting, copper poisoning, and the one confirmed case of lead poisoning.^{3,4,7,11} However, the relatively small number of cases reported to date almost certainly underestimates the full extent of the problem. In response to the sampling showing high lead, the authorities who made the decision to switch water sources and stop adding corrosion inhibitor publicly stated that “anyone who is concerned about lead in the drinking water in Flint can relax” and that the water is safe,^{4b} but refuse to sample consumers’ water without pre-flushing the plumbing for at least 5 minutes the night before sampling. The latter practice is known to miss lead in water problems.

We are also concerned about possible health effects that have not yet been investigated. For example, in March 2015 Region 5 EPA was provided reports of higher incidence of Legionnaires’ disease associated with bacteria growth in premise plumbing in the Flint area.²¹ Legionnaires’ disease has recently been acknowledged to be the primary source of waterborne disease outbreaks (and associated deaths) in the U.S.²² Despite that acknowledged risk, there is currently no required monitoring for this important pathogen in consumers’ homes, where it proliferates and can lead to human exposure and infection in showers.²³

Intellectual Merit. The four elements of the “perfect storm” currently undermining water quality (and possibly public health) in Flint include: a) chronic underinvestment in water infrastructure, b) underappreciation of the role of corrosion control in sustaining urban potable water systems, c) increased corrosivity of water sources nationally due to rising chloride levels from anthropogenic pollution and/or rising sea levels, and d) failure to appropriately monitor for lead and OPPPs, which are two of the most important modern-day public health problems arising in building plumbing systems.

- a) **Chronic Underinvestment in Water Infrastructure.** A large fraction of the nation’s potable water infrastructure is on the verge of failure, and this problem has been repeatedly voted by

D. Project Description

members of the American Society of Civil Engineers (ASCE) as the most urgent societal infrastructure challenge with an overall condition grade of "D".^{23,24} Many water main distribution systems are reaching the end of their design lifetime (60-95 years), with water main breaks currently at a rate of 240,000 per year nationally and rising.^{25,26} Aside from obvious public health implications associated with compromised delivery of uncontaminated drinking water to the tap, failure events can cause property damage and water loss through leaks.²⁷ Like many post-industrial manufacturing centers, Flint has a very large potable distribution system constructed to sustain a large consumer and industrial base that no longer exists. The projected cost to upgrade the distribution system is \$1.5 billion dollars,²⁸ which would translate to an unbearable cost of \$50,000 per existing customer in Flint.²⁹

- b) **Under-appreciation of the role of corrosion control in sustaining potable water systems.** Estimates by ASCE, the American Water Works Association (AWWA), the Environmental Protection Agency (EPA), the Water Infrastructure Network (WIN), and the National Academy of Corrosion Engineers (NACE) suggest that direct costs of water pipeline corrosion range between \$8 billion - \$36 billion annually and indirect costs are much higher.²⁷ Leaks result in 7 billion gallons of lost water each day with associated revenue losses of \approx \$3 billion per year for U.S. utilities.²⁹ Problems with leaking potable water plumbing systems in buildings (i.e. premise plumbing) also cost consumers billions of dollars each year.^{30,31} Water utilities can reduce costs of potable water system corrosion and extend the lifetime of these invaluable assets by adding corrosion inhibitors, such as orthophosphate, to the water. Prior research using a relatively low corrosivity source water determined that each dollar invested in corrosion control produced more than \$5 dollars in financial savings due to reduced corrosion damage and extended lifetime of pipeline infrastructure.³² In Flint, the short-sighted decision to reduce chemical costs by removing the corrosion inhibitor and introducing corrosive water to the system may have produced tens if not hundreds of millions of dollars in corrosion damages to its existing potable water distribution system. We are also aware of many other utilities that are cutting back on their corrosion inhibitor doses due to cost-cutting pressures.
- c) **Increased corrosivity of water sources nationally due to rising chloride levels from anthropogenic pollution and/or rising sea levels.** Chloride levels in drinking water are rising nationally in surface water due to use of road salt and seawater intrusion in coastal regions. Road salt use in winter has risen to 137 lbs per year for every American, with a doubling of salt application from 1990 to 2014 (10 vs. 22 million tons) associated with a doubling of chloride levels in northern U.S. waters as monitored by the USGS.^{33,34} There is documented concern about the damage of salt application to infrastructure such as roads and bridges,³⁵ but rising salt levels in the Potomac (due to road salt) in 2015 also have triggered a spike in consumer complaints of red or brown water from their main distribution system,^{36,37} and we are currently working with a utility in Brick, NJ that is reporting high lead in consumers' water due to higher chloride from rising sea levels near their intake as well as road salt use.³⁸⁻⁴⁰ The higher corrosivity of water in Flint due to higher chloride (Table 1), therefore provides an interesting "acute" case study of higher chloride impacts that can shed light on these important national trends.
- d) **Failure of utilities and regulatory agencies to take responsibility for the two most important modern day public health problems arising in building plumbing systems (i.e., lead and OPPPs).** For ten years EPA has acknowledged that utilities are collecting samples in a manner that "misses" worst case lead in water,⁴¹⁻⁴³ and to date they have not required utilities to change monitoring practices to better reveal problems. The EPA LCR sampling protocols have been under review since 2008 and the EPA is expected to issue new requirements sometime in 2016. Hence, sampling in Flint without "pre-flushing" to reduce lead, as revealed by the EPA

volunteer,⁴ could inform modifications to the EPA LCR. Likewise, EPA's current regulations on *Legionella* consider only levels that might be present in water leaving the treatment plant, where it is least likely to be present, and do not yet require monitoring at the point of entry into homes or within buildings where *Legionella* is most likely to be present and cause disease.²¹ Our proposed sampling for *Legionella* at these locations can therefore inform future regulation and distribution system management policies for dealing with this emerging public health risk.^{19,22}

In summary, this proposed RAPID grant characterizing the occurrence of chemical/biological problems in Flint, MI homes explores a newly emerging nexus between degrading infrastructure-environmental engineering-public health that can provide insight into problems facing many cities all over the United States.

3. Approach

The *RAPID grant objectives* will be achieved through three phases of sampling, using analytical methods in routine use by the project team, as follows:

Phase 1. Compare levels of chlorine, iron, fecal indicator bacteria, OPPPs, and corrosion-inducing bacteria present in water mains of a distribution system with uncontrolled corrosion (Flint) versus controlled corrosion in surrounding cities/counties still using non-corrosive Detroit water. A team including the PI and at least 3 graduate students will travel to Flint and stay 3-7 days in mid-August 2015, to collect 8 distribution system samples from surrounding cities still using Detroit water, and to also sample Flint's 8 distribution system monitoring locations (Figure 1). We will stay in two hotel rooms, one located in Flint and one in a surrounding location on Detroit water, to conveniently collect samples for free chlorine at 2 hour intervals expected to correspond to lowest and highest daily demand. All of these analyses will be conducted using standard methods with the exception of testing for corrosion-inducing bacteria which will be conducted with Biological Activity Reaction Test (BART) kits. BARTs are standardized colorimetric culture kits that are semi-quantitative and include testing for Sulfate-Reducing Bacteria (SRB), Heterotrophic Aerobic Bacteria, Heterotrophic Anaerobic Bacteria, Denitrifiers, Slime Forming Bacteria, and Acid Producing Bacteria (APB). It is hypothesized that the Flint waters will have much lower levels of free chlorine, higher levels of iron, corrosion-inducing bacteria, and fecal indicator bacteria than samples collected from locations still on Detroit water.

Phase 2. Profile building hot and cold water plumbing systems for OPPPs at the same sampling locations used in Phase 1. Protocols used previously to sample for a suite of OPPPs and two host protozoa^{18,20} in hot and cold water from taps and biofilms of buildings using quantitative Polymerase Chain Reaction (q-PCR) analysis, will be used to profile the hot and cold water systems for human pathogens at the same locations tested in Phase 1. Specifically, target microbes including *Legionella pneumophila*, *M. avium*, *P. aeruginosa*, *Acanthamoeba* and *Veramoeba vermiformis* will be quantified by qPCR, and hot water samples will be cultured for *Legionella* and

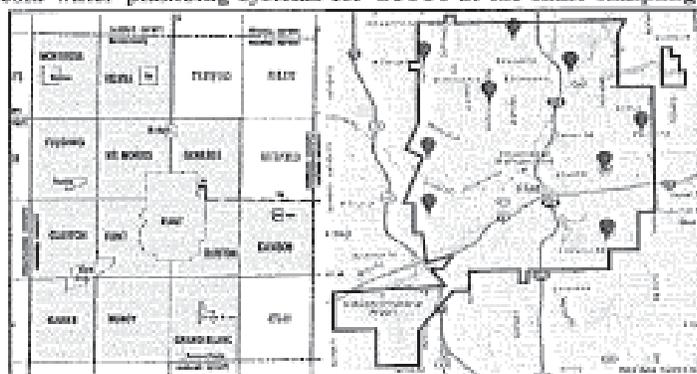


Figure 2. Blue areas indicate areas served by Detroit water before the city of Flint switched (left) and distribution of Flint monitoring stations (right).

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Mycobacteria from each location. Samples collected for microbial analysis and fecal indicator bacteria (Phase 1) will be overnight shipped from Michigan via cold-pack using protocols developed by the project team on NSF Project CBET-1438328. In Flint, for comparison, at least three additional privately owned homes will be sampled for OPPPs using the same protocols as for the public buildings.

Phase 3. Determine if there is evidence of elevated lead in Flint homes. We will coordinate with several local citizen groups including the American Civil Liberties Union (ACLU), Concerned Pastors for Social Action, and others to sample homes in Flint for lead in water. We will prepare 300 sampling kits with instructions, to collect water samples according to standard EPA LCR protocols for shipment to community groups. Each kit will contain three bottles to sample water after standard water stagnation (> 6 hours) at typical-use flow rates, including 1) first draw standard LCR (1 liter), 2) 45 second flushing 0.5 liter sample (targeting the lead service line, if present), and 3) 5 minutes of flushing 0.25 liter sample. Each kit will have a sample form to fill out information including 1) name of person collecting sample, 2) age of home (if known), 3) mailing address of home sampled, and 4) date of sample collection. A phone number will be provided of a member of the Virginia Tech team, who can answer questions that residents have about the instructions (if any). Residents will be instructed to return the sampling kits to a centralized location according to procedures that best suit each citizen group. The sample kits will then be put into boxes provided by the project team, and shipped back to Virginia Tech with the postage paid by the RAPID grant. Assuming a response rate of 33%, 300 samples (= 0.33 X 300 X 3 bottles per kit) will be analyzed for lead, iron, copper and other constituents using the PI's Inductively Coupled Plasma Mass Spectrometer (ICP-MS). All returned kits will be analyzed, and results will be summarized in a letter to each consumer to be sent out within 1 month of receiving the samples. We will provide a phone number of a senior research scientist (Dr. Jeff Parks) that the residents can call to ask questions about their results if they have them and compile the results in a summary form for research publications and public outreach.

4. Project Management and Prior NSF Support

The senior project team (Edwards, Pruden, Falkinham) has collaborated together extensively and has a strong record of success. They will be assisted in leading the project by Dr. Brandi Clark (former NSF graduate fellow) who is a recent graduate of Virginia Tech (2015). Edwards and Clark will coordinate the Flint site visit and the lead survey. Another NSF graduate fellow (Emily Garner, formerly Emily Lipscomb) who is currently co-advised by Pruden/Edwards will assist the Flint site visit team and coordinate biological sample analysis and shipments. Pruden and Falkinham will assist in the data analysis, interpretation and write-up of the results.

5. Broader Impacts

In addition to improving practical and scientific understanding related to two of the most important problems associated with potable water and health in consumer homes (i.e., lead and OPPPs), this RAPID grant will directly assist residents of Flint in assessing the safety of their potable water supply. The results and approach used herein can inform residents and managers of other U.S. cities who will soon be dealing with similar problems associated with failing potable water infrastructure and increased corrosivity of potable water. Phase 3 of this research also provides an interesting case study in *Citizen Science* as a tool to advance scientific understanding, policy, and public health, because consumers are actively collecting samples from their homes and will be participating in National Science Foundation research. The work also has social justice implications, as the plight of Flint residents has already received national attention, and results can inform the current debate regarding access to safe, affordable water as a "right" for Americans in U.S. cities.

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From: Priem, Wesley F. (DCH)

Sent: Friday, September 11, 2015 1:57 PM

To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>; Peeler, Nancy (DCH) <PeelerN@michigan.gov>; Lishinski, Karen (DCH) <LishinskiK@michigan.gov>

Subject: RE: Flint water study

Bob:

Was this all that was sent to you, looks like the cover page is missing?

From: Scott, Robert L. (DCH)
Sent: Friday, September 11, 2015 2:08 PM
To: Priem, Wesley F. (DCH); Peeler, Nancy (DCH); Lishinski, Karen (DCH)
Subject: RE: Flint water study

Yes, it looks that way, but that's how I received it.

From: Priem, Wesley F. (DCH)
Sent: Friday, September 11, 2015 2:34 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: RE: Flint water study

I know when I share this with my Division Director Linda Dykema she will also want to know who sent the request in to you. She has been involved in this issue.

From: [Scott, Robert L. \(DHHS\)](#) **To:** [Priem, Wesley F. \(DHHS\)](#) **Subject:** RE: Flint water study
Date: Friday, September 11, 2015 2:53:06 PM

Prof. Marc Edwards, Virginia Tech

From: Peeler, Nancy (DCH)
Sent: Friday, September 11, 2015 2:43 PM
To: Minicuci, Angela (DCH) <MinicuciA@michigan.gov>
Subject: childhood lead, question
Importance: High

Hi Angela – we had a call from a pediatrician in Flint, who we know because he sits on our Provider Work Group. He asked for some childhood lead data, of the type that we had sent over to the Director, that was forwarded to the Governor’s office. Erring on the side of caution, I wanted to check whether you are good with us sharing that same information with him. See attached. I realize that the Gov’s office shared it with the group of Pastors they were meeting with, so it may be out in the public already. Anyway – if you see this and can give an opinion, I appreciate it.

Nancy

From: Minicuci, Angela (DCH)
Sent: Friday, September 11, 2015 4:05 PM
To: Peeler, Nancy (DCH)
Subject: RE: childhood lead, question

Hi Nancy,

I don’t see an issue with this. Seems pretty straightforward to me.

Angela

From: Peeler, Nancy (DCH)
Sent: Friday, September 11, 2015 4:11 PM
To: Minicuci, Angela (DCH) <MinicuciA@michigan.gov>
Subject: RE: childhood lead, question

Thanks, Angela – I will reach out to him on Monday.

After I contacted you, had a call from CDC. They are hearing about the issues/questions regarding Flint, and were suggesting that we take time to develop a response to any questions we are getting, that is carefully considered. I think that means we need your assistance! What’s the best way to connect with you or your staff for this purpose?

From: Minicuci, Angela (DCH)
Sent: Friday, September 11, 2015 4:16 PM
To: Peeler, Nancy (DCH)
Subject: RE: childhood lead, question

I'd recommend touching base with Jen Smith. She can help draft talking points!

Angela

From: Peeler, Nancy (DCH)
Sent: Wednesday, September 16, 2015 11:03 AM
To: Smith, Jennifer (DCH) <smithj32@michigan.gov>
Cc: Emily Houk R2P (emily@r2pconsultants.com) <emily@r2pconsultants.com>; Lishinski, Karen (DCH) <LishinskiK@michigan.gov>
Subject: FW: childhood lead, question

Hi Jen – based on email with Angela, we'd like to set up a time to work with you to develop some talking points about our state childhood lead program, especially related to the water situation in Flint.

I am in and out of the office quite a bit the next week or so, so I wanted to ask if our communications consultant Emily Houk, and our program nurse, Karen Lishinski, can work with you to get started on this? We appreciate the help! I have copied Emily and Karen on this email so you can reach out to them, or vice versa.

Nancy

From: Smith, Jennifer (DCH)
Sent: Wednesday, September 16, 2015 11:13 AM
To: Peeler, Nancy (DCH)
Cc: Emily Houk R2P (emily@r2pconsultants.com); Lishinski, Karen (DCH)
Subject: RE: childhood lead, question

Thanks Nancy – sounds good! When are you looking to have these finalized?

Jennifer

From: Peeler, Nancy (DCH)
Sent: Wednesday, September 16, 2015 11:15 AM
To: Smith, Jennifer (DCH) <smithj32@michigan.gov>
Cc: Emily Houk R2P (emily@r2pconsultants.com) <emily@r2pconsultants.com>; Lishinski, Karen (DCH) <LishinskiK@michigan.gov>
Subject: RE: childhood lead, question

We are starting to get questions, so relatively soon, say within a week or so?

From: Smith, Jennifer (DCH)
Sent: Wednesday, September 16, 2015 11:22 AM
To: Peeler, Nancy (DCH)
Cc: Emily Houk R2P (emily@r2pconsultants.com); Lishinski, Karen (DCH)
Subject: RE: childhood lead, question

Sounds good – I haven't seen any of the info that was sent to the gov's office. Can you send that my way?

Also, who do you foresee using the talking points?

I'll be out of the office for the next couple of days, so if your team could send a first draft my way that would help get the ball rolling.

Thank you!
Jennifer

From: Peeler, Nancy (DCH)
Sent: Wednesday, September 16, 2015 11:57 AM
To: Smith, Jennifer (DCH) <smithj32@michigan.gov>
Cc: Emily Houk R2P (emily@r2pconsultants.com) <emily@r2pconsultants.com>; Lishinski, Karen (DCH) <LishinskiK@michigan.gov>
Subject: RE: childhood lead, question

Our staff will use the talking points, and we can also share them with the Healthy Homes Section.

Attached is the data that we had forwarded in response to the request from the Director's office, which was passed on to the Governor's office.

From: Scott, Robert L. (DCH)
Sent: Friday, September 11, 2015 1:26 PM
To: Boes, Colin (DCH)
Subject: New DCH-1294, time-sensitive

Colin,

Please see attached DUA and related proposal. I'm asking for a reasonably-quick turn-around on this request for de-identified data, if possible given your schedule. I've pasted Professor Edwards' comments below:

"Yes, I think there is clearly some urgency to the situation.
MDEQ has publicly stated that your blood lead records, are showing that there is no public health concern for residents in Flint.
The levels of lead in Flint water, that we are finding in our water sampling, are certainly in a range that can cause childhood lead poisoning.
Indeed, one child has already, likely been lead poisoned from exposure to high lead in water.
I think the fact that you already have other teams working on these records, indicates a high level of interest, and urgency.
Congressional interest in the safety of the water is also very high, and this will be an important issue in deciding options for treating the water, in the weeks and months ahead."

Thanks,
Bob

Robert L. Scott
Childhood Lead Poisoning Prevention Program
Michigan Department of Health & Human Services
(517) 335-8178
fax (517) 335-8509

From: Boes, Colin (DCH)
Sent: Friday, September 11, 2015 1:33 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: RE: New DCH-1294, time-sensitive

Robert, thank you for letting me know about the time-sensitivity. I will do my best to get this turned around as soon as I can. Since this involves research you may wish to send it the IRB as well and let them know about the urgency. How soon do you think they were hoping to get it back? A few weeks? Shorter? I ask because our IRB director Ian is out of the office until at least next week (I cannot remember exactly how long he is out).

Colin Boes, JD
Privacy Specialist
Office of Legal Affairs & FOIA
Michigan Department of Health & Human Services
201 Townsend St.
Lansing, Michigan 48933
(517) 335-8558 – T (517) 241-1200 - F

From: Scott, Robert L. (DCH)
Sent: Friday, September 11, 2015 1:44 PM
To: Boes, Colin (DCH)
Subject: RE: New DCH-1294, time-sensitive

Thanks. I was told by a colleague of mine that Ian is expected back on Monday (I hope she was right).

I think the researcher is hoping for a turn-around with a week or so, but I'm sure he knows he can't make (and hasn't made) demands. I'll check with him about an IRB.

From: Boes, Colin (DCH)
Sent: Friday, September 11, 2015 2:08 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Cc: Horste, Ian (DCH) <Horstel@michigan.gov>
Subject: RE: New DCH-1294, time-sensitive

Robert,

Here are my comments regarding this DUA. Please feel free to give me a call if you have any questions. As I indicate below, we also need to see about whether our IRB needs to be involved.

1. I want to know more about the study that is being recreated in item 1. The attached protocol seems to discuss more about the study of the water samples, not the blood lead data. Saying that the researcher wants to verify the claim of MDEQ is not sufficient. It does not have to be a great deal longer, but it should explain what the intended use of the blood lead data is.

It is also important to know exactly how it will be used for research in order to justify the release not just under HIPAA, but also under R 325.9086 pertaining to the confidentiality of blood lead test reports. It must be for the "If necessary for the purpose of research designed to develop or contribute to generalizable knowledge, with documented approval by the department's institutional review board." R

325.9086(2)(e). I am not sure how Ian would handle this, given the language in the rule that seems to require IRB approval.

2. Tying in with 1. above, telling us that the analysis will be similar to some other study is insufficient. This section should tell us how the data will be used and disclosed, how many people (research team) might have access, what formats it might be used in and other similar information. The attached research protocol, as noted above, does not get into sufficient detail regarding exactly how our blood lead data will be used and how its use will be restricted.

I also need to know more about how the data will be secured on their end, how it will be handled, by who, and what will be done with it when it is no longer needed for their study.

3. The researcher indicates this data will be deidentified, but then goes on to ask for a number of identifiers that make the data identifiable, including county, city, and birth date of the child. In order for data to be deidentified (short of the statistical analysis method which would have to be documented and shown to us), it must not contain any geographic subdivision smaller than state. 45 CFR 164.414(b)(2)(i)(B). Additionally, all elements of dates related to the individual must not be included, which includes birth date. 45 CFR 164.414(b)(2)(i)(C). Therefore, the researcher must follow protocols for identifiable data, which may include requesting a waiver of informed consent from the IRB. The researcher could possibly obtain the data requested as a limited data set without a waiver I believe (though we still would want to run it by the IRB). If this is the case, item 3.b. should be changed to "Limited Data Set."

Colin Boes, JD
Privacy Specialist
Office of Legal Affairs & FOIA
Michigan Department of Health & Human Services
201 Townsend St.
Lansing, Michigan 48933
(517) 335-8558 – T (517) 241-1200 - F

From: Scott, Robert L. (DCH) [<mailto:ScottR9@michigan.gov>]
Sent: Tuesday, September 15, 2015 9:21 AM
To: Marc Edwards
Subject: FW: New DCH-1294, time-sensitive

Marc,

Please see Colin's (Legal Affairs) comments below. I apologize for not passing it along yesterday—the day got away from me. I clearly have a lot to learn—I made changes to your document thinking it was a slam-dunk as de-identified, but was wrong, as indicated below.

Please make changes to your DCH-1294 as directed by Colin's comments, and re-submit to me, still no signature.

Thanks,
Bob

From: Marc Edwards [<mailto:edwardsm@vt.edu>]
Sent: Tuesday, September 15, 2015 4:58 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: RE: New DCH-1294, time-sensitive

Can you tell me how I can do a limited dataset? Can I just have the age in years, for example?

Thanks so much!

Marc

From: Scott, Robert L. (DCH) [<mailto:ScottR9@michigan.gov>]
Sent: Tuesday, September 15, 2015 5:10 PM
To: Marc Edwards
Subject: RE: New DCH-1294, time-sensitive

I can certainly provide age in years instead of date of birth, although either one would be acceptable according to this link I found:

http://www.hopkinsmedicine.org/institutional_review_board/hipaa_research/limited_data_set.html

From: Lawrence Reynolds [mailto:lrey52@gmail.com]
Sent: Wednesday, September 16, 2015 10:31 AM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>; Mona Hanna-Attisha <MHanna1@hurleymc.com>; Laura Carravallah <lcarrav1@yahoo.com>; Dr. Lawrence Reynolds, M.D. <reynolds@mottchc.org>
Subject: Lead level data

Good morning Mr. Scott .

Thank you for your timely response.I have reviewed the graphs with our GCHD and Dr. Mona Hanna-Attisha of Hurley.Is it possible to stratify the data by age -under 15 months, 16 months to under 6 years of age , over 6 years.Also can we get the most recent data for 2015.

At this point we will work with our patients to educate them.

Breast feeding is first choice .

I understand different filters do different things for lead , and not all get lead clumps from leaching pipes so we will not emphasize them.

We will try to get WIC to cover bottled water and encourage using water from outside the city system

Our goal is to give the most consistent correct information.

Are there any plans for public service announcements from the state ?

I am asking you to cc my reynolds@mottchc.org email along with lrey52@ gmail so I can access from anywhere.

Lawrence Reynolds

From: Scott, Robert L. (DCH)
Sent: Tuesday, September 15, 2015 1:17 PM
To: reynolds@mottchc.org
Cc: Peeler, Nancy (DCH); Lishinski, Karen (DCH)
Subject: Lead graphs
Attachments: Flint Testing and EBLs.pdf

Dr. Reynolds,

Per your conversation with Nancy Peeler, please see attached. Let me know if you have any questions about the data.

Thanks,
Bob Scott

Robert L. Scott
Childhood Lead Poisoning Prevention Program
Michigan Department of Health & Human Services
(517) 335-8178
fax (517) 335-8509

Flintwaterstudy.org: The graphs that were sent to Dr. Reynolds were also sent to Dr. Hanna-Attisha and Dr. Edwards and appears on page 55.

From: Mona Hanna-Attisha (Sep 16 11:28 AM)

To: 'Scott, Robert L. (DCH)'; Lawrence Reynolds; Laura Carravallah; Dr. Lawrence Reynolds, M.D.
Cc: Peeler, Nancy (DCH); Lishinski, Karen (DCH); Emily Houk (emily@r2pconsultants.com)
Subject: RE: Lead level data

Thanks Bob for your willingness to get us this data!

At Hurley Children's Hospital, we have run similar analysis of BLL for all kids 5 and under, and then a focus on kids 15 months and under, with first time lead levels starting from 01/01/2013 to date of water source change 04/25/14 and then compared one year after water switch 4/25/15 to current. We looked at the change in mean BLL and the change in the % of EBL. Our sample size is representative of the high risk City of Flint population (zip codes 48501-48507), yet the sample size would be much greater with your MCIR data. To have more data will greatly help us advocate for prevention and educate our families.

Thank you in advance!

From: Valacak, Mark [mailto:MVALACAK@gchd.us]
Sent: Wednesday, September 16, 2015 4:19 PM
To: Blen, Stan (DCH)
Cc: Brickey, Tamara; Scharer, Dawn; LaRocco, Toni
Subject: FW: Water with WIC

Stan,

This is the request we received from Dr. Hanna- Attisha at Hurley regarding infant formula that I left you a message about on your voicemail.

I am also including a link to the M-live article about the controversy.

http://www.mlive.com/news/flint/index.ssf/2015/09/virginia_tech_researcher_says.html

Mark Valacak, MPH, Health Officer
Genesee County Health Department,
630 S. Saginaw St. Suite 4 Flint, MI 48502-1540
Phone 810-257-3588 Fax 810 257-3147
E-mail mvalacak@gchd.us

Kristen – Please review and my suggestion is to obtain water via SNAP benefits, as WIC can not provide the bottled water. Comments? Thanks

*Stan Bien, Director
Michigan WIC Program - BFMCH
Michigan Department of Health & Human Services
320 South Walnut Street - 6th Floor
Lansing, MI 48913
517.335.8448*

From: Hanulcik, Kristen (DCH)
Sent: Wednesday, September 16, 2015 8:07 PM
To: Blen, Stan (DCH)
Cc: Baker, Mary A. (DCH)
Subject: Re: Water with WIC

I would agree with that from an access perspective, for instances when an alternative to tapwater is desirable.

I would like to talk with you and Mary Ann about this more in the morning if we can make that happen.

Meanwhile, I have Mary Ann copied as a think we should be in touch with our state lead contact regarding this.

If area hospitals are going to be providing discharge instructions to mix formula with bottled water, this will have big implications for the WIC agency.

Sent from my iPhone

From: Baker, Mary A. (DCH)
Sent: Thursday, September 17, 2015 11:05 AM
To: Bien, Stan (DCH); Hanulcik, Kristen (DCH)
Subject: Flint water supply

In Nancy Peeler's absence, I was able to reach a nurse consultant in the Lead program by the name of Karen Lishinski. The Lead program is working with Jennifer Smith of the Communications division to craft a department response to the issue. She had no timeline for when the response is expected. I explained our stake in this and asked her to keep us in the loop, which she agreed to do. Here are a few of the points I picked up from her during our conversation.

- This issue has been ongoing for a while now, but picked up steam in July when the Virginia Tech folks got involved
- The Lead program's division epidemiologist has analyzed results and finds that there is a seasonal uptick in elevated blood lead levels, but it is not unusual compared to previous years. They frequently see elevated levels in the summer, presumably because children are outside more and exposed to dirt which may have elevated levels of lead, windows are opened and closed so the paint is disturbed, etc.
- The EPA conducted tests in Genesee Co. and found that 70 out of 995 samples showed lead levels of 25 parts per billion (the recommended allowable level is no more than 15 parts per billion)
- There's no way to identify exactly what kind of exposure to lead caused those 70 samples to be elevated. In other words, they don't know with certainty that it was due to the water supply situation.
- The Lead program has also been in touch with a CDC public health advisor about the issue

Nancy Peeler, who I gathered is the division director, will be back in the office on Monday. In the meantime, if you have questions, Karen is very helpful.

Mary Ann Baker
WIC Policy Specialist
MDHHS/WIC Program
Consultation and Nutrition Services Unit
Phone: 517-335-0031
Fax: 517-335-8835

On Sep 21, 2015, at 2:02 PM, Lishinski, Karen (DCH) <LishinskiK@michigan.gov> wrote:

Hi Nancy and Brenda,

Just to let you know that Angela Minicucci called and wanted to know if our program did any water testing. Of course I told her "no" and explained that all of the blood lead levels of anyone tested in Michigan come to our office.

She was told by DEQ that we did water testing. I said that HHS may do some on occasion but I do not believe it is part of a standard Lead Investigation/Risk assessment or EBL investigation. She seemed a little frustrated, getting conflicting information.

Karen

From: Peeler, Nancy (DCH)
Sent: Monday, September 21, 2015 2:19 PM
To: Lishinski, Karen (DCH)
Cc: Fink, Brenda (DCH)
Subject: Re: Angela

Were you able to encourage her to speak directly with Healthy Homes to get an answer about what their program does? I understand her frustration, just want to support her as much as possible.

Sent from my iPad

> On Sep 21, 2015, at 10:02 AM, Minicuci, Angela (DCH) <MinicuciA@michigan.gov> wrote:
>
> Hi Eden, could you explain the difference were seeing between our numbers and the DEQ? Or direct me to someone at DHHS who can. Thanks!!
>
> Sent from my iPhone

-----Original Message-----

From: Eden- Umich [mailto:ewells@umich.edu]
Sent: Monday, September 21, 2015 12:58 PM
To: Minicuci, Angela (DCH)
Cc: Dykema, Linda D. (DCH)
Subject: Re: Flint

I have my unofficial opinions- Lynda can you assist???

Sent from my iPhone

----- Forwarded message -----

From: **Dykema, Linda D. (DCH)** <DykemaL@michigan.gov>
Date: Mon, Sep 21, 2015 at 3:49 PM
Subject: RE: Flint
To: Eden- Umich <ewells@umich.edu>, "Minicuci, Angela (DCH)" <MinicuciA@michigan.gov>

It appears that VA Tech has analyzed far more samples than I had thought. The results can be found here <http://flintwaterstudy.org/>. My guess is the difference in the analytical results can be attributed to sample collection protocols, but the city and the DEQ are following the EPA requirements.

Robinson, Mikelle (DHHS)

From: Dykema, Linda D. (DCH)
Sent: Tuesday, September 22, 2015 9:54 AM
To: Lasher, GERALYN (DHHS); Peeler, Nancy (DHHS); Ruest, Karla (DHHS); Madden, Angela (DHHS); Minicuci, Angela (DHHS); Bien, Stan (DHHS)
Cc: Moran, Susan (DHHS); Robinson, Mikelle (DHHS); Fink, Brenda (DHHS); Groetsch, Kory J. (DHHS); Miller, Corinne (DHHS)
Subject: RE: Legislative call

Follow Up Flag: Follow up
Flag Status: Flagged

UPDATE:

Here is a link to the VA Tech study re city of Flint drinking water <http://flintwaterstudy.org/>. There are some presentation links in the lower right. It appears that the researchers have completed testing of a lot of water samples and the results are significantly different than the city and DEQ data. It also appears that they've held public meetings in Flint, resulting in the concerns about the safety of the Flint water that have arisen in the last few days.

I'm talking with Genesee County and the DEQ this afternoon about our outreach efforts and may know more after that call.

Linda D. Dykema, Ph.D.
Environmental Public Health Director
Division of Environmental Health
Michigan Department of Health & Human Services
517.335.8566
dykema@michigan.gov

From: Mona Hanna-Attisha <MHanna1@hurleymc.com>
Sent: Tuesday, September 22, 2015 10:12 PM
To: Scott, Robert L. (DCH); Lawrence Reynolds; Laura Carravallah; Dr. Lawrence Reynolds, M.D.; MVALACAK@gchd.us; Hallwood, Dawn; Henry, James; Jenny LaChance; Holtrop, Teresa
Cc: Peeler, Nancy (DCH); Lishinski, Karen (DCH); Emily Houk (emily@r2pconsultants.com)
Subject: RE: Lead level data
Attachments: Pediatric Lead Exposure Flint Water.pdf

Bob,

I hope you are well and back in the office. Since we have been unable to obtain recent MCIR blood lead data for Flint kids in response to the lead in water concerns, we looked at all the blood lead levels that were processed through Hurley Medical Center from Jan 1, 2013. It turns out that most providers in Genesee county run their leads through our institution. Attached is a presentation that includes our striking pre-water switch (2013) and post-water switch results (2015) for kids less than 5years living in the city of Flint (2.1% EBL to 4.0% EBL). Our pre and post periods included the same months considering the expected seasonal summer increase in lead levels. The results are most concerning for the kids that live in the zip codes where the water lead levels were found to be the highest (2.5% EBL to 6.3% EBL). No statistical change in %EBL for kids out of the city. Similar results were seen for kids less than 15 months. (Please do not share the presentation.)

Our sample size was large and our results were statistically significant; and we followed the same research methods conducted in the literature for similar lead exposures (most notably the DC lead in water issue). However, an even larger sample size which includes MCIR lead data would be very helpful as we continue to advocate for primary prevention. If we do have the MCIR data, for consistency and comparability to published research, we would like to conduct the analysis the same way as our above research. I am available via email or phone (cell [REDACTED]); if you have any questions about our data/methods/results and how best to move forward.

Thanks so much! Mona

Mona Hanna-Attisha MD MPH FAAP

Director, Pediatric Residency Program

Hurley Children's Hospital at Hurley Medical Center

Assistant Professor, Department of Pediatrics and Human Development

Michigan State University College of Human Medicine

Office: 810-262-7257

From: Mona Hanna-Attisha [mailto:MHanna1@hurleymc.com]
Sent: Wednesday, September 23, 2015 10:55 AM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Cc: Lawrence Reynolds <lrey52@gmail.com>; Peeler, Nancy (DCH) <PeelerN@michigan.gov>
Subject: RE: IRBNet Board Action

Thanks. Will do today.

Are you able to look at EBL % as was previously done for the more recent months and for kids less than 5yr?

Mona Hanna-Attisha MD MPH

From: Scott, Robert L. (DCH)
Sent: Wednesday, September 23, 2015 10:57 AM
To: Mona Hanna-Attisha
Cc: Lawrence Reynolds; Peeler, Nancy (DCH)
Subject: RE: IRBNet Board Action

I will ASAP, but still trying to get caught up after being away.

-----Original Message-----

From: Peeler, Nancy (DCH)
Sent: Wednesday, September 23, 2015 9:48 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: Flint

Based on questions coming through, I do think we need to run our Flint charts for the same population group that the Flint docs ran (as close as we can approximate the sample) but I'd look at it across the 5 years again.

Depending on what our charts show, we may want to consider having Epi help us run an analysis more like the docs ran - but let's look at the revised charts as a starting point.

Sent from my iPad

Children Tested for Blood Lead Before and After the Change in Flint's Water Supply

Hurley tests only

(Provider ID = 00000252)

	Children Tested	Children with elevated blood lead levels									
		(Hurley analysis) Children		Venous only				All (V, C, unknown)			
		Tested	Pct >= 6	BLL >= 5	Pct >= 5	BLL >= 6	Pct >= 6	BLL >= 5	Pct >= 5	BLL >= 6	Pct >= 6
January 1 - September 15, 2013	1177	906	2.1	24	2.0	8	0.7	41	3.5	19	1.6
January 1 - September 15, 2015*	966	840	4.0	29	3.0	21	2.2	39	4	28	2.9

All Providers

	Children Tested	Children with elevated blood lead levels							
		Venous only				All (V, C, unknown)			
		BLL >= 5	Pct >= 5	BLL >= 6	Pct >= 6	BLL >= 5	Pct >= 5	BLL >= 6	Pct >= 6
January 1 - September 15, 2013	2380	33	2.8	16	1.4	86	7.3	44	3.7
January 1 - September 15, 2015*	1928	40	4.1	28	2.9	80	8.3	54	5.6

Notes:

Children 0 - 5 years of age

Children living in zip codes 48501 -48507

Source: MDHHS Data Warehouse

September 24, 2015

From: Peeler, Nancy (DCH)

Sent: Wednesday, September 23, 2015 5:33 PM

To: Travis, Rashmi (DCH); Robinson, Mikelle (DCH); Lasher, Geralyn (DCH); Hertel, Elizabeth (DCH)

Cc: Fink, Brenda (DCH)

Subject: Childhood Lead Poisoning Prevention program documents

Importance: High

Hello – I'm going to send a series of emails with materials you have asked for, as a way to organize them.

The first document attached to this email is our CLPPP updated analysis of the blood lead testing data we have for children aged 0-16 in Flint. This is an update from what we sent to the Director's office earlier in the year, in that we added an additional year (2010-2011), and added data for May-August 2015 (per Geralyn's request in an email late last week).

Regarding this data:

- We are using the timeframe of May –April for this chart, because the water source change in Flint happened in April 2014. So, we started by looking at the 12 month time period from May 2014 – April 2015. Then we went back and compared that same time frame to the 4 previous years, to see if the pattern was similar, significantly different, etc.
- We included all children with a Flint address, which may not exactly conform to the city boundaries.
- We only included first time blood lead levels of ≥ 5 mcg/dL, not all subsequent tests a child may have received.
- We included all types of blood samples – venous blood draws, capillary samples, or unknown (e.g. not labeled as venous or capillary). Typically we would point to venous samples as the best, most reliable, but we had many non-venous samples, so to be inclusive added those in.

Looking at the charts, you can definitely see the seasonal impact associated with lead poisoning.

We do NOT see a different pattern of results for the 2014-2015 year, right after the change in water source. That year looks more like the data from 10-11, and 11-12.

For the full 5 years worth of data, testing rates were pretty consistent, so we don't think that is driving the data. However, note that testing levels for May-August 2015 appear to be lower than in the previous 5 years.

The second document I have attached is a presentation sent to us this morning by Dr. Mona Hanna-Attisha, from Hurley Medical Center. She shared this related to her data request that she sent to our program. In scanning it, we noted that she is using different data than we did (by age, by zip code, time frames, which years she included, etc.), so comparing our data chart to her results is like comparing apples and oranges. We have not run any analyses using her parameters. We did note some slides in her document that we might disagree with, for example her statement that water is the primary source of lead (in Michigan, it remains lead paint that is our primary source of lead exposure).

Please let us know if you have questions you have about the data charts we produced. Next email will be some of our program materials, that may be of use in the upcoming outreach effort. Also, Rashmi indicated who I should include on this email, and I trust you will share with others as appropriate.

Nancy

From: Travis, Rashmi (DCH)
Sent: Friday, September 25, 2015 11:15 AM
To: Miller, Mark (DCH) <miller1@michigan.gov>
Subject: FW: Childhood Lead Poisoning Prevention program documents
Importance: High
FYI the PPT from Hurley.

From: Miller, Mark (DCH)
Sent: Friday, September 25, 2015 1:55 PM
To: Dykema, Linda D. (DCH); Priem, Wesley F. (DCH)
Subject: FW: Childhood Lead Poisoning Prevention program documents
Importance: High
FYI. Don't distribute too broadly!

On Sep 25, 2015, at 2:01 PM, Dykema, Linda D. (DCH) <DykemaL@michigan.gov> wrote:

It would appear that the Hurley physicians are looking at just younger children, rather than 0-16 years as did CLPPP.

From: LyonCallo, Sarah (DHHS)
Sent: Friday, September 25, 2015 2:42 PM
To: Dykema, Linda D. (DHHS)
Cc: Miller, Mark (DHHS); Priem, Wesley F. (DHHS)
Subject: Re: Childhood Lead Poisoning Prevention program documents

Yes. We can look at younger as well.

Sent from my iPad

From: [Miller, Corinne \(DCH\)](#)
To: [Robinson, Mikelle \(DCH\)](#)
Cc: [Dykema, Linda D. \(DCH\)](#); [Moran, Susan \(DCH\)](#)
Subject: Re: Flint Water FAQ Document
Date: Wednesday, September 23, 2015 7:06:15 PM

Thanks for the update.

Sent from my iPhone

On Sep 23, 2015, at 5:04 PM, Robinson, Mikelle (DCH) <RobinsonM18@michigan.gov> wrote:

Hi Corinne and Linda,

Geralyn and Elizabeth requested a call with DEQ today in order to brief Nick and respond to some legislative inquiries. Below are my notes from the call that I sent to brief Sue and Mark as well as a Q & A document that DEQ developed and is currently being vetted by the Gov's office. Just wanted to be sure to keep you in the loop on this.

The DEQ PIO (Brad Wurfel) gave a long summary about the Flint water issue. He said bottom line is that the water itself is safe but they have an old water treatment plant and old cast iron pipes that haven't been upgraded in more than 40 years. 15,000 homes have old connections with varying levels of lead. Flint is not in violation of the lead standards however they could optimize the water supply by adding phosphate. Flint is also working on a meaningful optimization plan that will be completed sometime next year. He said that DEQ briefed the Mayor and some legislators on

Monday on the situation. **He said Flint's water supply is not an imminent public health problem but a public confidence problem due to the many groups getting involved and controversial reports/media coverage on it.**

Some data from a local group of Peds is showing an uptick in blood lead levels which seems to contradict the data that CLPP collects. I've asked Rashmi to follow-up with Nancy P on a) the issue of the lead testing that a group of pediatricians did in Flint? b) messaging about lead, where it is found in the environment c) a brief explanation in writing that explains the results from the blood lead tests that Nancy's program has access to. I found the charts a bit hard to read/interpret. d) availability of any local programs that might be relevant, and e) anything else that might be useful for us to share with Genesee CHD. I'll also check with Linda D. on this. *(Linda, any thoughts on what might be useful?)*

DEQ developed a Q & A document that is being reviewed by the Gov's office and they will share with us. They will post this on their website after it is approved. DEQ would like the local health department to get involved in the messaging about what can be done such as running the water before using or get a filtration system. **Mark or I will need to follow-up with H.O. Valacak once we have some suggested talking points and information that can be provided to the public.**

The city owns only the first couple of feet of pipes in connections with homes, the rest is privately owned by the homeowner therefore it would be their expense to replace.

The longer water sits in lead pipes, the higher the lead readings. DEQ's testing protocol produces consistent results across the state and matches the EPA's protocol. There are other areas of the state with the same problem. He estimated it would take \$60 M to replace the city's infrastructure. The city has request \$30 M from the state to help with the situation. The state told them to check with Congress. But we are calling on EPA to assist along with our Congressional delegation.

Brad said they are hoping to have their director submit an op ed to the Flint paper (and perhaps have Nick co-sign) with a message such as lead is a serious issue and there are actions that can be taken to minimize exposure. He wants to coordinate our messaging to align. He will circle back with Geralyn on this. Also, they will be reviewing the various water test results and will look at Flint's water treatment protocols. He cautioned that they are receiving FOIA requests every day.

Let me know if you have questions.

Mikelle

From: Scott, Robert L. (DCH)
Sent: Thursday, September 24, 2015 8:09 AM
To: Peeler, Nancy (DCH)
Subject: RE: Flint

Nancy,

Dr. Hanna-Attisha poked me again this morning about getting the updated charts. Can I send her what I gave you late yesterday, or do you want me to hold off?

Bob

From: Peeler, Nancy (DCH)
Sent: Thursday, September 24, 2015 3:14 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: Re: flint lead powerpoint

Only thought - should we way that if results were being driven by the water supply, we would expect the rate to remain at a higher rate?

Also, I forgot this earlier, probably too in the weeds - Larry Reynolds kept mentioning MCIR data - I don't think they know what our data source is that we use. Should we add any kind of a talking point that says all data included in this analysis is reported directly from labs to MDHHS, in accordance with state law?

If you think it worth adding those, go ahead, and send on to Jennifer. Thanks!

Sent from my iPad

From: Scott, Robert L. (DCH)
Sent: Thursday, September 24, 2015 3:45 PM
To: Peeler, Nancy (DCH)
Subject: one more document, attempt to recreate Hurley
Attachments: Attempt to replicate Hurley.xlsx

Nancy,

Thought I'd pester you one more time. I'm sure this one is not for the public. It's my attempt to recreate Hurley #s. I included EBLL @ 5 & 6 just for comparison, but also looked at Venous-only vs. All types. I used children 0-5 and zip codes 48501-48507 just as Hurley did. I found a difference between the two years, but not as much difference as they did. For some reason I found more children tested than they did.

Let me know if you think it's worth pursuing any farther.

Thanks,
Bob

Robert L. Scott
Childhood Lead Poisoning Prevention Program
Michigan Department of Health & Human Services
(517) 335-8178
fax (517) 335-8509

From: Scott, Robert L. (DCH) [<mailto:ScottR9@michigan.gov>]
Sent: Monday, September 21, 2015 1:21 PM
To: Marc Edwards
Subject: Automatic reply: New DCH-1294, time-sensitive

I'll be out of the office until Wednesday, Sept 23. I'll respond to your message when I return.

From: Marc Edwards [<mailto:edwardsm@vt.edu>]
Sent: Thursday, September 24, 2015 8:14 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: RE: Automatic reply: New DCH-1294, time-sensitive

Dear Robert,

I just spoke to this young researcher at Hurley, and apparently, she has been unable to get access to the state blood lead records.

2

I have to say, it is very disturbing that the state keeps issuing these blood lead reports and statements in their press releases, and refuses to share the data backing them up with outside researchers. Even worse, state reps are running around claiming that these reports are proof that Flint water is safe to drink.

Can you tell me why it is so difficult to get this data, and why your agency is raising so many obstacles to sharing it with everyone who asks? I note that I have been asking to see your data since MDEQ first sent it to reporters back in August, and I count 10 e-mails that I sent responding to all your questions. As of yet, you have given me nothing in response. Yet you have been sending reporters one report after another. It seems your agency is more interested in public relations than sound science.

In the meantime, can I at least be given the numbers of EBL cases and number of tests each month, that are the basis for the latest graph your agency is sending to the press...or is that top secret as well?

Marc

On Sep 25, 2015, at 9:34 AM, Scott, Robert L. (DCH) <ScottR9@michigan.gov> wrote:

Angela or Jennifer,

Please see Dr. Edwards email below, and my draft response to him. I'm not very happy with him right now, but tried to respond appropriately. Given the sensitive nature of the situation, I'm checking with you first. Nancy is on annual leave, but I've CC'd her here.

Is it OK to send this? Please feel free to make changes as appropriate. I'm also asking if it's OK now to share the attached PDF with Dr. Edwards and Dr. Hanna-Attisha.

Thanks,
Bob

Marc,

As you well know, the data you and Dr. Hanna-Attisha are requesting are derived from personal health data, which of course is confidential. There are state and federal laws governing what can be shared, and how, with researchers or the public. In addition, my Department has policies on how to determine what can be shared.

I worked with you earlier this month to get data to you relatively quickly, but did not manage to complete the process before I went on annual leave for several days. I neglected to inform you that I'd be away, and I apologize for not informing you. Unfortunately we are a very small program, and there's no one else here to process your request—or Dr. Hanna-Attisha's.

Since I returned on Wednesday, my time has been largely taken up with my Department's response to the current situation in Flint. I did manage to correspond to Dr. Hanna-Attisha, and provided her with the forms she'll need for her request. I hope to submit her request to our Legal office and to our IRB contact today.

Sorry I haven't responded to your email from Monday—as I mentioned above, I was away, and then have been juggling many tasks since I returned. I think you'll be able to get approval for data with zip code identified. I'll edit your data use agreement accordingly, and will adjust it to say "limited data set" instead of "de-identified." I'll re-submit your DUA to Legal today. You will need to submit an MDHHS IRB review application (attached) because this is considered research. You should also submit a "HIPAA Waiver Request" (attached). (I wasn't aware of that when we talked earlier this month.) I don't know whether you'll need to go through an IRB review with your institution.

I've also attached a PDF that includes the numbers behind the graphs you referred to, and I'm CC'ing Dr. Hanna-Attisha so that she has it as well.

Bob

From: Peeler, Nancy (DCH)
Sent: Friday, September 25, 2015 9:53 AM
To: Scott, Robert L. (DCH)
Cc: Minicuci, Angela (DCH); Eisner, Jennifer (DCH)
Subject: Re: question on email response regarding Flint blood lead data

Bob, I appreciate your efforts to work on this email. I think we can apologize less, and just concisely lay out the steps that have been taken, and need to be taken (which you have). Angela and Jennifer, if you have input that can help shape this, I also would appreciate that help.

Nancy

Sent from my iPad

From: Peeler, Nancy (DCH)
Sent: Friday, September 25, 2015 10:37 AM
To: Scott, Robert L. (DCH)
Subject: Re: question on email response regarding Flint blood lead data

I'm sitting in Zoe's quantum mechanics class, no clue what these differential equations are telling me, but I am stewing a bit about this situation. I want to say that you always do a great job, and are responsive to all data requests, and advocate to help researchers get whatever paperwork completed and turned in. That's why this feels so inappropriate to me - this isn't your fault, thus my earlier comment about apologizing less. And having said that, it probably wasn't a really helpful comment toward revising the response.

The email you received could be read as an intent to escalate and spin things, and I don't think you need to get caught up in that. A calm, fact-based response is very appropriate.

I think your first paragraph is good, but I would remove the last sentence, as I'm not sure what policies you are referencing beyond state and federal law -- and, I think the state and federal law carry enough weight that our departmental policies probably don't change much of anything about the process.

For paragraphs 2 and 3 I think I would just say state the facts, which is that both requests are in process in accordance with departmental policies - because they are. You really don't need to apologize for taking vacation, and I consider anybody's vacation time to be a normal part of doing business - none of us are expected to be at our desks every day, and there is no way to predict what might come up when we are planning to be away.

In your 4th paragraph, it looks like he is changing his data request? I appreciate your generosity in taking on responsibility to do his work for him (editing his paperwork) - your option, whether you want to do that, or request that he re-do it. I would outline the steps, clarify that you have confirmed the process which revealed the extra step, and let him know you'll watch for his response.

Finally, I might close with the piece about a small program, responsible for processing a high number of results every day or week (you sent me a number last week) in order to get them out to the professionals working directly with children and families, which IS the purpose and highest priority of our program.

I hope some of this is helpful and not too late - hope the rest of the day goes better. Thank you for all you do!

From: Scott, Robert L. (DCH)
Sent: Friday, September 25, 2015 10:54 AM
To: Peeler, Nancy (DCH)
Subject: RE: question on email response regarding Flint blood lead data

I agree that his statements are inappropriate; they are plenty of things I'd LIKE to say in response, but won't.

I can make changes according to your comments below, thanks. Should I wait to hear from Angela? Wait a couple more hours?

From: Scott, Robert L. (DCH) [<mailto:ScottR9@michigan.gov>]
Sent: Friday, September 25, 2015 12:44 PM
To: Marc Edwards
Cc: Mona Hanna-Attisha; Peeler, Nancy (DCH); Minicuci, Angela (DCH)
Subject: RE: Automatic reply: New DCH-1294, time-sensitive

Marc,

As you well know, the data you and Dr. Hanna-Attisha have requested are derived from personal health data, which of course is confidential. There are state and federal laws governing what can be shared, and how, with researchers or the public.

I worked with you earlier this month to get data to you relatively quickly, but we did not manage to complete the process before I went on annual leave for several days. I neglected to inform you that I'd be away. I returned on Wednesday and corresponded that day with Dr. Hanna-Attisha, providing her with the forms she'll need for her request.

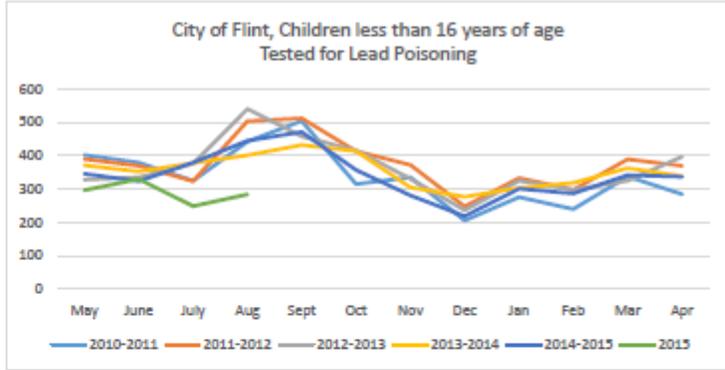
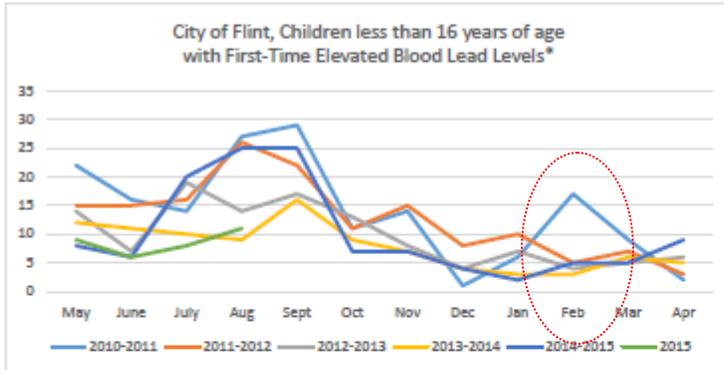
Regarding your email from Monday, I think you'll be able to get approval for data with zip code identified. I'll edit your data use agreement accordingly, will adjust it to say "limited data set" instead of "de-identified," and will re-submit it to our Legal office. You will need to submit an MDHHS IRB review application (attached) because this is considered research. You should also submit a "HIPAA Waiver Request" (attached). (I wasn't aware of the Waiver Request when we talked earlier this month.) Send those documents to me, and I'll pass them on to our IRB contact. I don't know whether you'll need to go through an IRB review with your institution.

In short, both your request and Dr. Hanna-Attisha's are in process in accordance with departmental policies.

I've attached a PDF that includes the numbers behind the graphs you referred to, and I'm CC'ing Dr. Hanna-Attisha so that she has it as well.

Please keep in mind that I work for a very small program responsible for processing several thousand blood lead results every week--in order to get them out to the professionals working directly with children and families, which is the primary purpose and highest priority of our program.

Bob



	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
2010-2011	22	16	14	27	29	11	14	1	6	17	9	2
2011-2012	15	15	16	26	22	11	15	8	10	5	7	3
2012-2013	14	7	19	14	17	13	8	4	7	4	5	6
2013-2014	12	11	10	9	16	9	7	4	3	3	6	5
2014-2015	8	6	20	25	25	7	7	4	2	5	5	9
2015	9	6	8	11								

	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
2010-2011	402	379	325	442	504	315	335	206	276	240	338	285
2011-2012	390	370	324	503	512	413	372	248	333	298	389	370
2012-2013	328	335	376	540	458	416	331	237	325	298	325	397
2013-2014	371	353	378	401	432	414	305	277	304	319	363	339
2014-2015	346	324	379	445	471	357	281	219	301	287	342	337
2015	297	330	249	284								

*Children whose address is listed as "Flint"--may not conform exactly to Flint city limits
 Less than 16 years of age at time of test
 Includes only first-time blood lead levels ≥ 5 ug/dL
 Includes sample type of venous, capillary or unknown

September 23, 2015

Source: MDHHS Data Warehouse, Lead Specimen table

From: Marc Edwards [<mailto:edwardsm@vt.edu>]
Sent: Friday, September 25, 2015 1:00 PM
To: 'Mona Hanna-Attisha'; 'Scott, Robert L. (DCH)'; 'Jenny LaChance'
Subject: RE: Automatic reply: New DCH-1294, time-sensitive

I understand that, and I appreciate what you are doing.

I also hope you can understand my frustration, at seeing this data given to reporters in an relatively unprocessed and unscientific format, used to support a claim that there is not a problem with lead in water in Flint.

And worst of all, seeing it used to “refute” the sound science that Mona did with her in-house data. I know you did not have anything to do with that, but I strongly feel that what is happening is unethical.

I hope you send my message to whoever is abusing the data (and the public trust, and the science method) in this way.

I will be calling the state out on this abuse, as long as it continues. I stand by my statements this is third rate and unscientific science that is being circulated by the state, and your department should have expedited Mona’s requests to get access to the data. I am probably going to step aside and let her handle it from here, and as soon as you get her the data I will stop speaking out. She has proven herself to be a capable researcher.

You should also tell the team that is analyzing the data, that lead in water often peaks in the summer months, and declines in the winter months. It is clear from their one pager that they do not know the first thing about lead in water.

Marc

From: Peeler, Nancy (DCH)
Sent: Friday, September 25, 2015 1:50 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: Re: Automatic reply: New DCH-1294, time-sensitive

Really nice email, thanks!

Sent from my iPad

From: Scott, Robert L. (DCH)
Sent: Friday, September 25, 2015 1:56 PM
To: Peeler, Nancy (DCH)
Subject: RE: Automatic reply: New DCH-1294, time-sensitive

Thanks--he sent a couple of responses that I’ll share on Monday. 😊

I did talk with the reporting, with Angela on the line. Answered some basic questions and didn’t go out on any shaky limbs. The reporter wants to speak with Cristin Larder (maybe Monday—Angela said she knows Cristin), and I’m going to prepare a table of EBLLs by year going as far back as possible, for Flint, plus Detroit and the state for comparison.

From: Marc Edwards [<mailto:edwardsm@vt.edu>]
Sent: Friday, September 25, 2015 1:12 PM
To: 'Mona Hanna-Attisha'; 'Scott, Robert L. (DCH)'; 'Jenny LaChance'
Subject: RE: Automatic reply: New DCH-1294, time-sensitive

Mona,

When you get the data let me know. Since you are involved and have apparently requested the data already (independently), I will not be bothering Robert further.

However, I will be speaking out, about the unethical behavior of the state in not sharing the data to date, and their abusing of power to discredit the work you have done.
The second they give you the data I will stop speaking out.

Robert, I apologize to you because I know you did not have anything to do with it, but what is happening here is just wrong.

Best Regards,
Marc

Pending Data Sharing Agreements

Organization/Individual	Date Initiated	Have I responded?	Status	IRB Status	Date last action	MOU developed?
Center for Urban Studies	6/2/2015	yes	discussed with Colin		7/2/2015	no
ClearCorp	6/4/2015	yes	discussed with Colin		7/2/2015	no
Gazze/MIT	6/3/2015	yes	discussed with Colin		7/2/2015	no
DDD	6/8/2015	yes	discussed with Colin		8/11/2015	no
Moody & Grady, MSU	6/23/2015	yes	resubmitted to Colin		8/25/2015	no
Tanaka/Tufts	8/5/2015	yes	submitted to Colin		8/27/2015	no
McElmurry, WSU	9/8/2015	yes	returned to McElmurry		9/9/2015	no
Edwards, Virginia Tech	9/7/2015	yes				request was with
Hanna-Attisha, Hurley	9/22/2015	yes	Approved	Approved	10/2/2015	no

From: Mona Hanna-Attisha [<mailto:MHanna1@hurleymc.com>]

Sent: Friday, September 25, 2015 12:51 PM

To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>; Marc Edwards <edwardsm@vt.edu>; Jenny LaChance <JLachan1@hurleymc.com>

Subject: RE: Automatic reply: New DCH-1294, time-sensitive

Thanks Bob. We greatly appreciate all your assistance and your hard work!

It's interesting to note that the number of children tested in July and August of 2015 is so small as compared to the same months in previous years? Do you think those numbers capture all the tests that were done – is there a lag time in reporting to your system?

Thanks! Mona

--

From: Scott, Robert L. (DCH) [<mailto:ScottR9@michigan.gov>]

Sent: Friday, September 25, 2015 1:02 PM

To: Mona Hanna-Attisha; Marc Edwards; Jenny LaChance

Subject: RE: Automatic reply: New DCH-1294, time-sensitive

Mona,

There's generally a lag of about two weeks from the date of the test to its being fully processed in our system. A few results take longer, for a variety of reasons. 99% of all results through August should be reflected in those numbers. Not sure why the last few months were so low.

Thanks,

Bob

From: Scott, Robert L. (DCH) [<mailto:ScottR9@michigan.gov>]
Sent: Friday, September 25, 2015 2:15 PM
To: Mona Hanna-Attisha
Subject: RE: Automatic reply: New DCH-1294, time-sensitive

Sorry, here's one more (short) form to fill out and send back to me.

Thanks,
Bob

From: Mona Hanna-Attisha [<mailto:MHanna1@hurleymc.com>]
Sent: Friday, September 25, 2015 2:24 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: RE: Automatic reply: New DCH-1294, time-sensitive

Thanks Bob! We will complete and get back to you soon! Mona

From: Scott, Robert L. (DCH)
Sent: Friday, September 25, 2015 2:42 PM
To: 'Mona Hanna-Attisha'
Subject: need additional info for DCH-1294
Attachments: DCH-1294 Hanna-Attisha.doc

Please see attached. I made a couple of changes:

In 1.3.a. I changed Medicaid record number to "Child ID number," which will serve the same purpose I think—multiple tests for one child will all have the same Child ID number. I removed "primary medical doctor," as I don't have that information. I added "specimen type" (venous or capillary).

In 1.3.b. I changed it to "limited data set" as I think this request falls in that category.

If you don't like those changes, let me know and we can discuss it.

In Section 2.3 ("Use appropriate safeguards...") please describe in detail how you'll keep this data secure.

Then return to me and I'll submit it to our Legal contact. He may still ask for more changes—that's just how this process works.

Thanks,
Bob

From: Mona Hanna-Attisha [mailto:MHanna1@hurleymc.com]
Sent: Friday, September 25, 2015 3:12 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: RE: Automatic reply: New DCH-1294, time-sensitive

Bob, did you ever look at your data that was released for kids less than 5, rather than 16? 16 seems so strange – we rarely do lead levels in kids over the age of 5. Is that what other states do?

Thanks!

Scott, Robert L. (DHHS)

From: Scott, Robert L. (DCH)
Sent: Friday, September 25, 2015 3:45 PM
To: 'Mona Hanna-Attisha'
Subject: RE: Automatic reply: New DCH-1294, time-sensitive

No, I didn't run the data for kids 0-5. We normally would use that age range, and I don't completely recall the conversation that led to using 0-15—possibly trying to cast as wide a net as possible? Of tests for kids 0-15, approximately 10% are for the 6-15 age range.

From: Murray, David (GOV)

Sent: Thursday, September 24, 2015 11:47 AM

To: Lasher, GERALYN (DCH) <lasherg@michigan.gov>; Minicuci, Angela (DCH) <MinicuciA@michigan.gov>; Eisner, Jennifer (DCH) <EisnerJ@michigan.gov>; Wurfel, Brad (DEQ) <WurfelB@michigan.gov>; Agen, Jarrod (GOV) <AgenJ@michigan.gov>; Wurfel, Sara (GOV) <Wurfels@michigan.gov>

Subject: Hurley Hospital's bulletin regarding Flint water

Team,

Here's the media bulletin issued by Hurley Hospital in Flint about the lead blood levels press conference this afternoon. I've reached out to Hurley's communications team, which has promised to send me whatever it has shared with the media on an embargoed basis. I'll forward that as soon as I receive it.

Dave



Contact: Rebecca Jensen
810-262-6143 (office)
989-277-8912 (cell)
rjensen@hurleymc.com
September 24, 2015

Media Alert

FOR IMMEDIATE RELEASE

WHO: **Genesee County Medical Community**, including Hurley Medical Center, Greater Flint Health Coalition, Mott Children's Health Center, Hamilton Community Health Network & Genesee County Medical Society

WHAT: Press conference to address medical community's concerns regarding lead levels in the city of Flint's water supply and appropriate precautionary measures.

WHEN: 3pm, Today, September 24th, 2015

WHERE: Hurley Medical Center, Charles White Conference Center

Media Note: Please enter on the Sixth Avenue entrance and check in with front desk upon arrival to be escorted to the Charles White Conference Center.

Dave Murray

Deputy Press Secretary | Executive Office of Governor Rick Snyder

MurrayD1@michigan.gov

517-335-6397, office

517-449-8343, mobile

Twitter: @michigandmurray



From: "Lasher, GERALYN (DCH)" <lasherg@michigan.gov>

Date: September 24, 2015 at 10:26:52 AM MDT

To: "Lyon, Nick (DCH)" <LyonN2@michigan.gov>, "Grijalva, Nancy (DCH)" <GrijalvaN@michigan.gov>, "Becker, Timothy (DCH)" <beckert1@michigan.gov>, "Minicuci, Angela (DCH)" <MinicuciA@michigan.gov>, "Eisner, Jennifer (DCH)" <EisnerJ@michigan.gov>, "Hertel, Elizabeth (DCH)" <HertelE@michigan.gov>, "Robinson, Mikelle (DCH)" <RobinsonM18@michigan.gov>, "Moran, Susan (DCH)" <MoranS@michigan.gov>

Subject: FW: Hurley Hospital's bulletin regarding Flint water

Mikelle has been told the Genesee Health Department will also be at the press conference today in Flint with the below groups. They have put together a fact sheet on lead and water that they will be sending us this afternoon.

Angela and I have just gotten off the phone with Nancy Peeler and Bob Scott and are putting together talking points about this "study" that the physicians will be discussing that claims an increase in EBL in children since the change to the water system source.

DEQ will be answering the questions as to why the city cannot just switch back to the Detroit system and how that won't solve the problem. We will answer the health questions.

The City of Flint is also issuing a water advisory today to educate residents and has also asked the Governor for \$30 million.

http://www.mlive.com/news/flint/index.ssf/2015/09/flint_will_issue_lead_advisory.html#incart_m-rpt-2

From: Moran, Susan (DCH)

Sent: Thursday, September 24, 2015 1:26 PM

To: Robinson, Mikelle (DCH); Wells, Eden (DCH)

Subject: Fwd: Hurley Hospital's bulletin regarding Flint water

Who is answering the health questions? What did Nancy/ Bob report?

From: Robinson, Mikelle (DCH)

Sent: Thursday, September 24, 2015 2:48 PM

To: Moran, Susan (DCH)

Cc: Wells, Eden (DCH)

Subject: RE: Hurley Hospital's bulletin regarding Flint water

CLPPP is working to review the epi study and will prepare a power point to explain what the results imply. They will work closely with the Corinne/Patty who prepared the first results to ensure validity and the proper discussion of the study. We'll work together on any of the health questions if they haven't already been answered in the fact sheets.

From: Minicuci, Angela (DCH)
Sent: Thursday, September 24, 2015 1:16 PM
To: Peeler, Nancy (DCH); Bien, Stan (DCH); Scott, Robert L. (DCH)
Cc: Eisner, Jennifer (DCH); Lasher, GERALYN (DCH)
Subject: Flint Talking Points
Attachments: Flint Lead TP 092415.docx

Hi everyone,

With the Hurley press event at 3pm, can you please take a look at the following/attached talking points to make sure these are accurate and send me your edits?

Thank you.

-
- The results of the Hurley Children's Hospital are under review by the Michigan Department of Health and Human Services.
 - The analysis that Hurley conducted is different than the way MDHHS collects data regarding blood lead levels.
 - MDHHS is looking to see if we can replicate the results of the Hurley study to see how they achieved their results.

Differences in Analysis

- MDHHS data provides a much more robust picture of the entire blood lead levels for the Flint area, and specifically, accounts for data over the full course of the past five years.
- Looking at the past five years as a whole provides a much more accurate look at the seasonal trends of lead in the area.
- Seasonal exposure is higher in the summer for a variety of reasons including children playing outside in the soil, and when windows are open and lead paint is more likely to be in the air. This seasonal increase would be unrelated to the water system.
- Our data includes children from the entire city, including all medical facilities, rather than just Hurley, has a larger age group of children, and includes a much larger sample size.
- MDHHS data also looks specifically at the first test with elevated blood lead levels which provides a much more accurate picture of when and how first exposure occurred.
- The Hurley data includes a smaller sample size, much more limited time period (January-September of 2013 and 2015 only), and a smaller age group of children.

WIC Children

- For children with elevated blood lead levels that receive WIC benefits, they may be eligible to receive ready made formula with a test result that indicates that the child has an elevated blood lead level.
- WIC cannot cover bottled water.

From: Minicuci, Angela (DCH)
Sent: Thursday, September 24, 2015 1:47 PM
To: Scott, Robert L. (DCH); Peeler, Nancy (DCH); Bien, Stan (DCH)
Cc: Eisner, Jennifer (DCH); Lasher, GERALYN (DCH)
Subject: RE: Flint Talking Points
Attachments: Flint Lead TP 092415.docx

Excellent. Thank you, Bob. I also spoke with Stan. The updated talking points are attached.

Angela

From: Scott, Robert L. (DCH)
Sent: Thursday, September 24, 2015 1:35 PM
To: Minicuci, Angela (DCH) <MinicuciA@michigan.gov>; Peeler, Nancy (DCH) <PeelerN@michigan.gov>; Bien, Stan (DCH) <biens@michigan.gov>
Cc: Eisner, Jennifer (DCH) <EisnerJ@michigan.gov>; Lasher, GERALYN (DCH) <lasherg@michigan.gov>
Subject: RE: Flint Talking Points

Angela,

One suggested change to the second bullet:

"The analysis that Hurley conducted is different from the way MDHHS has analyzed data regarding blood lead levels in Flint."

Another suggestion for the 5th bullet under Differences in Analysis:

"The MDHHS analysis looks specifically at the first elevated blood lead level for each child, which provides an accurate picture of when first exposure occurred."

Thanks,
Bob

From: Minicuci, Angela (DCH)
Sent: Thursday, September 24, 2015 1:16 PM
To: Peeler, Nancy (DCH) <PeelerN@michigan.gov>; Bien, Stan (DCH) <biens@michigan.gov>; Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Cc: Eisner, Jennifer (DCH) <EisnerJ@michigan.gov>; Lasher, GERALYN (DCH) <lasherg@michigan.gov>
Subject: Flint Talking Points

Hi everyone,

With the Hurley press event at 3pm, can you please take a look at the following/attached talking points to make sure these are accurate and send me your edits?

Thank you.

From: Murray, David (GOV)
Sent: Thursday, September 24, 2015 1:56 PM
To: Hollins, Harvey (GOV) <hollinsh@michigan.gov>; Lasher, GERALYN (DCH) <lasherg@michigan.gov>; Minicuci, Angela (DCH) <MinicuciA@michigan.gov>; Eisner, Jennifer (DCH) <EisnerJ@michigan.gov>; Clement, Elizabeth (GOV) <clemente@michigan.gov>; Muchmore, Dennis (GOV) <muchmored@michigan.gov>; Agen, Jarrod (GOV) <AgenJ@michigan.gov>; Wurfel, Sara (GOV) <Wurfels@michigan.gov>; Wurfel, Brad (DEQ) <WurfelB@michigan.gov>; Tommasulo, Karen (DEQ) <TommasuloK@michigan.gov>
Cc: Biehl, Laura (GOV) <BiehlL@michigan.gov>; Brown, Jessica (GOV) <BrownJ53@michigan.gov>; Heaton, Anna (GOV) <HeatonA@michigan.gov>
Subject: Flint lead data

Team,

Here's the data that will be presented at the Hurley Hospital press conference at 3 p.m. As you'll see, they are pointing to individual children, a very emotional approach. Our challenge will be to show how our state data is different from what the hospital and the coalition members are presenting today.

Dave

From: Minicuci, Angela (DCH)
Sent: Thursday, September 24, 2015 2:07 PM
To: Peeler, Nancy (DCH); Scott, Robert L. (DCH); Lasher, GERALYN (DCH); Eisner, Jennifer (DCH); Robinson, Mikelle (DCH); Moran, Susan (DCH); Hertel, Elizabeth (DCH)
Subject: FW: Flint lead data

The Next Steps slide no longer recommends that the city declare a health advisory. It now says 'support city's health advisory'. If Flint will be issuing a health advisory, will Genesee County support this?

Angela

From: Robinson, Mikelle (DHHS)
Sent: Thursday, September 24, 2015 2:27 PM
To: Minicuci, Angela (DHHS)
Cc: Peeler, Nancy (DHHS); Scott, Robert L. (DHHS); Lasher, GERALYN (DHHS); Eisner, Jennifer (DHHS); Hertel, Elizabeth (DHHS); Moran, Susan (DHHS); Miller, Mark (DHHS)
Subject: RE: Flint lead data

Mark Valacak (health officer) informed me that he sent some recommended revisions to the city water department for the advisory and will forward it to me when it is available. So, I assume an advisory is still being planned.

From: "Robinson, Mikelle (DCH)" <RobinsonM18@michigan.gov>
Date: September 24, 2015 at 12:14:09 PM MDT
To: "Lasher, GERALYN (DCH)" <lasherg@michigan.gov>, "Hertel, Elizabeth (DCH)" <HertelE@michigan.gov>
Cc: "Moran, Susan (DCH)" <MoranS@michigan.gov>, "Miller, Mark (DCH)" <millerm1@michigan.gov>
Subject: FW: Env. Health Perspectives on Washington DC. lead in Drinking Water
FYI – on the call with EPA that Wes participated in today.

From: Priem, Wesley F. (DCH)
Sent: Thursday, September 24, 2015 1:31 PM
To: Klevs, Mardi (klevs.mardi@epa.gov); Martig, Anton (Tony) (martig.anton@epa.gov)
Cc: Miller, Corinne (DCH); Robinson, Mikelle (DCH); Dykema, Linda D. (DCH); Groetsch, Kory J. (DCH); Peeler, Nancy (DCH); Scott, Robert L. (DCH)
Subject: FW: Env. Health Perspectives on Washington DC. lead in Drinking Water

Mardi and Tony;

I will be sending you at three emails regarding the Flint lead in water concern. This being the article on the D.C. study an a summary of our meeting. I will also send you a response DEQ has prepared and also the M Live article.

Summary from our meeting this morning:

1. Dialog regarding the DEG Frequently asked questions and there was no objections to the information presented.
2. Discussion on who was taking the lead from the municipalities whether it was the city of Genesee County Health Department. It appears the city and mayor is taking the lead.
3. Local Health Department is working on preparing information for the public
4. Information being prepared from our, State, CLPPP and this information can still be revised to include more information on drinking water.
5. Our Environmental Toxicological Section can provide assistance if needed for the public outreach materials, although the staff person who would do this work is on vacation till next week.
6. CLPPP is working to review the epi study and will prepare a power point to explain what the results imply. They will work closely with the Department's epidemiologist who prepared the first results to ensure validity and the proper discussion of the study.
7. The idea of providing filters to the public was discussed. A call to the National Sanitation Foundation was made to discuss this issue further and determine proper filters.
8. CLPPP can provide EPA with 2013- 2014. See attached. 2015 data-to-date is not yet available but can be later if needed.
9. Our department was informed while we were meeting the Flint advocates along with others are to be holding a press conference at 3:00 today. The advocates are demanding that the water supply revert back to the city of Detroit's drinking water.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1868000/>

Excerpt below with the plan they implemented.

Following the LCR ([U.S. EPA 1991](#)), guidance from the U.S. EPA, consultation with the DC Department of Health, and its own contingency plans, in 2003 the DCWASA implemented plans for families living in homes with lead lines or testing above the LAL:

- Advisories were disseminated recommending that water lines should be flushed for 10 min before consuming drinking water.
- Specific advice for limiting exposure to children < 6 years of age and pregnant and nursing women was sent to all households with suspected lead service lines, in the form of flyers prepared in English, Spanish, Korean, Chinese, Vietnamese, and Amharic.
- Filters were distributed to homes with suspected lead service lines and later to all homes with a test result > 15 ppb (the LAL). Replacement filter cartridges were then sent to the same homes at 6-month intervals for the duration of the period of the exceedance, ending in June 2006.
- The board of directors of the DCWASA decided to adopt a voluntarily accelerated program to replace the public segment of all lead service lines in the District of Columbia, exceeding requirements of the LCR ([U.S. EPA 1991](#)).
- Homeowners were offered replacement of the private segment of lead service lines on their property, at cost, at the same time that the public segments of the lead service lines were replaced. When the public line is replaced but the private line is not, lead levels are reduced proportionally to the length of pipe replaced but not eliminated.
- Low-cost financing was arranged with a local bank for qualifying property owners who wished to replace the private part of the lead service line on their property. The DC government later made grants available to low-income eligible residents for this purpose.
- The DCWASA offered free water testing to any customer in the distribution area who requested it.

<Pages from CLPPP 2013 Data Report.pdf>
<2014 Lead Testing and EBL 0-5 072015.pdf>

From: "Robinson, Mikelle (DCH)" <RobinsonM18@michigan.gov>
Date: September 24, 2015 at 12:14:09 PM MDT
To: "Lasher, GERALYN (DCH)" <lasherg@michigan.gov>, "Hertel, Elizabeth (DCH)" <HertelE@michigan.gov>
Cc: "Moran, Susan (DCH)" <MoranS@michigan.gov>, "Miller, Mark (DCH)" <millerm1@michigan.gov>
Subject: **FW: Env. Health Perspectives on Washington DC. lead in Drinking Water**
FYI – on the call with EPA that Wes participated in today.

From: Moran, Susan (DCH)
Sent: Friday, September 25, 2015 7:52 AM
To: Wells, Eden (DCH)
Subject: Re: Env. Health Perspectives on Washington DC. lead in Drinking Water

Thanks for reviewing and qualifying. And I apologize if unnecessarily asked you to look into this, sounds like all the bases had been covered, that's a good thing.

Sent from my iPhone

On Sep 24, 2015, at 7:01 PM, Wells, Eden (DCH) <WellsE3@michigan.gov> wrote:

Sue,

I need to qualify my thoughts in that this issue (comparing state CLPP to Flint pediatrician data) may have already been discussed with MDHHS epidemiologists, MDEQ and Gov office today--

E

Sent from my iPhone

On Sep 24, 2015, at 8:16 PM, Moran, Susan (DCH) <MoranS@michigan.gov> wrote:

I think this is the state data....

Sent from my iPhone

Begin forwarded message:

From: Groetsch, Kory J. (DCH)
Sent: Thursday, September 24, 2015 1:19 PM
To: Benzie, Richard (DEQ); Bruneau, Michelle (DCH); Busch, Stephen (DEQ); Dawn Hallwood (dhallwood@gchd.us); Dykema, Linda D. (DCH); Henry, James; Houk, Emily (DCH); Lishinski, Karen (DCH); Peeler, Nancy (DCH); Shekter Smith, Liane (DEQ); Valacak, Mark; Wurfel, Brad (DEQ)
Cc: Groetsch, Kory J. (DCH)
Subject: Flint Pb Health Education Conference Call Summary

Hello All,

Below is a summary from our call. Please note the action items. In addition, Karen Lishinski pointed out this EPA website as a good resource: <http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm>

SUMMARY:

A conference call with the attendees listed below occurred on 9/22/2015 discussing lead (Pb) outreach in the city of Flint. The purpose of the call was to facilitate introductions, and identify Pb health education materials, current Pb outreach efforts in Flint and existing resources. DEQ provided a brief background of the drinking water compliance process in relation to efforts being conducted in Flint. Information sharing occurred between attendees about the Pb in drinking water sampling efforts in Flint.

Each agency/department listed their current health education efforts and available resources that could be made available relative to Pb outreach in Flint. The CLPPP provides some limited funding to prosperity region 6 to conduct Pb outreach. CLPPP is building a Pb Tool Kit for providers. Information about Pb in drinking water does not currently exist in these materials, but they are interested to build that information into the tool kit. DEQ has contacts with the Flint's drinking water program. GCHD has been getting many phone calls and they have had to create factsheets about water hardness and trihalomethanes.

Action Items from the Call:

1. Participants will e-mail their Pb outreach materials and presentations that are in current use to Michelle Bruneau (BruneauM@michigan.gov).
2. GCHD will send Michelle a list of concerns they have been getting from the Flint community.
3. Michelle will look over the materials to assess what messages are covered, what messages are not covered, and provide suggestions on what work may need to be done to address gaps.
4. Follow-up is needed on the water sampling directions being provided by the city to homeowners that request a Pb in tap water analysis. (There are two sampling procedures depending on the purpose of the water sample.)
5. Karen Lishinski will provide a contact at WIC, so they can be invited to our follow-up conference call.
6. MDHHS-DEH will arrange a follow-up conference call in approximately two weeks.

Attendees:

Dawn Hallwood (Genesee Co HD)
James Henry (GCHD)
Mark Valacak (GCHD)
Brad Wurfel (DEQ)
Liane Shekter-Smith (DEQ)
Richard Benzie (DEQ)
Stephen Busch (DEQ)

Nancy Peeler (DHHS)
Karen Lishinski (DHHS)
Linda Dykema (DHHS)
Kory Groetsch (DHHS)
Michelle Bruneau (DHHS)

Current plan is to schedule another conference call in two weeks. Clearly, this is a dynamic and evolving situation.

FYI- I am currently in St. Ignace participating in an emergency response exercise.

Best Regards,

Kory Groetsch, MS , Manager
Toxicology and Response Section
Michigan Dept of Health and Human Services (MDHHS)
201 Townsend St.
Lansing, MI 48913
517-335-9935
groetschk@michigan.gov

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From: Miller, Corinne (DCH)
Sent: Thursday, September 24, 2015 4:57 PM
To: Priem, Wesley F. (DCH); Dykema, Linda D. (DCH); Groetsch, Kory J. (DCH)
Subject: embedded powerpoint

This link should take you to an embedded PowerPoint of a Hurley physician study on lead in the Flint drinking water.

http://www.mlive.com/opinion/flint/index.ssf/2015/09/abandon_flint_river_for_drinki.html

Corinne

From: Miller, Corinne (DCH)
Sent: Friday, September 25, 2015 2:49 PM
To: LyonCallo, Sarah (DCH)
Cc: Dykema, Linda D. (DCH); Priem, Wesley F. (DCH); Groetsch, Kory J. (DCH); Peeler, Nancy (DCH); Miller, Mark (DCH); McFadden, Jevon (DCH)
Subject: Re: embedded powerpoint

State epi makes the request for an epi-aid.

Sent from my iPhone

On Sep 25, 2015, at 1:43 PM, LyonCallo, Sarah (DCH) <lyoncallos@michigan.gov> wrote:

Is that process like an epi-aid? where the state health officer makes the request?

Sent from my iPad

On Sep 25, 2015, at 2:21 PM, Dykema, Linda D. (DCH) <DykemaL@michigan.gov> wrote:

I just spoke with Mark Johnson with the ATSDR R5 office in Chicago. As you're probably aware, Sen. Kildee has contacted EPA, CDC, DEQ about lead in Flint drinking water, which is how ATSDR has become involved. Mark suggested MDHHS request an independent CDC review of the EBL data to address the issues raised by the Hurley study.

From: LyonCallo, Sarah (DHHS)
Sent: Friday, September 25, 2015 6:02 PM
To: Miller, Corinne (DHHS)
Cc: Dykema, Linda D. (DHHS); Priem, Wesley F. (DHHS); Groetsch, Kory J. (DHHS); Peeler, Nancy

(DHHS); Miller, Mark (DHHS); McFadden, Jevon (DHHS)
Subject: RE: embedded powerpoint

Whoops! Sorry Corinne!!

From Detroit Free Press (Sep 25, 2015)

Doctor: Lead seen in more Flint kids since water switch

State officials say their own review of blood test results have not shown the same increase that Hanna-Attisha found. Moreover, water tests have similarly shown lead within federally accepted levels, they say.

...

State data show that the percentage of children with elevated blood lead levels have been falling for years. In fact in 2013, 3.6% of Flint children younger than 6 had elevated blood-lead levels, compared with the state-wide rate of 3.9%.

...

In addition to water testing, Wurfel said state public health officials have reexamined results of blood-lead level testing among Flint children. In short, that data doesn't show the same upward trend that Hanna-Attisha's found, he said.

...

Angela Minicuci, a spokeswoman for the Michigan Department of Health and Human Services, any increase in the past year in blood-lead levels among Flint children is attributed to predictable seasonal spikes.

<http://www.freep.com/story/news/local/michigan/2015/09/24/water-lead-in-flint/72747696/>

From: Tanner, Kristi [mailto:ktanner@freepress.com]
Sent: Friday, September 25, 2015 12:16 PM
To: Minicuci, Angela (DCH) <MinicuciA@michigan.gov>
Subject: Flint follow-up

Hi Angela,
Thanks for the feedback yesterday. I took a look at the numbers last night that you sent over and the year over year increase between 13/14 and 14/15 is statistically significant $p < .05$
Can you ask you epidemiologist to confirm? Also, is this the first significant increase that Flint has seen for this cohort?
Thanks!
Kristi
(313) 222-8877 office
(586) 322-2094 cell

Children in Flint, less than 16 years of age, tested for lead

Children with Elevated BLL*			Children Tested**	
May 2010 - April 2011	168	0.043796	May 2010 - April 2011	3,836
2011-2012	153	0.036085	2011-2012	4,240
2012-2013	118	0.028379	2012-2013	4,158
2013-2014	95	0.023691	2013-2014	4,010
2014-2015	123	0.032106	2014-2015	3,831
May - August 2015	34	0.029746	May - August 2015	1,143

*Each child counted only once.

**Some children counted in more than one year.

September 24, 2015
Source: MDHHS Data Warehouse

From: Minicuci, Angela (DCH)
Sent: Friday, September 25, 2015 1:13 PM
To: Scott, Robert L. (DCH); Peeler, Nancy (DCH)
Subject: FW: Flint follow-up
Importance: High

Hi Nancy and Bob,

The Detroit Free Press wants to do a bigger story about the issue of lead in Flint. I made it clear to her yesterday that we could not say the lead poisonings are related to the water, but she instead wants to do a story about the increase of overall lead poisonings in Flint between 12/13 and 14/15. Are either of you available to speak with her today?

Thank you,

Angela

From: Scott, Robert L. (DCH)
Sent: Friday, September 25, 2015 1:19 PM
To: Minicuci, Angela (DCH); Peeler, Nancy (DCH)
Subject: RE: Flint follow-up

Angela,

I'm available today, but I'm no epidemiologist. The best I could say is something like this: "While the trend for Michigan as a whole has shown a steady decrease in lead poisoning year by year, smaller areas such as the city of Flint have their bumps from year to year while still trending downward overall."

Does that sound reasonable?

Bob

From: Peeler, Nancy (DCH)
Sent: Friday, September 25, 2015 1:20 PM
To: Minicuci, Angela (DCH) <MinicuciA@michigan.gov>
Cc: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: Re: Flint follow-up

I think Bob is the best person to speak to them about the lead data, if you are comfortable with that, Bob. My secret hope is that we can work in the fact that this pattern is similar to recent past. :)

Sent from my iPad

From: Minicuci, Angela (DCH)
Sent: Friday, September 25, 2015 1:36 PM
To: Peeler, Nancy (DCH)
Cc: Scott, Robert L. (DCH)
Subject: RE: Flint follow-up

Bob, I like what you had to say. That's basically what I told her, but she wants to hear it from someone other than a spokesperson ☺ Are you available for a call with her?

Angela

From: Marc Edwards [mailto:edwardsm@vt.edu]
Sent: Friday, September 25, 2015 10:08 PM
To: Scott, Robert L. (DCH) (ScottR9@michigan.gov)
Subject: lead in water seasonal

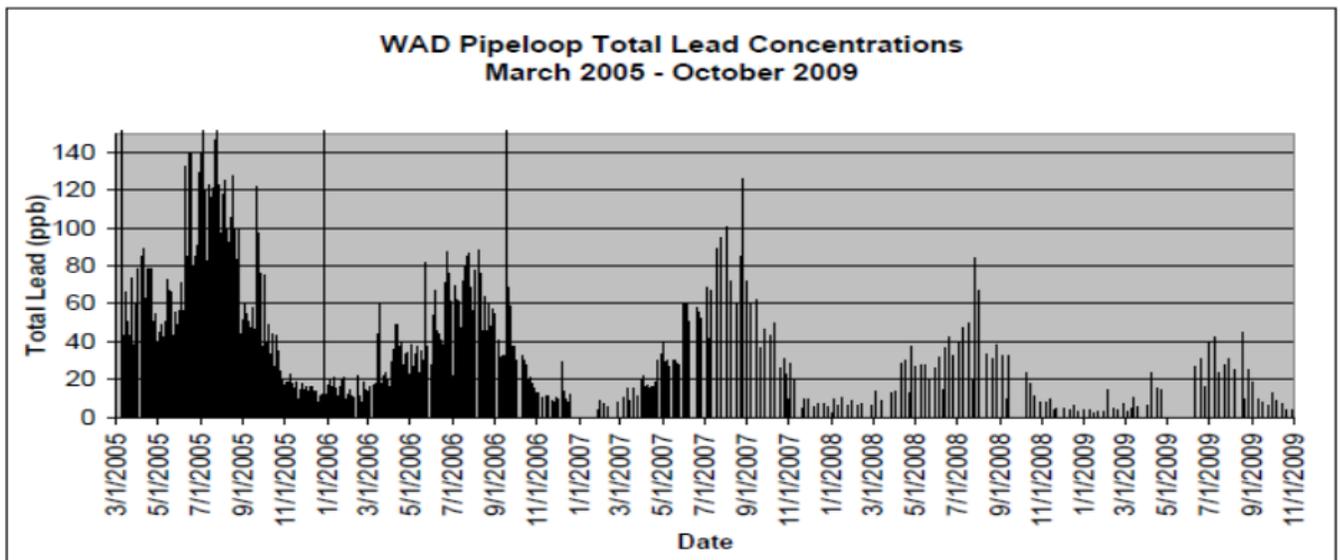
These results are from lead pipe loops run at the Washington Aqueduct in Triplicate....you get the idea.

The correlation with temperature in that system was something like $R^2 = 0.7$ or so.

There are also peer reviewed papers showing that blood lead in summer peaks due to elevated water lead.

Water lead does not have to be constant. This is well known.

Marc



From Detroit Free Press (Sep 27, 2015)

Snyder must act on Flint lead crisis

A spokeswoman for Gov. Rick Snyder wrote in an e-mail that **the Hurley data had been “spliced and diced,”** a suggestion that it’s something other than accurate — even though the state’s own data bolsters the Hurley report.

<http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/09/26/shortfalls-em-law-writ-large-flint-water-crisis/72811990/>

On Sep 27, 2015, at 2:11 PM, Lasher, GERALYN (DCH) <lasherg@michigan.gov> wrote:

We will need help responding to what the Free Press is claiming in this article.

Sue--let us know who can get us this as early Monday as possible.

State data confirms higher blood-lead levels in Flint kids

<http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/09/26/state-data-flint-lead/72820798/>

Sent from my iPad

On Sep 27, 2015, at 5:06 PM, Moran, Susan (DCH) <MoranS@michigan.gov> wrote:

Sorry - hit send too soon.

Copying Lynda and Corrine- not sure who in Epi or CLPPP has been point person on state's data.

On Sep 27, 2015, at 5:20 PM, Wells, Eden (DCH) <WellsE3@michigan.gov> wrote:

Geralyn- were the graphs shown outside of MDHHS?

Sent from my iPhone

On Sep 27, 2015, at 5:26 PM, Lasher, GERALYN (DCH) <lasherg@michigan.gov> wrote:

Yes. We provided the graphs with the narrative bullet points.

On Sep 27, 2015, at 5:34 PM, Wells, Eden (DCH) <WellsE3@michigan.gov> wrote:

Thanks--DFP is looking at tests positive/number of tests done-- not sure that this is a reliable measure used by our program. Await input from Nancy or Linda.

On Sep 27, 2015, at 5:39 PM, Wells, Eden (DCH) <WellsE3@michigan.gov> wrote:

Given not sure what % children tested, etc.

From: "Minicuci, Angela (DCH)" <MinicuciA@michigan.gov>
Date: September 27, 2015 at 9:29:49 PM EDT
To: "Wells, Eden (DCH)" <WellsE3@michigan.gov>
Cc: "Lasher, GERALYN (DCH)" <lasherg@michigan.gov>, "Moran, Susan (DCH)" <MoranS@michigan.gov>, "Peeler, Nancy (DCH)" <PeelerN@michigan.gov>, "Robinson, Mikelle (DCH)" <RobinsonM18@michigan.gov>, "Hertel, Elizabeth (DCH)" <HertelE@michigan.gov>, "Eisner, Jennifer (DCH)" <EisnerJ@michigan.gov>
Subject: **Re: State data confirms higher blood-lead levels in Flint kids**

I've asked our lead epidemiologist to look at the data closer than what was in the charts to get a handle on this. The epi is Cristin Larder.

From: Peeler, Nancy (DCH)
Sent: Monday, September 28, 2015 7:54 AM
To: McKane, Patricia (DCH)
Cc: Fink, Brenda (DCH); LyonCallo, Sarah (DCH)
Subject: Fwd: State data confirms higher blood-lead levels in Flint kids

Good morning Patti, looping you in FYI. Wanted you to be aware of this as Cristins supervisor.

On Sep 28, 2015, at 7:35 AM, Peeler, Nancy (DCH)
<PeelerN@michigan.gov> wrote:

We've also been trying to reach Cristin – it wasn't clear to us whether she knew about this assignment, which this email indicates she does. We appreciate that confirmation. I will pass this info on to Bob Scott. We appreciate if you can please keep Bob, as the CLPPP Surveillance Manager who has extended knowledge about this data, in the loop. He can then update me as needed.

Nancy

From: LyonCallo, Sarah (DCH)
Sent: Monday, September 28, 2015 9:19 AM
To: Fink, Brenda (DCH)
Cc: Peeler, Nancy (DCH); McKane, Patricia (DCH)
Subject: Re: State data confirms higher blood-lead levels in Flint kids

Dear Brenda,

After seeing Gongwer on Friday AM, I contacted Corinne to understand what was going on, Linda Dykema and Angela later pulled in Epidemiology. I come out of environmental health (cut my teeth on superfund site in a politically complex area) and can appreciate sensitivity on multiple fronts, as well as appreciating the analyses of data at the local level (well done).

It would benefit all of us for epidemiology staff to be pulled in as quickly as possible in the future, so that Patti and I can assist Cristin, that we can weigh in on design issues, and we can make sure that we are not at cross purposes when Angela requests a response. Cristin's response will take some time.

Cristin and I discussed an approach on Friday before we received the report from Angela with the updated counts. We will take a look this AM and revise our approach.

From: Peeler, Nancy (DCH)
Sent: Monday, September 28, 2015 10:35 AM
To: LyonCallo, Sarah (DCH) <lyoncallos@michigan.gov>
Cc: McKane, Patricia (DCH) <McKaneP@michigan.gov>; Fink, Brenda (DCH) <FinkB@michigan.gov>; Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: Re: State data confirms higher blood-lead levels in Flint kids

Bob is assembling a list of questions, info he needs to share with/obtain from Epi to do a data pull. Can we get in the same room, perhaps around 11:30 or 12?

From: Scott, Robert L. (DCH)
Sent: Monday, September 28, 2015 10:40 AM
To: Peeler, Nancy (DCH); LyonCallo, Sarah (DCH)
Cc: McKane, Patricia (DCH); Fink, Brenda (DCH); Larder, Cristin (DCH)
Subject: RE: State data confirms higher blood-lead levels in Flint kids

I spoke with Cristin. I have extracted a file from the Warehouse with all tests for Genesee County, age <16, January 1, 2010 – August 31, 2015. I sent the file to Cristin just a few minutes ago.

We talked about which test to use—I had been using the first elevated test (≥ 5 , whether venous, capillary or unknown) and Cristin will probably do the same). Once Cristin has geocoded all records to identify which are in City of Flint and which are out-county, she can then slice and dice them as appropriate.

I'll be happy to help in any way I can.

From: Peeler, Nancy (DCH)
Sent: Monday, September 28, 2015 5:24 PM
To: LyonCallo, Sarah (DCH)
Cc: McKane, Patricia (DCH); Fink, Brenda (DCH); Scott, Robert L. (DCH)
Subject: RE: State data confirms higher blood-lead levels in Flint kids

Thanks, everyone, I understand that Bob and Cristin connected and the work is moving forward.

From: "LyonCallo, Sarah (DCH)" <lyoncallos@michigan.gov>
Date: September 28, 2015 at 7:16:48 PM EDT
To: "Peeler, Nancy (DCH)" <PeelerN@michigan.gov>
Cc: "McKane, Patricia (DCH)" <McKaneP@michigan.gov>, "Fink, Brenda (DCH)" <FinkB@michigan.gov>, "Scott, Robert L. (DCH)" <ScottR9@michigan.gov>
Subject: RE: State data confirms higher blood-lead levels in Flint kids

Nancy

Cristin has been working all day on this. We are working together right now and expect to be doing so for a while this evening. We are committed to getting monthly proportion of tested positive graphic for each region (high risk, other flint, other Genesee) for 0-6 year olds for tomorrow am review by Corinne – we will forward when comfortable it is correct.

To do this, we are having to identify tests on a monthly basis for the denominator, up until (and including) the first incidence of high EBLL in the year. Then remove subsequent tests for that child in the rest of the calendar year. The whole thing starts over the next calendar year. We are in a maze of do-loops right now.

Sarah

From: Peeler, Nancy (DCH)
Sent: Monday, September 28, 2015 10:26 PM
To: Scott, Robert L. (DCH) <ScottR9@michigan.gov>
Subject: Fwd: State data confirms higher blood-lead levels in Flint kids

Does this sound like the process you use, or any tips on how you approach this most effectively?

From: Scott, Robert L. (DCH)
Sent: Tuesday, September 29, 2015 8:45 AM
To: Peeler, Nancy (DCH)
Subject: RE: State data confirms higher blood-lead levels in Flint kids

It seems reasonable to me. The "remove subsequent tests for that child" is a toughy, I'm sure. I don't have any suggestions for making the process any simpler.

I expressed my concern yesterday to Cristin that they are counting EBLL kids again if they show up in a subsequent year. If I understood correctly, it's because they want to avoid any suggestion of undercounting. I'm certainly willing to go with their judgment.

On Sep 28, 2015, at 8:45 AM, Fink, Brenda (DCH) <FinkB@michigan.gov> wrote:

Obviously this is uber high profile---so we just need to be sure we're about the data, which as you and Sarah likely know, is under a lot of scrutiny because some of the local folks have different data (done differently, lots of issues---just this involves people who care deeply about the community, Larry Reynolds who is now on our iM Exec Team, etc) I'm just saying sensitivity to the local people who are so concerned about the babies there based on what they have for data is a context that is important, beyond the high profile and other issues . My comment has nothing to do with the data itself. Just the context of very concerned people. Doesn't impact our data . . . obviously. It's just there's a people side to this issue that sometimes gets lost when something becomes so politicized. Just for us, I guess.

Brenda Fink, A.C.S.W.
Director, Division of Family and Community Health
Michigan Department of Health and Human Services
109 W. Michigan Ave.
Lansing, MI 48933
517-335-8863
Fax: 517-335-8697
finkb@michigan.gov

On Sep 28, 2015, at 9:45 AM, McKane, Patricia (DCH) <McKaneP@michigan.gov> wrote:

I believe Sarah's point was that we should have been brought in before count data was provided to Angela and others and released to the press, not after.
Cristin is well aware of the need to analyze data, now.

From: Wyant, Dan (DEQ)
Sent: Monday, September 28, 2015 7:18 AM
To: Muchmore, Dennis (GOV); Lyon, Nick (DCH); Hollins, Harvey (GOV)
Cc: Wurfel, Sara (GOV); Wurfel, Sara (GOV); Lasher, GERALYN (DCH); Thelen, Mary Beth (DEQ)
Subject: Proposed Press Conference on Flint Drinking Water

Per the ongoing issues in Flint concerning their drinking water, I would offer the following recommendations. Let's discuss.

Recommendation

Press Conference in Flint – Wednesday, Thursday or Friday.

Participants

Mayor of Flint
Dan Wyant – Michigan Department of Environmental Quality
Nick Lyon – Department of Community Health
Susan Hedman – Region 5 Administrator or EPA
Harvey Hollins – Governor's office
Local Public Health Department

Announcement

Federal – State – Local action plan to address Flint Drinking Water

- <!--[if !supportLists]-->1. <!--[endif]-->Governor Snyder names Dr. Eden Wells (DHHS Chief Medical Executive) as Flint drinking water Public Health Advisor.
- <!--[if !supportLists]-->2. <!--[endif]-->All Flint schools water will immediately be tested to ensure that drinking water is safe.
- <!--[if !supportLists]-->3. <!--[endif]-->Advisories will be disseminated recommending citizens flush your cold water pipes, use only water from the cold water tap for drinking, cooking and especially for making baby formula.
- <!--[if !supportLists]-->4. <!--[endif]-->Implementation of fully optimized corrosion controls in the Flint drinking water system.
- <!--[if !supportLists]-->5. <!--[endif]-->Expanded water testing of at risk

properties.

<!--[if !supportLists]-->6. <!--[endif]-->Offer water testing at no cost to Flint residents to assure water is safe.

<!--[if !supportLists]-->7. <!--[endif]-->Convene a safe drinking water “ Technical Review Advisory” to ensure best technology, practices and science is being utilized, including EPA’s expertise and assistance from their Office of Research and Development.

<!--[if !supportLists]-->8. <!--[endif]-->Offer bottled water and premixed formula if test results indicate high levels of lead.

Dan Wyant, Director
Department of Environmental Quality
517-284-6700 (New Number)

From: Dykema, Linda D. (DCH) [<mailto:DykemaL@michigan.gov>]
Sent: Monday, September 28, 2015 12:45 PM
To: edwardsm@vt.edu
Subject: Flint Drinking Water Study
Importance: High

Dr. Edwards,

I am the Director of the Division of Environmental Health with the Michigan Department of Health & Human Services. I'm writing to request information regarding your study protocol and findings for testing for lead in drinking water in the city of Flint. I've been trying to obtain this information from the study web site, but unfortunately the it's not available, perhaps due to the high volume of traffic on the site.

If you can provide this information at your earliest convenience, I'd be very appreciative. As you can imagine, there is intense interest here in your study results. Thanks

Linda D. Dykema, Ph.D.

Environmental Public Health Director

Division of Environmental Health

Michigan Department of Health & Human Services

[517.335.8566](tel:517.335.8566)

dykemaL@michigan.gov

From: Marc Edwards [<mailto:edwardsm@vt.edu>]
Sent: Monday, September 28, 2015 12:52 PM
To: Dykema, Linda D. (DCH)
Subject: RE: Flint Drinking Water Study

Hi Linda, The sampling protocol is posted on the website. We also posted a video that instructs people on how to sample on the website.

Will send you some of the recent data ASAP...we have not posted it yet. Ask if you have any questions!

Best Regards,

Marc

--

From: Dykema, Linda D. (DCH) [<mailto:DykemaL@michigan.gov>]
Sent: Monday, September 28, 2015 1:10 PM
To: Marc Edwards
Subject: RE: Flint Drinking Water Study

Thanks Marc, but your web site is down and I've been assigned by my director to get an understanding of your study ASAP. Could you please send the protocol to me? I can view the video later. I'd also like to understand how you chose the areas and/or homes to sample. Thanks

Linda

--

From: Marc Edwards [<mailto:edwardsm@vt.edu>]
Sent: Monday, September 28, 2015 1:26 PM
To: Dykema, Linda D. (DCH)
Subject: RE: Flint Drinking Water Study

The web site is working fine for us, so please try again.

Use this link.

<http://flintwaterstudy.org/information-for-flint-residents/video-water-sampling-kits-for-lead/>

For the protocol and instructions. I emailed you the results.

The citizens selected the sampling sites to obtain geographical diversity across the city. It was part volunteer in the first part, and then they went door to door to get some representative samples from all zip codes and wards.

They also developed and implemented a protocol to tamper protect the kits from start to finish. Lee-Anne Walters is cc'd above and she could give you the information on the specifics. The goal was to get good geographical representation.

There is also a FAQ page on our website, that explains this and many other questions.

Best Regards,

Marc

--

From: Dykema, Linda D. (DCH) [mailto:DykemaL@michigan.gov]
Sent: Monday, September 28, 2015 1:37 PM
To: Marc Edwards
Subject: RE: Flint Drinking Water Study

Thanks. This link as well as the one I had previously saved are now working again for me.

--

Lead in City of Flint Drinking Water Briefing Document

Prepared by

Dr. Linda D Dykema

The purpose of the city of Flint water sampling is to determine compliance with the drinking water regulations for lead.

- There is no health-based Maximum Contaminant Level (MCL) for lead.
- Lead enters drinking water in the distribution system from corrosion of lead-containing supply lines or plumbing fixtures in a home.
- EPA & DEQ rely on a "treatment approach" to reduce exposures to lead in drinking water.
- The "action level" for lead in drinking water is 15 parts per billion (ppb).
- This is a level the EPA considers attainable by such measures as adjusting the physical characteristics of the water (pH, hardness) that affect the corrosivity of the water.
- The compliance point for lead is the tap water in the homes.
- Water suppliers randomly select homes to be sampled and focus on areas with lead service lines.
- A tap water sample is collected by the resident from a frequently used cold water faucet. DEQ instructs residents to flush the faucet for 5 minutes, then not use it at all for at least 6 hours (but not more than 12) after which the residents collect a first draw sample.
- The first draw sample represents the water that has been motionless (or stagnant) in the home's plumbing for 6-12 hours.
- If more than 10% of the samples collected during any monitoring period is greater than 15 ppb the drinking water system is out of compliance.
- Compliance monitoring is not intended to represent or evaluate human intake of lead.

The purpose of the water sampling conducted by the Virginia Tech Flint Water Study was to characterize lead levels in drinking water in the city of Flint to which people are exposed.

- VA Tech researchers recruited volunteer participants and attempted to sample all areas of the city.
- Tap water samples were collected by the resident from a kitchen or bathroom cold-water faucet.
- Residents were instructed not to use the faucet for at least 6 hours (no pre-flush) then collect 3 samples:
 - a first draw sample, which represents the water that has been motionless (or stagnant) in the home's plumbing for at least 6 hours,
 - a second sample letting the tap run for 45 seconds after filling the 1st bottle, which represents water from the service line proximal to the home, and
 - a third sample letting the tap run for 2 minutes after filling the #2 bottle, which presumably represents water from the service line at a greater distance from the home.
- The visual graphic representations of the VA Tech data are attached.
- First draw samples exceeded 15 ppb in zip codes 48503 (20% of 69), 48504 (18% of 55), 48505 (13% of 48), 48506 (16% of 44), and 48507 (16% of 51).
- Second and third sample results appear to have exceeded 15 ppb as well, but exact percentages cannot be determined from the graphic representations of the data.
- Too few samples were collected from zip codes 48502, 48529, and 48532 to draw conclusions.
- The protocol used by the VA Tech researchers and their results appear to be consistent with their intent to characterize lead levels in drinking water in the city of Flint.

From: Moran, Susan (DCH)
Sent: Monday, September 28, 2015 10:09 AM
To: Lyon, Nick (DCH)
Cc: Robinson, Mikelle (DCH); Wells, Eden (ewells@umich.edu); Hertel, Elizabeth (DCH); Lasher, GERALYN (DCH); Grijalva, Nancy (DCH); Becker, Timothy (DCH); Dykema, Linda D. (DCH); Miller, Corinne (DCH); Anderson, Paula (DCH)
Subject: Re: Proposed Press Conference on Flint Drinking Water

Lynda Dykema is the contact for questions on Virginia Tech/Hurley data.

Sent from my iPhone

On Sep 28, 2015, at 7:52 AM, Lyon, Nick (DCH) <LyonN2@michigan.gov> wrote:

Director Wyant and I agreed this morning to establish a team to look at the recommendations below in preparation for a joint press conference later this week. I did modify one and remove one from his original email. He was suggesting an outside public health advisor. I think it's appropriate that this be our CME so I changed that piece. I volunteered GERALYN, Elizabeth, and Dr. Wells to serve on the team.

The areas where we need more attention are as follows:

- 1) I need an analysis of the Virginia Tech/Hurley data and their conclusions. I would like to make a strong statement with a demonstration of proof that the lead blood levels seen are not out of the ordinary and are attributable to seasonal fluctuations. GERALYN is working on this for me but she needs someone in public health who can work directly with her on immediate concerns/questions. Sue – Please get her a name immediately.

1

-
- 2) I need an understanding of what WIC will pay for and when. We are hearing that the USDA is indicating that premade formula can be provided. Internal WIC staff don't seem to be saying the same things. And there may also be a supply issue. Elizabeth is following up for me on this.
 - 3) Elizabeth will also follow up with Terry Beuer to see what FNS will pay for on the food assistance side, or if there are other programs that may cover water or premade formula.
 - 4) I think we did a good job getting the local public health department involved and I ask that we work in concert with him. The recommendation is that they be included in the press event this week.

We need immediate action on these. I have a follow up phone call early this afternoon. I also ask that any requests coming from the team be treated with great urgency. The expectation is that we will get on top of this and provide leadership on the issue.

Nick

From: Valacak, Mark
Sent: Monday, September 28, 2015 1:57 PM
To: 'Miller, Mark (DCH)'; 'TravisR@michigan.gov'
Subject: RE: State lead testing results???

Mark & Rashmi,

I want to know whether you have confirmed with the lead program staff at MDHHS that the state results that purport that lead levels have not shown a significant increase since the changeover of the water supply for the city of Flint indeed represent Flint city zip codes only and not Flint mailing addresses. As I mentioned to you both this morning, Flint mailing addresses would include outlying areas like Flint and Mundy Townships which obtain their water from the Detroit Water Authority.

Mark Valacak, MPH, Health Officer

From: Valacak, Mark [<mailto:MVALACAK@gchd.us>]
Sent: Tuesday, September 29, 2015 9:23 AM
To: Miller, Mark (DCH) ; Travis, Rashmi (DCH)
Subject: RE: State lead testing results???

Any results yet? If not can you give me a timeline when you will have results?

Mark Valacak, MPH, Health Officer

From: Miller, Mark (DHHS)
Sent: Tuesday, September 29, 2015 9:44 AM
To: Valacak, Mark
Cc: Dykema, Linda D. (DHHS); LyonCallo, Sarah (DHHS); Travis, Rashmi (DHHS)
Subject: FW: State lead testing results???

Mark, I have a call with Epi staff today at 4 PM. So I'll get an update at that time. I've also cc:ed Linda Dykema and Sara Lyon-Callo, who might be able to respond sooner with a timeline.

From Detroit Free Press (Sep 29, 2015)

State data confirms higher blood-lead levels in Flint kids

Data that the State of Michigan released last week to refute a hospital researcher's claim that an increasing number of Flint children have been lead-poisoned since the city switched its water supply actually supports the hospital's findings, a Free Press analysis has shown.

Worse, prior to the water supply change, the number of [lead-poisoned kids in Flint, and across the state, had been dropping](#); the reversal of that trend should prompt state public health officials to examine a brewing public health crisis.

...

The new blood-lead level report documents the most serious health hazard posed since the switch.

<http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/09/26/state-data-flint-lead/72820798/>

From: Scott, Allison (GOV)

Sent: Tuesday, September 29, 2015 10:45 AM

To: Muchmore, Dennis (GOV); Clement, Elizabeth (GOV); Agen, Jarrod (GOV); Wyant, Dan (DEQ); Lyon, Nick (DCH); McBride, Bill (GOV)

Cc: Thelen, Mary Beth (DEQ); Grijalva, Nancy (DCH); Wisniewski, Wendy (GOV)

Subject: FLINT WATER - MEETING TODAY

Importance: High

You will be receiving a meeting notice from Beth Emmitt for a meeting with the Governor this afternoon. Listed below are areas that we should provide him an update on engagement; if not yet engaged, then we need to engage asap.

1. Emergency management – similar to disasters, is there some form of action we can engage for this situation to help manage
2. Chief Medical officer – should be speaking with Hurley
3. WIC – re water and formula – status update
4. Drain commissioner – how do we expedite KWA

Looking at a 1 pm meeting – let me know if you have questions on the above

From: Mona Hanna-Attisha [mailto:MHanna1@hurleymc.com]
Sent: Tuesday, September 29, 2015 12:25 PM
To: Wells, Eden (DCH)
Subject: Prelim GIS results6

Dr Wells, thanks for the phone call. I appreciate your reaching out. Below is our most recent analysis looking more specifically at the City of Flint and focusing on wards/neighborhoods via GIS analysis. This is very preliminary, but even more frightening. Our next steps include overlaying this with the locations of lead service lines.

I would appreciate your efforts to expedite our data request for the raw data so that we can run similar analysis with your larger sample size. Thanks again, and let me know if I can be of any assistance. Mona

Updated Findings:

Using GIS (Geographic Information System) map technology, we have further analyzed our blood lead level data. Our initial analysis examined children living in Flint zip codes, 48501-48507; however, this included households receiving non-Flint water. Our refined GIS-based analysis now includes only those households who receive water from the City of Flint.

The results reveal an even greater increase in the percentage of children with elevated blood lead levels (EBL). Pre-switch, the proportion of children with EBL was 2.4%, and post-switch the proportion was 4.9% ($p=0.019$). This is compared with our initial zip code-based analysis that showed pre-switch 2.1% and post-switch 4.0% ($p=0.025$). Once again, the change in non-Flint EBL% was not statistically significant.

Preliminary GIS analysis has identified certain areas within the city limits that experienced the greatest rate of EBL% increase. Specifically, we found the greatest increases in wards 5 and 6 (particularly in neighborhoods near Dupont St between University Ave and Pasadena Ave); the EBL% more than **tripled** in these wards. In ward 5, the EBL % increased from 4.9% to 15.7% ($p=0.038$). The area of intersection between wards 3, 4, and 5 (in the east side of the city) also appeared high. Lastly, ward 7 had high pre and post-levels EBL% above 5% (specifically in the western portion of the ward).

Of note, our results continue to correlate with the high water lead levels from the Virginia Tech samples. Most notably, the high percentage of EBL% in wards 5, 6, and 7 also correspond with the high water lead levels in wards 5, 6, and 7.

Mona Hanna-Attisha MD MPH FAAP
Program Director Pediatric Residency
Hurley Children's Hospital at Hurley Medical Center
Michigan State University College of Human Medicine
Department of Pediatrics and Human Development
Mhanna1@hurleymc.com

On Sep 29, 2015, at 2:59 PM, Wells, Eden (DCH) <WellsE3@michigan.gov> wrote:

Hi Mona,

Quick question--

We hope to get prelim data analysis results starting this afternoon-confirmed likely in next day or so----not sure when you may be going public with the GIS but do you think will be before then? Or are you doing the overlay now? Hoping for coordination of "apples"--I have followed-up on your data request.

From: Mona Hanna-Attisha <MHanna1@hurleymc.com>

Sent: Tuesday, September 29, 2015 5:35 PM

To: Wells, Eden (DCH)

Subject: Re: Prelim GIS results

Thanks Eden.

Looking forward to seeing your analysis.

Our intent has never been to go public with anything. However, when we noticed our findings and the glaring correlation to elevated water lead levels in the same locations and learned that corrosion control was never added to the water treatment, we ethically could not stay silent. In addition, your annual EBL% supports our findings - annual decrease (as seen nationally) and then an increase post-water switch. We also knew that releasing our data would only incite a data war; however, the more we dig, the more alarming the results. (Do you know GM stopped using flint river water because it was too corrosive on their parts??? That should have alerted us to its effect on lead pipes.)

So as of now, no plans to release anything to public, although we did share some of the high risk location info to identify priority response areas (bottled water, filters, etc).

Lastly, the state lead screening programs underestimate risk from lead in water. Infants on formula are most at risk yet we screen when they are developmentally likely to be exposed from lead from household sources (paint, dust, soil, etc). Lead levels could have peaked at 4 months and dropped by 12 months.

Finally, we do hope we can receive our data request soon so we can do the exact same analysis.

Thanks and sorry for the long email. Mona

Mona Hanna-Attisha MD MPH FAAP
Director, Pediatric Residency Program
Hurley Children's Hospital
Michigan State University

From: Wells, Eden (DCH) [WellsE3@michigan.gov]

Sent: Tuesday, September 29, 2015 5:58 PM

To: Mona Hanna-Attisha

Subject: Re: Prelim GIS results

Good evening, Mona,

I am looking forward to our results as well.

I certainly understand your role and the need to address the problem you identified; as physicians, our ethical and professional vows to care for and prevent harm to our patients is paramount. No need for data wars- I think we are all just trying to be sure, as you and I said earlier, that we are comparing the same data the same way- "apples to apples".

Your point about water versus household sources is important, because that is certainly one of the issues here--how to identify what potential sources of lead are responsible for EBLs in children, particularly in the CLPP database. Household (paint) is the most common culprit--- (this one contributes most to the seasonality), and need to get the best analysis of the data that can look at the association to potential water sources. More to follow!

I will follow-up in AM with our IRB folks and be sure they know that we have a wish to expedite--not sure how long the process is but will get an estimate.

Eden

Eden V. Wells, MD, MPH, FACPM
Chief Medical Executive
Michigan Department of Health and Human Services
201 Townsend Street, 5th Floor CVB
Lansing, MI 48913
Phone: [517-335-8011](tel:517-335-8011)
wellse3@michigan.gov

On Sep 29, 2015, at 6:50 PM, Mona Hanna-Attisha <MHanna1@hurleymc.com> wrote:

FYI in regards to seasonality, summer is also the peak for lead in water. Lots of literature regarding this, see attached article - most notably fig 3 which predicts the percentage of EBL in summer due to lead in water.

Mona Hanna-Attisha MD MPH

Director, Pediatric Residency Program

Hurley Children's Hospital at Hurley Medical Center

Assistant Professor, Department of Pediatrics and Human Development

Michigan State University College of Human Medicine

Office: [810-262-7257](tel:810-262-7257)

mhanna1@hurleymc.com

<season water lead article.pdf>

On Sep 29, 2015, at 7:41 PM, Wells, Eden (DCH) <WellsE3@michigan.gov> wrote:

Thank you- and yes-was discussing this earlier, as regardless, it may be difficult to quantify the contribution of potential sources of lead in the environment to aggregate EBL cases- ---old houses in old cities with paint and soil contaminations also have old lead service lines...

Will be interested to see if our data shows the pre and post findings as yours, as temporality important.

Eden

Sent from my iPhone

On Sep 29, 2015, at 7:43 PM, Mona Hanna-Attisha <MHanna1@hurleymc.com> wrote:

Yes I agree. That is why we chose the same pre and post time periods to control for the natural seasonal variations.

Mona Hanna-Attisha MD MPH FAAP

Director, Pediatric Residency Program

Hurley Children's Hospital

Michigan State University

On Sep 29, 2015, at 12:58 PM, Wells, Eden (DCH) <WellsE3@michigan.gov> wrote:

Dr. Hanna-Attashi sent me some prelim GIS findings they have---says they look "even more scary". Want so see them---I am hesitant to send to other as they need to work on current issues.

I talked to Dr. Hanna-Attashi as well as Dr. Reynolds, letting them know I appreciate their work on behalf of their patients and that we can work together to address this ph issue

E

From: Miller, Corinne (DCH)
Sent: Tuesday, September 29, 2015 1:00 PM
To: Wells, Eden (DCH)
Subject: Re: Hurley GIS results

Good!

Sent from my iPhone

From: Sandlin, Mary [<mailto:MSANDLIN@gchd.us>]
Sent: Tuesday, September 29, 2015 11:55 AM
Subject: Public Health Advisory
Importance: High

Mary E. Sandlin
Clerical Coordinator
Genesee County Health Department
630 S. Saginaw Street, Suite 4
Flint, MI 48502-1540
[\(810\) 257-3812](tel:(810)257-3812) FAX: [\(810\) 257-3147](tel:(810)257-3147)
msandlin@gchd.us

From: Minicuci, Angela (DCH)
Sent: Tuesday, September 29, 2015 11:59 AM
To: Lasher, Geralyn (DCH) <lasherg@michigan.gov>
Subject: FW: Public Health Advisory
Importance: High

Last paragraph, last page.

Angela

From: Lasher, Geralyn (DCH)
Sent: Tuesday, September 29, 2015 12:06 PM
To: Wells, Eden (DCH); Miller, Corinne (DCH); Moran, Susan (DCH); Robinson, Mikelle (DCH); Dykema, Linda D. (DCH); LyonCallo, Sarah (DCH); Hertel, Elizabeth (DCH); Peeler, Nancy (DCH); Travis, Rashmi (DCH); Miller, Mark (DCH)
Cc: Minicuci, Angela (DCH); Eisner, Jennifer (DCH); Grijalva, Nancy (DCH)
Subject: FW: Public Health Advisory
Importance: High

And Genesee County and the Genesee County Health Department, have just issued the attached public health advisory and on the final paragraph it says:

Recent data provided by Hurley Hospital researchers has indicated that a significant increase in blood lead levels has occurred in children since the switch to Flint River water. The county Health Officer has requested that the Michigan Department of Health and Human Services (MDHHS) provide to the County specific data to support its claim that state data is more comprehensive and does not show a significant increase. To date, the MDHHS has failed to confirm the geographic area included in their findings. We want to assure the state data is specific to the boundaries of the City of Flint, and not Flint addresses which would include addresses in areas outside of the City of Flint. These areas, such as Flint Township, that obtain their water from the Detroit Water Authority and would therefore not be representative of Flint River water as the water source. The County is prepared to take further action if the State fails to provide the requested data by September 30, 2015. Further action could include a request for outside independent evaluation of the data and to declare a Public Health Emergency in Flint.

I understand that we are still reviewing the data—but the county has basically issued a ransom date that they want this information by tomorrow.

Eden—please coordinate an answer so Nick can walk into the 1:00 p.m. meeting prepared on this.

From: Peeler, Nancy (DHHS)

Sent: Tuesday, September 29, 2015 4:39 PM

To: Lasher, GERALYN (DHHS); Wells, Eden (DHHS); Miller, Corinne (DHHS); Moran, Susan (DHHS); Robinson, Mikelle (DHHS); Dykema, Linda D. (DHHS); LyonCallo, Sarah (DHHS); Hertel, Elizabeth (DHHS); Travis, Rashmi (DHHS); Miller, Mark (DHHS)

Cc: Minicuci, Angela (DHHS); Eisner, Jennifer (DHHS); Grijalva, Nancy (DHHS)

Subject: RE: Public Health Advisory

Curious whether they issued the same thing to Hurley, as their analysis sample (based on zip codes 48501-48507) also appears to extend beyond the city geographic boundaries, into Townships that are on Detroit water?

From: Scott, Allison (GOV)

Sent: Tuesday, September 29, 2015 10:45 AM

To: Muchmore, Dennis (GOV); Clement, Elizabeth (GOV); Agen, Jarrod (GOV); Wyant, Dan (DEQ); Lyon, Nick (DCH); McBride, Bill (GOV)

Cc: Thelen, Mary Beth (DEQ); Grijalva, Nancy (DCH); Wisniewski, Wendy (GOV)

Subject: FLINT WATER - MEETING TODAY

Importance: High

You will be receiving a meeting notice from Beth Emmitt for a meeting with the Governor this afternoon. Listed below are areas that we should provide him an update on engagement; if not yet engaged, then we need to engage asap.

1. Emergency management – similar to disasters, is there some form of action we can engage for this situation to help manage
2. Chief Medical officer – should be speaking with Hurley
3. WIC – re water and formula – status update
4. Drain commissioner – how do we expedite KWA

Looking at a 1 pm meeting – let me know if you have questions on the above

SARA ③ Will have by tomorrow AM (9/28)

- A regression, and stratifier
- Gg < 6 and ?
- High Risk
- Scan
- Flint only
- Hertz was year pre & year post
- Will have trends

② WES: EBL Investigations (6 Houses) ^{Done by WES's staff}
(DC did investigation in all houses & leads to elevated lead levels)

~~9/29 4PM~~

LSAO 9/30 4PM
Data

NP - Nancy P. SAO CDC might have had issue in V of V.

LD - Risk Cup - All sources need to be addressed - especially since 90% are caused by Lead Paint

SW - 1st Pass - Data description
- Person Progression - (Exclude

Subject	FW: Discrepancies
From	Mona Hanna-Attisha
To	Wells, Eden (DCH)
Sent	Tuesday, September 29, 2015 1:07 PM

Dr Wells, in regards to the discrepancy noted in state data. Attached are two PDF files that were sent regarding the state lead numbers.

The original PDF was sent on 9/15/15 to Dr Reynolds from Bob Scott from MDHHS's Childhood Lead Poisoning Prevention Program and the updated PDF was sent to me from Bob Scott last Friday.

The attached excel database (that I created) has two tabs that include the original and updated

New Section 1 Page 1

numbers. Yellow highlights are all the numbers that changed. It is very strange how many of the numbers have changed. I'm not sure if the updated numbers tried to refine the location to Flint proper???

The analyses of the data does not change very much (when you look at total annual EBL%) - there has been a statistically significant increase in EBL% since water change (2014-2015) where every year prior there has been a decrease (as has happened nationally). And this does not even include the fact that the data is not scientific - wrong age range and missing lots of EBLs by using first time lead analysis rather than highest lead.

Just thought the discrepancy was odd.

Mona Hanna-Attisha MD MPH FAAP
Program Director Pediatric Residency
Hurley Children's Hospital at Hurley Medical Center
Michigan State University College of Human Medicine
Department of Pediatrics and Human Development
Mhanna1@hurlevmc.com

From: Peeler, Nancy (DCH)
Sent: Tuesday, September 29, 2015 3:54 PM
To: Wells, Eden (DCH)
Cc: Miller, Corinne (DCH); Lasher, GERALYN (DCH); Hertel, Elizabeth (DCH); Scott, Robert L. (DCH)
Subject: RE: TIME SENSITIVE: Fw: Discrepancies
Importance: High

Bob went back and looked at his numbers.

For the first chart, with the elevated blood lead levels, he found one number in the 2014-2015 row that changed, and he confirmed that the data in the later version was correct (the version dated September

New Section 1 Page 8

23).

In the second chart, showing testing numbers, use the one dated September 23rd. That chart shows unduplicated tests (e.g. one test per child, per month), whereas the previous version did count some 'duplicate' tests.

I have copied Bob on this email, in case you have further questions.

I'd also like to ask for clarification on one of GERALYN's earlier emails today; Bob (CLPPP) had produced these descriptive charts – but it looked like Dr. Wells is asking Corinne to do that instead of CLPPP (it was a request to re-do the chart with only younger children included). Trying not to duplicate efforts, so please clarify if you would like us to do that, or someone else. Thanks!

Nancy

From: Miller, Corinne (DCH)
Sent: Tuesday, September 29, 2015 5:44 PM
To: Peeler, Nancy (DCH)
Subject: RE: TIME SENSITIVE: Fw: Discrepancies

Nancy,

We are attempting to replicate to the degree possible Hurley data, stratifying into high risk Flint, other Flint and non-Flint, ages < 16 months, < 6 years, and < 16 years. The data includes more than just Hurley-related testing of course.

Corinne

> On Sep 30, 2015, at 7:26 PM, Wells, Eden (DCH) <WellsE3@michigan.gov> wrote:

>

> Nancy another question I think as we do our talking points how would you best like to address the issue of the 04 ZIP Code I think perhaps if we make a note that this ZIP Code is only partially said by the Flint River this does not negate the fact that children should be sure in this area to decrease their wrist for all sources of lead if questioned further then I would perhaps bring up that well I don't know what I would do, thoughts welcome. Sorry I am dictating

>

> Sent from my iPhone

Subject	Re: ZIP Codes
From	Peeler, Nancy (DHHS)
To	Wells, Eden (DHHS)
Cc	Travis, Rashmi (DHHS)
Sent	Wednesday, September 30, 2015 9:27 PM

Short term, yes, I agree with that approach. I asked about it because the issue of including data for children outside of the city limits was specifically raised by the Genesee County Health officer, and specifically cited in the public advisory released by the Genesee County Commissioners. They appeared to use that issue to discredit the state data (in essence, implied that our results were artificially low because we included children living in areas that are still on Detroit water, thus our results were not valid or true). My concern is whether they will do that again. I agree that full disclosure is best, and also indicating that this is the same/parallel analysis approach that Hurley took for their report.

Longer term, I think the improvement strategy is to see what it will take to geocode the data, so that we could work more easily with boundaries other than zip code, county, etc. I know Bob has looked into that and can do it, but he would need to refresh my memory for what resources it would take to make this a regular part of the data set.

From: Lishinski, Karen (DHHS)
Sent: Thursday, October 01, 2015 11:41 AM
To: Peeler, Nancy (DHHS)
Subject: RE: more follow up from morning meeting

Yes- to some extent I log most of my calls.

From Flint since the beginning of the year-

Feb- 2 calls from [REDACTED] about her son's lead level ([REDACTED])

March- 1 call from [REDACTED]

May-1 call from [REDACTED]

August- dad from Flint re: his 16 year old son who was lead poisoned as a toddler in Detroit

September- Dr. Mona Attisha & Dr Reynolds requesting data- And then an occasional call from [REDACTED] - I have had virtually no calls from the public about the water situation!

From: Peeler, Nancy (DHHS)
Sent: Thursday, October 01, 2015 11:26 AM
To: Lishinski, Karen (DHHS); Scott, Robert L. (DHHS)
Subject: more follow up from morning meeting

For Karen - Are you still logging the lead calls you receive? It was requested this morning that we log the calls from Flint (to understand how many we are getting), and what the questions are. And, can you give me a summary, best you can remember, about calls you've had so far? So:

--number of calls

--topics of the calls/questions received

For both, the timeline on the press release is shifting as additional analyses are conducted. All information is embargoed at this point.

Bob, just saw the email about the IRB, thanks for the update!

Sent from my iPad

From: MDHHS-IRB <MDHHS-IRB@michigan.gov>
Date: October 1, 2015 at 5:48:37 PM EDT
To: "Scott, Robert L. (DHHS)" <ScottR9@michigan.gov>
Cc: "Travis, Rashmi (DHHS)" <TravisR@michigan.gov>, "mhanna1@hurleymc.com" <mhanna1@hurleymc.com>
Subject: MDHHS IRB Approval - 201509-11-EA

Please see the attached determination notice indicating MDHHS IRB approval of your research project for a period of 1 year. A hard copy of this notice will be provided to the Responsible MDHHS Employee. This IRB approval is for the study protocol, IRB application, and the most recent version of study documents in the form submitted to the IRB. Please see the comment section of the determination notice for specific requirements or additional details (if any) related to this approval. Any changes to the protocol or approved study documents must be reviewed and approved by the MDHHS IRB prior to implementation unless those changes are necessary to eliminate apparent immediate hazards to study subjects.

Any severe adverse events or unexpected problems involving risks to research subjects must be reported to the MDHHS IRB as soon as possible (usually within 48 hours of discovery).

Prior to the time this IRB approval expires, a report on the status of this research should be submitted to the MDHHS IRB to facilitate continued MDHHS IRB approval, or study closure.

Don't hesitate to contact the MDHHS IRB with any questions or concerns.

Ian A. Horste, MPH
Institutional Review Board Administrator/Chair
Michigan Department of Health and Human Services
517-241-0806
www.michigan.gov/irb

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From: Mona Hanna-Attisha [mailto:MHanna1@hurleymc.com]
Sent: Thursday, October 01, 2015 6:25 PM
To: Wells, Eden (DHHS)
Subject: Fwd: MDHHS IRB Approval - 201509-11-EA

Thanks for helping expedite the IRB approval. I just got the below email. Now I look forward to receiving the data. I have contacted Bob on how to go about doing that. Greatly appreciated.

Any news on your analysis yet?

Mona Hanna-Attisha MD MPH FAAP
Director, Pediatric Residency Program
Hurley Children's Hospital
Michigan State University

From: Peeler, Nancy (DHHS)
Sent: Thursday, October 1, 2015 6:20 PM
To: Wells, Eden (DHHS)
Cc: Travis, Rashmi (DHHS); Fink, Brenda (DHHS); Colston, Leslie (DHHS)
Subject: FW: MDHHS IRB Approval - 201509-11-EA

Hi – the IRB approval for Hurley came through late today (5:48pm), and they are asking for the data file (5:52pm).

Dr. Wells, you asked us to coordinate with you on this request, look forward to hearing back from you about next steps.

Nancy

On Oct 1, 2015, at 8:20 PM, Wells, Eden (DHHS) <WellsE3@michigan.gov> wrote:

Governor's Communication Plan states data not to be shared with HURLEY/LHD until I call her/them before 1:30 press conference(about 1 PM) Once Press conference starts at 1:30, that would be fine, I would think!!!!

From: Travis, Rashmi (DHHS)
Sent: Friday, October 02, 2015 6:31 AM
To: Wells, Eden (DHHS)
Cc: Peeler, Nancy (DHHS); Fink, Brenda (DHHS); Colston, Leslie (DHHS)
Subject: Re: TIME SENSITIVE:: MDHHS IRB Approval - 201509-11-EA

Eden

Ok we will wait. Please let us know status after the press conference in ok to share data.

Thanks
Rashmi

From: Scott, Robert L. (DHHS)
Sent: Thursday, October 01, 2015 6:52 PM
To: Peeler, Nancy (DHHS)
Subject: table and map

Robert L. Scott
Childhood Lead Poisoning Prevention Program
Michigan Department of Health & Human Services
(517) 335-8178
fax (517) 335-8509

From: Peeler, Nancy (DHHS)
Sent: Thursday, October 01, 2015 7:03 PM
To: Wells, Eden (DHHS)
Cc: Travis, Rashmi (DHHS); Fink, Brenda (DHHS)
Subject: FW: table and map
Importance: High

Good evening –

Here is the surveillance data you requested about lead testing for the past year, and for the 5-year period.

We have included a table that includes highest level for each child, broken out by Confirmed Venous tests and Not Confirmed Capillary samples. The capillary samples represent an opportunity for improvement by the primary care providers, in that there was never a confirmatory test completed for any of these children.

We have also included a map (5 year data only included for the map) in case it would be of use, that gives a visual representation of the distribution, by zip code. We typically use the 'dots' to mask lower number and exact locations. Use as is helpful, or not.

Please let us know if you have questions, or need edits made. I will monitor email tonight, and connect with Bob to make any necessary changes. He is scheduled to be off tomorrow, but offered to come in if needed to make changes by your 9am deadline, and to put the data file together for Hurley.

Nancy

From: Eisner, Jennifer (DHHS)
Sent: Thursday, October 01, 2015 11:52 AM
To: Miller, Corinne (DHHS); Robinson, Mikelle (DHHS)
Cc: Wells, Eden (DHHS)
Subject: Talking Points

Corinne and Mikelle:

Attached please find the most recent Flint talking points which include edits from Dr. Wells. A 12:30 meeting with the gov's comms team was just called, so we need to have them finalized and ready to share asap.

Can you please send me the bullet points explaining the data – or what is ready of them – by noon?

Thank you,

Jennifer (Smith) Eisner
Public Information Officer
Michigan Department of Health and Human Services

From: Robinson, Mikelle (DHHS)
Sent: Thursday, October 01, 2015 11:57 AM
To: Travis, Rashmi (DHHS)
Cc: Miller, Mark (DHHS)
Subject: FW: Talking Points
Importance: High

Rashmi,

Does Nancy P have bullet points explaining the data or is that something from Corinne's shop?

517-241-2112

From: Dykema, Linda D. (DHHS)
Sent: Thursday, October 01, 2015 1:06 PM
To: Miller, Corinne (DHHS); LyonCallo, Sarah (DHHS); Priem, Wesley F. (DHHS); Wells, Eden (DHHS)
Subject: RE: Talking Points
Importance: High

2 things:

- **Leaded gasoline** has been banned for use in road vehicles since 1996, so it's **not likely** that Flint kids would be exposed that way
- The sentence "Most of the lead in household water usually comes from the plumbing in your house, not from the local water supply" is not completely accurate and could be challenged. On the call with EPA today I heard that maybe **50% of the city's lead supply lines are lead**...these are outside the house and would include the portion of the run owned by the resident and the portion owned by the city water supply.

From: [Miller, Corinne \(DHHS\)](#)
To: [Dykema, Linda D. \(DHHS\)](#); [LyonCallo, Sarah \(DHHS\)](#); [Priem, Wesley F. \(DHHS\)](#); [Wells, Eden \(DHHS\)](#)
Subject: RE: Talking Points
Date: Thursday, October 01, 2015 2:18:30 PM

Eden,

More analysis and review has been done by Sarah's staff. Here are the talking points:

The high risk Zip codes (48503 and 48504)

Blood lead level rates among children under six years of age in the **high risk Zip codes (48503, 48504)** were 2.7 times higher than the rest of Genesee County before the switch to Flint River Water ($p < 0.0001$). After the switch to Flint River Water, rates in the high risk Zip codes were 3.2 times that of the rest of Genesee County ($p < 0.0001$).

Thus, compared to rates during 2010-2013, the rates after the switch to Flint River water in the high risk Zip codes increased 18 percent, although this difference did not reach statistical significance.

Other Zip codes in Flint

Rates of elevated blood lead levels among children under six years of age in other parts of the city of Flint were 2 times that of the rest of Genesee County before the switch to Flint River Water ($p < 0.0001$). The magnitude of the elevated rate remained roughly the same during the period after the water source switch.

From: Dykema, Linda D. (DHHS)

Blood Lead Levels in Flint Talking Points

October 1, 2015

- Initial analysis of MDHHS data found that blood lead levels (BLLs) of children in Flint have followed an expected seasonal trend; due to small numbers further analysis was initiated.
- While this analysis of blood lead levels in Flint as a whole remains true, after a comprehensive and detailed review down to the zip code level, we have found that the state analysis is consistent with that presented by Hurley.
- Director Lyon is working closely with DEQ and the administration to take active steps to reduce all potential lead exposures in Flint, and across the state.
- Our Chief Medical Executive has been in communication with the lead investigator at Hurley Children's Hospital, and we continue to work with Hurley, the city of Flint, local and state leaders to verify and analyze data trends.
- Zip code-level data does show that there has been an increase in elevated childhood blood lead levels in specific communities.
 - This does not conclusively mean that the water source change is the sole cause of the increase, but data does show an association.
 - There is an increased proportion of children with elevated Blood Levels (ELBs) in several zip codes, particularly 03 and 04. These appear to have increased over the last 1.5 years.
 - Lead exposure can occur from a number of different sources (such as paint, gasoline, solder, and consumer products) and through different pathways (such as air, food, water, dust, and soil).
 - Although there are several exposure sources, lead-based paint is still the most widespread and dangerous high-dose source of lead exposure for young children in the US and Michigan.
- We reviewed MDHHS statewide data using the same methodology used by Hurley, looking at our numbers by zip code and age ranges, and filtering out non-Flint children.
- Routine surveillance of blood lead levels does not analyze data down to the zip code level. Detailed analysis like this occurs when there is reason to focus in on precise locations or populations.
- MDHHS will be working closely with the Michigan Department of Environmental Quality, Hurley Children's Hospital, the Genesee County Health Department, and community organizations to initiate further action steps.
- We understand that cost may be a barrier to following the recommendations of the local health department. We are actively working with public and private partners to make resources available to those who may need assistance.

*

H₂O?



- MDHHS is recommending that residents follow the Public Health Advisory issued by the Genesee County Health Department, as well as take further steps to reduce exposures to all forms of lead in and around their homes.

MDHHS Stats and Facts

- 'High Risk' Zip codes (48503 and 48504)
 - Blood lead level rates among children under six years of age in the high risk zip codes (48503, 48504) were 2.7 times higher than the rest of Genesee County before the switch to Flint River Water.
 - After the switch to Flint River Water, rates in the high risk Zip codes were 3.2 times that of the rest of Genesee County.
- Other Zip codes in Flint
 - Rates of elevated blood lead levels among children under six years of age in other parts of the city of Flint were 2 times that of the rest of Genesee County before the switch to Flint River Water.
 - The magnitude of the elevated rate remained roughly the same during the period after the water source switch.

- Lead abatement through MDHHS was federally funded up until FY14 when Michigan began providing additional funds to abate homes.
- In FY14, \$1.25M General Fund was added. In FY15, General Fund was bumped up to \$1.75M and FY16, General Fund remains at \$1.75M.

Water Filters

- Our first action item is to work closely with our public and private partners to provide water filters to Flint residents and MDHHS clients.
- To meet this priority, the governor has identified one million dollars in state funding to purchase water filters for Flint residents.
- Given the questions and concerns regarding the change in water source in Flint, MDHHS has authorized the use of emergency services funding to provide water filters for MDHHS clients receiving assistance in the city of Flint.
- We are pursuing a plan for clients who are active Family Independence Program (FIP), Food Assistance Program (FAP), Child Development and Care (CDC), State Disability Assistance (SDA), State Disability Assistance (SDA), or Social Security Insurance (SSI) to that they can obtain filters that are National Sanitation Foundation (NSF) certified to remove lead and ANSI Standard 53.
- We are in discussions with local retailers and will share additional information about where residents can go to purchase filters as soon as those details have been finalized.

- MDHHS currently serves approximately 25,000 households in Flint.

Reducing and Removing Lead Exposure

- In housing built before 1978, it can be assumed that the paint has lead unless tests show otherwise.
- Make sure your child does not have access to peeling paint or chewable surfaces painted with lead-based paint.
- Children and pregnant women should not be present in housing built before 1978 that is undergoing renovation. They should not participate in activities that disturb old paint or in cleaning up paint debris after work is completed.
- Create barriers between living/play areas and lead sources. Until environmental clean-up is completed, you should clean and isolate all sources of lead.
 - Close and lock doors to keep children away from chipping or peeling paint on walls. You can also apply temporary barriers such as contact paper or duct tape, to cover holes in walls or to block children's access to other sources of lead.
- Regularly wash children's hands and toys. Hands and toys can become contaminated from household dust or exterior soil. Both are known lead sources.
- Regularly wet-mop floors and wet-wipe window components. Because household dust is a major source of lead, you should wet-mop floors and wet-wipe horizontal surfaces every 2-3 weeks.
 - Windowsills and wells can contain high levels of leaded dust. They should be kept clean. If feasible, windows should be shut to prevent abrasion of painted surfaces or opened from the top sash.
- Take off shoes when entering the house to prevent bringing lead-contaminated soil in from outside.
- Prevent children from playing in bare soil; if possible, provide them with sandboxes. Plant grass on areas of bare soil or cover the soil with grass seed, mulch, or wood chips, if possible.
 - Until the bare soil is covered, move play areas away from bare soil and away from the sides of the house. If you have a sandbox, cover the box when not in use to prevent cats from using it as a litter box. That will help protect children from exposure to animal waste.
- Avoid using makeup, containers, cookware, or tableware to store or cook foods or liquids that are not shown to be lead free.
- Remove recalled toys and toy jewelry immediately from children.
- Use only cold water from the tap for drinking, cooking, and making baby formula. Hot water is more likely to contain higher levels of lead. Most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

- Shower and change clothes after finishing a task that involves working with lead-based products such as stained glass, making bullets, or using a firing range.

WIC Children

- There are 855 infants participating in WIC in Flint.
- We are working with partners at the United Way to ensure that WIC families have access to water filters and bottled water.
- In homes with infants on WIC, if the household has documentation from an official source of unsanitary water supply issues, that family may be eligible to receive ready-to-feed formula. Families should contact WIC to see if they are eligible.
- Each household would have to be looked at on an individual basis.
- WIC cannot cover bottled water.

Background

- The results of the Hurley Children's Hospital were reviewed by MDHHS after the study was released last week.
- The analysis that Hurley conducted was different from the initial MDHHS data regarding blood lead levels in Flint.
- MDHHS initial data looked at the entire blood lead levels for the Flint area for the past five years and showed the annual seasonal trends in the area.
- Seasonal exposure is higher in the summer for a variety of reasons including children playing outside in the soil, and when windows are open and lead paint is more likely to be in the air. Further, seasonal variations in water can occur due to changes in temperature, pH, and other factors

Surprisingly: Page 118-119 primarily focus on lead paint and lead in soil as pathways of exposure to children

On Oct 1, 2015, at 7:41 PM, Wells, Eden (DHHS) <WellsE3@michigan.gov> wrote:

My input below:

From: Lyon, Nick (DHHS)

Sent: Thursday, October 1, 2015 6:56 PM

To: Wells, Eden (DHHS)

Cc: Lasher, GERALYN (DHHS); Hertel, Elizabeth (DHHS); Becker, Timothy (DHHS); Grijalva, Nancy (DHHS); Moran, Susan (DHHS); Eisner, Jennifer (DHHS); Minicuci, Angela (DHHS)

Subject: Re: talking points

I like it. Does Eden have what she needs? YES

I do have a couple of questions.

Can we say publicly that there is no lead when the water leaves the treatment site? THAT SEEMS TO BE A DEQ QUESTION FOR ME

Is our lead program going to modify our lead home investigations or abatement strategy WE CAN AND ALREADY HAVE DISCUSSED DOING SO; E.G.: IF WE CONDUCT AN EBL INVESTIGATION NOW< THE HOME ABATEMENT GROUP WILL ALSO TEST THE WATER 99% OF IMTE LEAD PAINTS MANOR ISSUE--RIGHT NOW IN FLINT WATER NOW MAY HAVE A ROLE)

Can I give summary info for the zip codes or city as a whole? FOR OTHERS TO INOUT AS WELL, BUT CORINNE SAID IT WAS OK IF I REPORTED DATA (HIGH LEVELS OVER 5, 15 AND %) BY IO AS WELL.

There is a big bump in 14 and then it drops again in the fall? Are we sharing the chart and if so does that give us some rationale to say it looked seasonal, even in the high impacted zip codes? YES- SEASONALITY RATIONALE HAS TO DO WITH CHILDREN BEING OUTSIDE< OLD HOMES WITH LEAD PAINT WINDOWS BEING OPENED, INCREASED DUST WITH LEAD IN IT BLOWING AROUND< ETC> THERE IS SEASONAL VARIATION IN WATER LEAD AS WELL DUE TO pH AND TEMPERATURE FLUCTUATIONS, AMONG OTHER FACTORS.

I'd like to express my appreciation to the Hurley doctors for bringing this issue to our attention. Is that ok? I PLAN ON IT TOO!!! YES YES YES IS MY VOTE!!!!

Can I confidently say that we were not aware before last week. I WAS AWARE ONLY OF VT AND DEQ MEDIA; UNTIL THURSDAY LAST WEEK.

Somewhere in my talking points I want to say that the department goal or my goal is to prevent or minimize lead exposure in children regardless of source. I think that fits in nicely before the lead part in my points. I AGREE AND THAT IS MY MAJOR COMMUNICATION OBJECTIVE AS WELL.

I was told we really don't do surveillance per se, but instead treat children as we become aware. Should we modify our point that? WE DO DO BLOOD LEAD TESTING IN HIGH RISK CHILDREN---THIS IS A FORM OF PH SURVEILLANCE----WE GET ALL RESULTS (ALL NUMBERS TESTED, and ALL POSITIVES OVER 5 micograms/dL) AND LEVELS OVER 5 ARE IN THE DATA SYSTEM FOR MONITORING/FOLLOW_UP/SURVEILLANCE PURPOSES

Do you have a document that describes the lead program I can use if asked that contains general info like:

How long does a child need to have a blood level of .05 before it compromises a child's health or future? How about above .14? LEVELS OF 5 **FOR ANY TIME** ARE NOT CONSIDERED SAFE DUE TO AFFECTS OF LEAD ON NERVOUS SYSTEM---IF THEY TEST OVER 5, THE FAMILY MUST BE COUNSELED AND/OR OTHER REMEDIATION MUST BE DONE DEPENDING UPON LEVEL> WE WOULD NOT WANT TO SEE LEVELS PERSIST OR INCREASE....IN FACT, FOR THOS CHILDREN IN THE RANGE OF 5-14 THE LEAD PROGRAM/DOCTOR ENSURE CHILD TESTED 1-3 MONTHS LATER TO ENSURE DRIOPPING BELOW 5...

What does blood test measure? (Parts per million). MICROGRAM/DECILITER; $\mu\text{g/dL}$

Anything else that I might be asked that I should know if Eden isn't standing next to me. ????? FUNDS FOR INCREASED TESTING OR ABATEMENT?

Tim - Did you see the exact filter? Is it easy to install? Are we audit meets federal standards?

That's all for the moment.

Thanks,

Nick

From: Murray, David (GOV)

Sent: Friday, October 2, 2015 10:18 AM

To: Wurfel, Sara (GOV); Wurfel, Brad (DEQ); Agen, Jarrod (GOV); Lasher, Geralyn (DHHS); Minicuci, Angela (DHHS); Eisner, Jennifer (DHHS); Tommasulo, Karen (DEQ); Kennedy, Jordan (GOV)

Subject: MLive guest column with DHHS edits

This is the new version with DHHS edits. Thank you, everyone, for your help.

By Nick Lyon and Dan Wyant

People in Flint – and all of Michigan – need to know that that then they turn on the faucet, the water they drink and bathe their children with, is safe and clean.

Flint residents have been hearing concerning news about the municipal water supply for more than a year. We're working to help Flint leaders address and fix short- and long-term problems with the city's water infrastructure.

A recent announcement by local doctors that blood lead levels are rising in children residing in Flint's most at-risk ZIP codes added to the state's knowledge and sparked some additional precautionary measures.

The state takes lead seriously. Although continued analysis is being conducted, the MDHHS analysis is consistent with the local finding.

State agencies also are working in collaboration with the federal and Flint leaders to get residents accurate information to ease their fears.

Gov. Rick Snyder directed the Michigan Department of Environmental Quality and the Department of Health and Human Services to work with the U.S. Environmental Protection Agency to create a comprehensive action plan to build our knowledge about lead in Flint, better protect the community and restore public confidence in the regulatory framework.

We're testing the water in all of our schools so we know that our children are safe.

We're testing residences at no charge and expanding health exposure testing so families can be confident about the water coming into their homes.

We're providing faucet filters to Flint homes. The state is investing \$1 million on this effort, building on the generosity and support of community groups and donors.

We're accelerating corrosion controls in the Flint drinking water system.

We're increasing the pace of water system improvements to address replacing lead service lines.

We're expediting the completion of the Karegnondi Water Authority pipeline.

We're expanding the Safe Drinking Water Technical Advisory Committee to ensure the best technology, practices and science are being followed by adding an expert from the U.S. EPA's Office of Research and Development.

The DHHS's chief medical executive, Dr. Eden Wells, has been designated Flint's drinking water public health adviser.

We're also boosting a comprehensive lead education program to make sure residents have detailed information about how to protect themselves and their homes.

That's key, because the lead in question does not come from the Flint River. The water leaving the drinking water plant is clean and safe. The water traveling through the distribution system also is free of lead.

The lead issues happen when the water reaches homes that have lead service lines or lead plumbing. This is important to know for two reasons: Contamination happens at the homeowner level, it is very difficult to track precisely.

And, the longer water sits in lead pipes, the more lead it takes on, so homes on the same block might have very different results from lead testing, based on what kind of plumbing they have and how homeowners use their water.

All of the measures in the action plan build on efforts that have been underway for the last year. State agencies have been working with the city on a variety of issues and approaches to correct Flint's water infrastructure challenges.

That's because the health and safety of Flint residents – and people across our state – is our first priority.

More information about the action plan and lead is available at Michigan.gov/FlintDrinkingWater. People interested in getting their homes tested for free should call (810) 787-653, then press 1.

Nick Lyon is the director of the Michigan Department of Health and Human Services and Dan Wyant is the director of the Michigan Department of Environmental Quality.

Dave Murray

Deputy Press Secretary | Executive Office of Governor Rick Snyder

MurrayD1@michigan.gov

517-335-6397, office

517-449-8343, mobile

Twitter: @michigandmurray

From: Eisner, Jennifer (DHHS)
Sent: Friday, October 02, 2015 10:20 AM
To: Grijalva, Nancy (DHHS)
Cc: Lyon, Nick (DHHS); Lasher, Geralyn (DHHS); Wells, Eden (DHHS)
Subject: Nick's Talking Points

Nancy -- Please have Nick use these!

With the evolving filter situation, the talking points have been updated. Please note that in Nick's talking points, State Disability Assistance (SDA) has been added to the list of programs that will be eligible for filters.

The general talking points have been updated as well.

Thank you,

Jennifer

From: "Wurfel, Sara (GOV)" <Wurfels@michigan.gov>
To: "Wyant, Dan (DEQ)" <WyantD@michigan.gov>, "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>, "Tommasulo, Karen (DEQ)" <TommasuloK@michigan.gov>, "Pallone, Maggie (DEQ)" <PalloneM@michigan.gov>, "Lyon, Nick (DHHS)" <LyonN2@michigan.gov>, "Lasher, GERALYN (DHHS)" <lasherg@michigan.gov>, "Minicuci, Angela (DHHS)" <MinicuciA@michigan.gov>, "Eisner, Jennifer (DHHS)" <EisnerJ@michigan.gov>, "Hertel, Elizabeth (DHHS)" <HertelE@michigan.gov>
Cc: "Murray, David (GOV)" <MurrayD1@michigan.gov>, "Kennedy, Jordan (GOV)" <KennedyJ4@michigan.gov>, "Brown, Jessica (GOV)" <BrownJ53@michigan.gov>, "Thelen, Mary Beth (DEQ)" <THELENM2@michigan.gov>

Subject: Media conference call re: Flint water action plan

Hi all –

Per conversations today, here are the details for Friday's embargoed media conference call.

Given some of the changing information, we added in a quick pre-brief with the Governor from 11 to 11:10 a.m. to give us a chance to go over any last details and finalize flow. This will be followed by the actual media conf. call from 11:15 to 11:40 a.m. Know that folks will be needing to head to Flint immediately afterward.

Sounds like we'll have Dan, Nick and Dr. Wells in person. That's great and will work best when most everyone is in the same room. The location is Romney Building, 1st floor communications conference room. The governor will be joining us from phone.

We'll need to be fairly quick in overview and framing comments so we can get to as many Qs as possible.

Please let me know if anyone has any Qs, concerns or needs anything else at all. Or if you'd like a listen only line for anyone back in the depts. to catch the call.

Otherwise, see you in the Romney by 11 a.m. tomorrow.

Thanks so much!

SW

p.s. Also attached key documents as stand right now – release, 2 infographics and the high level points.

Agenda:

11:15-11:16 AM SW intro; sets parameters; introduces other participants; turns over to Governor for opening remarks

11:16-11:20 AM Governor gives opening remarks; highlights reason for state action; introduces

Director Wyant
11:20-11:24 AM Director Wyant remarks; highlights key steps in the action plan; introduces
Director Lyon
11:24-11:27 AM Director Lyon remarks; highlights key health components of the plan and mentions
Dr. Wells; turns back to Governor
11:27-11:37 AM Governor opens it up for Q&A
11:37-11:39 AM Governor closing remarks
11:39-11:40 AM SW wraps up call; reminds reporters of embargo, 1:30 p.m. press conference, and
how to get a hold of everyone

Possible Topics:

Flint water action plan
Lead in Flint water
Handling of Flint water issue
Genesee Co. health emergency action
ACLU action
Hurley data
Reconnecting Flint to Detroit water

Media invited:

Flint area media (print, TV and radio) – Flint Journal/Ron Fonger; WJRT TV 12, WNEM TV 5, WEYI TV 25,
WFNT Radio
Associated Press – Ed White
Detroit News – Jim Lynch
Detroit Free Press – Nancy Kaffer, Kristi Tanner & Kathy Gray
Michigan Radio – Steve Carmody

From: Travis, Rashmi (DHHS)
Sent: Friday, October 02, 2015 6:31 AM
To: Wells, Eden (DHHS)
Cc: Peeler, Nancy (DHHS); Fink, Brenda (DHHS); Colston, Leslie (DHHS)
Subject: Re: TIME SENSITIVE:: MDHHS IRB Approval - 201509-11-EA

Eden

Ok we will wait. Please let us know status after the press conference in ok to share data.

Thanks

Rashmi

Sent from my iPhone

On Oct 1, 2015, at 8:20 PM, Wells, Eden (DHHS) <WellsE3@michigan.gov> wrote:

Governor's Communication Plan states data not to be shared with HURLEY/LHD until I call her/them before 1:30 press conference(about 1 PM) Once Press conference starts at 1:30, that would be fine, I would think!!!!

From: Travis, Rashmi (DHHS)
Sent: Friday, October 02, 2015 6:34 AM
To: Peeler, Nancy (DHHS)
Cc: Fink, Brenda (DHHS); Colston, Leslie (DHHS)
Subject: Re: MDHHS IRB Approval - 201509-11-EA

Nancy

Please let Corinne and staff know with a cc to me. Sounds like we are in s holding pattern as per instructions with Gov office. Let Corrine know that too. I will let you know when we hear further action from Eden.

Thanks

Rashmi

Subject	FW: The requested file has been sent
From	Mona Hanna-Attisha
To	Wells, Eden (DHHS)
Sent	Friday, October 2, 2015 3:42 PM

FYi we cannot access the file – it just came as a .htm. Is there anyone else that can send it to us? We were hoping to GIS analyze this weekend. Thanks.

From: Mona Hanna-Attisha [mailto:MHanna1@hurleymc.com]
Sent: Friday, October 02, 2015 2:59 PM
To: Scott, Robert L. (DHHS); Jenny LaChance
Cc: Peeler, Nancy (DHHS); Travis, Rashmi (DHHS)
Subject: RE: The requested file has been sent

We are unable to open the file that you sent. Can you try to send again or let us know how to open it another way. Thanks! We were really hoping to review today. thanks!

From: Mona Hanna-Attisha <MHanna1@hurleymc.com>
Sent: Friday, October 2, 2015 5:24 PM
To: Peeler, Nancy (DHHS); Scott, Robert L. (DHHS); Jenny LaChance; Miller, Corinne (DHHS); LyonCallo,

Sarah (DHHS); McKane, Patricia (DHHS)
Cc: Travis, Rashmi (DHHS); Wells, Eden (DHHS)
Subject: RE: The requested file has been sent

Quick question:

We have the data and are starting to geocode it!
All of your lead level results are single numbers with no decimals?? It's kinda weird. All of our lab data included decimals and there was also kids with <0.5 levels (undetectable).

Does your lead data just not have decimals? Do numbers get round up or round down?

Thanks! Mona

(I do understand that it's Friday. Sorry.)

On Oct 2, 2015, at 6:38 PM, LyonCallo, Sarah (DHHS) <lyoncallos@michigan.gov> wrote:
It would be great if Bob or Nancy could be contacted because I cannot find the answer to Mona's question about rounding in any materials on CDC or MDHHS CLPP materials.... Specifically Mona wants to know how a lab test with decimal values is rounded in the data base.
Do we round up?
Do we round down?
Do we use the rounding rule?

I am assuming we are following a cdc protocol on rounding rules, but can't find any mention of rounding in the data specs I have been able to find thus far.....

On Oct 2, 2015, at 6:56 PM, Wells, Eden (DHHS) <WellsE3@michigan.gov> wrote:
Ugh

Sent from my iPhone

From: Travis, Rashmi (DHHS)
Sent: Friday, October 02, 2015 7:05 PM
To: Wells, Eden (DHHS)
Cc: LyonCallo, Sarah (DHHS); Miller, Corinne (DHHS)
Subject: Re: anyone have nancy P or Bob S cell phone numbers?

I emailed Bob and Nancy. Nancy may check her email over weekend. Is there an urgent need to contact on the weekend?

Sent from my iPhone

On Oct 2, 2015, at 7:06 PM, LyonCallo, Sarah (DHHS) <lyoncallos@michigan.gov> wrote:
Bob has already responded and Mona has come back with more questions. Someone needs to be responsive over the weekend or to say when we would be able to answer, I think – as Mona's group works with the data, there will be more questions.

From: Wells, Eden (DHHS)
Sent: Friday, October 02, 2015 7:11 PM
To: LyonCallo, Sarah (DHHS)
Cc: Travis, Rashmi (DHHS); Miller, Corinne (DHHS)
Subject: Re: anyone have nancy P or Bob S cell phone numbers?

I sent an email that is portraying a real concern--- Sarah would having tenths have helped the sensitivity of our data??????

Sent from my iPhone

From: LyonCallo, Sarah (DHHS)
Sent: Friday, October 02, 2015 7:18 PM
To: Wells, Eden (DHHS)
Cc: Travis, Rashmi (DHHS); Miller, Corinne (DHHS)
Subject: RE: anyone have nancy P or Bob S cell phone numbers?

My understanding is this is CDC protocol for handling the clinical data to get it into surveillance format. What Bob sends is the same data that goes to local health and to CDC (used to be STELLAR) – it is the raw surveillance data. I don't know the protocols for how the clinical tests come in through the warehouse –this is really a Bob question.

From: "Wells, Eden (DHHS)" <WellsE3@michigan.gov>
Date: October 2, 2015 at 7:19:50 PM EDT
To: "LyonCallo, Sarah (DHHS)" <lyoncallos@michigan.gov>
Cc: "Travis, Rashmi (DHHS)" <TravisR@michigan.gov>, "Miller, Corinne (DHHS)"

<MillerC39@michigan.gov>

Subject: Re: anyone have nancy P or Bob S cell phone numbers?

So I can take a deep breath now? I nearly keeled over...Rashmi- he may want to explain that to her if rounding is CDC protocol if that is tuneup, because she needs confidence in our processes.

Sent from my iPhone

From: Mona Hanna-Attisha <MHanna1@hurleymc.com>
Date: October 2, 2015 at 7:23:14 PM EDT
To: "Wells, Eden (DHHS)" <WellsE3@michigan.gov>
Subject: Re: The requested file has been sent

It's ok, Eden. We can wait until Monday to get more info/clarification. Thanks so much for everything.

Mona Hanna-Attisha MD MPH FAAP
Director, Pediatric Residency Program
Hurley Children's Hospital
Michigan State University

From: Wells, Eden (DHHS)
Sent: Friday, October 02, 2015 7:27 PM
To: Scott, Robert L. (DHHS); Peeler, Nancy (DHHS); Travis, Rashmi (DHHS); Miller, Corinne (DHHS); LyonCallo, Sarah (DHHS)
Subject: Fwd: The requested file has been sent

Whew... Have a good weekend all!

Sent from my iPhone

From: "Scott, Robert L. (DHHS)" <ScottR9@michigan.gov>
Date: October 2, 2015 at 7:36:19 PM EDT
To: Mona Hanna-Attisha <MHanna1@hurleymc.com>, "Peeler, Nancy (DHHS)" <PeelerN@michigan.gov>, Jenny LaChance <JLachan1@hurleymc.com>, "Miller, Corinne (DHHS)" <MillerC39@michigan.gov>, "LyonCallo, Sarah (DHHS)" <lyoncallos@michigan.gov>, "McKane, Patricia (DHHS)" <McKaneP@michigan.gov>
Cc: "Travis, Rashmi (DHHS)" <TravisR@michigan.gov>, "Wells, Eden (DHHS)" <WellsE3@michigan.gov>
Subject: Re: The requested file has been sent

Mona,

The integers in your file are the values we have stored in our blood lead surveillance system; that's our current protocol.

To my knowledge, the CDC's Lead program has not taken a stance on whether to store decimals or not.

Bob

From: Wells, Eden (DHHS)
Sent: Friday, October 02, 2015 7:42 PM
To: Scott, Robert L. (DHHS); Peeler, Nancy (DHHS); LyonCallo, Sarah (DHHS); Travis, Rashmi (DHHS); Miller, Corinne (DHHS)
Subject: Fwd: The requested file has been sent

You are a true rock star, Bob--- sorry for doing a little freak out- I am going to tape my fingers so I can't type emails anymore as my small brain is now rattling around.

I owe you all- and CHOCOLATE is due!

Sent from my iPhone

From Michigan Radio (Oct 2, 2015):

Here is the state's action plan for dealing with Flint's water crisis

Researchers found elevated lead levels in Flint's drinking water, and pediatricians found that the water was likely poisoning some kids in the city. **Today, the state revealed that it too had tested kids and their findings seem to be consistent.**

Dr. Eden Wells, the state's chief medical executive, said that before the city switched to Flint River water, kids' lead levels in two "high risk" zip codes were 2.7 times higher than the rest of Genesee County. Now they're 3.2 times higher - a statistically significant difference.

Here is [the state's action plan](#) for dealing with Flint's drinking water problem:

- Immediately test Flint Public Schools to ensure drinking water is safe.
- Work with the Michigan Department of Health and Human Services and local public health agencies to expand lead exposure testing of individuals beyond what's already been done.
- With the support of Flint and the state, offer free water testing to Flint residents who have concerns and those on public assistance.
- Expand health exposure testing of individual homes.
- Accelerate corrosion controls in the Flint drinking water system.
- Expedite the completion of the Karegnondi Water Authority.
- Expand a "Safe Drinking Water Technical Advisory Committee" to make sure best practices are being used.
- Dr. Eden Wells, chief medical executive for the Michigan Department of Health and Human Services, is named "Flint drinking water public health adviser."
- Boosting a comprehensive lead education program to give residents information about pathways for lead exposure.

...

<http://michiganradio.org/post/here-states-action-plan-dealing-flints-water-crisis#stream/0>

From Detroit Free Press (Oct 2, 2015):

State to tackle unsafe water in Flint with tests, filters

"This is an important issue and I want to make sure that people are working well together to address this," Gov. Rick Snyder said in a briefing with reporters shortly before the news conference. "We all have a concern about Flint's drinking water in terms in what we're seeing on lead."

...

State officials acknowledged Friday that it was Hanna-Attisha's work that had them second-guessing their first reading of data. When they focused in on certain ZIP codes, the worrisome lead level increases became clearer, Wells said.

"There's no doubt that new testing data is justifying these actions," Wyant told the Free Press after the news conference.

<http://www.freep.com/story/news/local/michigan/2015/10/02/state-officials-outline-plan-flint-water/73200250/>

From: Scott, Robert L. (DHHS)
Sent: Saturday, October 03, 2015 3:02 PM
To: Travis, Rashmi (DHHS); Peeler, Nancy (DHHS)
Subject: Re: anyone have nancy P or Bob S cell phone numbers?
Attachments: Lead results are squishy.docx

Nancy and Rashmi,

Please see attached. This is what I'd like to send Mona, but please feel free to tell me why I shouldn't. 😊

I do think that every researcher asking for lead data should get some version of this information; I'm feeling like I should have been doing so in years past.

As Nancy said to me yesterday, we should all get together and talk about how BLLs are currently stored, and what changes should be made going forward. Mark Knottnerus and Tom Mailand from the MDHHS Trace Metals Lab should be included in the discussion. That discussion (or maybe a separate one), should also cover the difference between capillary and venous, the large number of unconfirmed capillary tests, and how best to represent them in data reports.

(My personal cell number is [REDACTED]. Please feel free to call.)

Thanks,
Bob

Lead results are squishy.

In Michigan:

- Any specimen that could not be analyzed (clotted, insufficient amount, etc.) is not included here.
- Any result of “below detection limit” or similar text is stored as a 1.
- Any result of less than 1 (0.0, 0.2, 0.5, 0.8, etc.) is stored as a 1.
- Any numerical result in decimals (above 1) is rounded to the nearest integer (rounding up at .5).
- Any result reported as <X is stored as the next lowest integer—e.g., <4 is stored as 3.

Everywhere:

- Different labs using different methods of analysis have different detection limits.
- Different methods of analysis have different levels of precision.
- LeadCare analyzers (including LeadCare II) have a detection limit of 3.3. LeadCare results now account for nearly half? A third? Of all results statewide.
- Regardless of the method of analysis, the method of blood draw can be either venous or capillary. Capillary is considered a screening test, and any elevated capillary test should be confirmed with a venous test. In many cases, though, the venous test never occurs—either one or more repeat capillary tests are done, or the child never gets a second test of either type.
- This situation has been further confused since 2012, when the reference level went from 10 to 5. Even more capillary BLLs 5-9 go unconfirmed than those ≥ 10 .
- THE REFERENCE LEVEL FOR BLOOD LEAD IS “5” NOT “5.0.”

From: Taylor, Sherry
Sent: Wednesday, October 07, 2015 1:10 PM
To: 'behringerd@michigan.gov'
Subject: lead information

Thank you for your help Debbie!

From: Taylor, Sherry [<mailto:STAYLOR@gchd.us>]
Sent: Wednesday, October 07, 2015 2:21 PM
To: Scott, Robert L. (DHHS) <ScottR9@michigan.gov>
Subject: FW: lead information

Sherry Taylor, RN, BSN
Public Health Nurse Coordinator
Genesee County Health Department
G-3373 S. Saginaw Street
Flint, MI 48529
Telephone: 810- 257-3833
Fax: 810- 237-4612

From: Scott, Robert L. (DHHS)
Sent: Wednesday, October 07, 2015 2:24 PM
To: Lishinski, Karen (DHHS)
Cc: Peeler, Nancy (DHHS)
Subject: FW: lead information

FYI, see [attached](#).

From: Peeler, Nancy (DHHS)
Sent: Monday, October 12, 2015 2:03 PM
To: Scott, Robert L. (DHHS); Lishinski, Karen (DHHS)
Subject: RE: lead information

Importance: High

OK, next steps on lead and Flint: **DUE ON TUESDAY, 10/13/15, IF AT ALL POSSIBLE**

Bob, welcome back! I need to ask if you can dedicate your Tuesday to pulling some data that has been requested, to support providing lead follow-up services to all children with EBLs above 5 in Flint.

1. We have been asked to pull data/list of all follow up testing needed for
 - a. All children living in zip codes 48501-48507
 - b. Time period of April 2014 – present

2. All Capillary samples that have not had a confirmatory Venous -please assemble a list that includes:
 - a. Date of sample, capillary level, where done (if we know that), child's name, DOB, parent name, address, city, zip code
 - i. We will want to have both the list, and summary statistics (for example, total # of capillaries done, % that were elevated, average capillary level and range of levels, age range of children, # by zip code)

3. All Venous samples due for follow-up testing (per the AAP protocol) – please assemble a list that includes:
 - a. Date of samples, Venous levels (in case there is more than 1 per child), where done, when the follow-up test was due, child's name, DOB, parent name, address, city, zip code
 - b. Again, both the list as well as summary statistics (similar to above)

We need to generate this info ASAP, by the time we leave on Tuesday if at all possible!!! **We will be getting new/additional \$\$ to fund Case Management for every child in Flint with an EBL above 5 venous. So we need to know how many children this may be, and since CM is based on confirmed venous tests, we need to start with a focus on getting the capillaries confirmed, and getting the follow-up testing done per AAP schedule, etc.**

Nancy

Scott, Robert L. (DHHS)

From: LyonCallo, Sarah (DHHS)
Sent: Thursday, October 15, 2015 9:29 AM
To: Peeler, Nancy (DHHS); Scott, Robert L. (DHHS)
Cc: McKane, Patricia (DHHS); Miller, Corinne (DHHS)
Subject: FW: Response to Kristi Tanner Request
Attachments: Flint Lead by zip suppressed submit 100715.xlsx; 150930Poisson Results 3 LT6Y Submit 100715.docx; 2015 30 15 Shewart_zip_onlyPM Figure.pub

Dear Nancy

Here are the bullets I promised Tuesday – I am very sorry for the delay, it is completely my fault for not getting this out.

A data set was created out of the raw test file for January 2010-August 2015, for tests to children less than 6 years of age. Two products were created out of this data set, a Shewart chart for percent of tests with elevated blood lead levels on a quarterly basis (numerator and denominator counts attached) and a poisson regression to assess differences in the prevalence of elevated blood lead level prior to and after the change to Flint River water in April 2014 (results attached).

Inclusions and exclusions in the data set

- All tests were included (venous and capillary)
- All tests were included for each child in a calendar year up until and including the first elevated blood lead level (greater than or equal to 5 ug/dl). Future tests in that calendar year were excluded for that child.

Geographic areas

- City of flint was defined by zip code (48501-48507) in two groupings to be consistent with work of the Hurley researchers.
 - o "High Risk" area with in flint were two zip codes (48503 and 48504) where tap water was found to more frequently have higher lead levels
 - o "Other Flint" zip codes
- Other Genesee county zip codes

- 1) Shewart Chart: The attached file (Figure and Flint Lead by zip suppressed submit 100715.xls) provides the numerators and denominators for the percent positive tests each quarter for Genesee County areas. has had cells with fewer than five events suppressed to protect confidentiality. The mean proportion for the county during the entire time period was used to set upper and lower control limits.
- 2) Poisson Regression: Attached should be the raw SAS output from the Poisson regression model for events occurring among children less than six years of age. The counts of positive tests each month (EBLL5) are modeled, with the predictor of interest being "PlaceTime5" which is defined on page 1 of the output. Season and age were included in the model as well (Child's age at testing date and QY or quarter-year). The log of the monthly counts of tests was used as the offset. Child ID was used to subject effect, with an exchangeable correlation structure.

We are available to answer questions about this work or further explain our methods and assumptions.

Sarah Lyon-Callo, MA, MS
Director, Lifecourse Epidemiology and Genomics Division
Bureau of Disease Control, Prevention and Epidemiology
Population Health and Community Services Administration
Michigan Department of Health and Human Services

201 Townsend St., 4th Floor Capitol View Building
PO Box 30195
Lansing, MI 48909
PH: 517-335-9315

Positive tests among All Tests in Children < 6 years old

	48503			48504			48505			48506			48507			Non-Flint			All Genesee		
	N	Total	Percent	N	Total	Percent	N	Total	Percent												
2010 Q1	12	175	6.9%	18	282	6.4%	20	327	6.1%	7	192	3.6%	DNS	DNS	1.5%	26	888	2.9%	86	2064	4.2%
2010 Q2	17	186	9.1%	17	252	6.7%	18	225	8.0%	15	200	7.5%	8	167	4.8%	25	991	2.5%	100	2023	4.9%
2010 Q3	14	154	9.1%	18	246	7.3%	18	206	8.7%	16	185	8.6%	6	204	2.9%	16	1036	1.5%	88	2038	4.3%
2010 Q4	DNS	DNS	2.7%	11	151	7.3%	7	133	5.3%	DNS	DNS	2.3%	5	115	4.3%	15	652	2.3%	45	1295	3.5%
2011 Q1	7	108	6.5%	10	151	6.6%	13	136	9.6%	7	102	6.9%	DNS	DNS	2.6%	12	735	1.6%	54	1391	3.9%
2011 Q2	6	141	4.3%	7	182	3.8%	8	168	4.8%	10	178	5.6%	6	172	3.5%	19	966	2.0%	56	1813	3.1%
2011 Q3	10	132	7.6%	18	227	7.9%	16	230	7.0%	13	213	6.1%	12	230	5.2%	32	1154	2.8%	101	2187	4.6%
2011 Q4	11	130	8.5%	10	179	5.6%	6	170	3.5%	DNS	DNS	2.3%	8	182	4.4%	12	899	1.3%	50	1689	3.0%
2012 Q1	DNS	DNS	3.3%	9	167	5.4%	6	143	4.2%	7	156	4.5%	DNS	DNS	2.3%	26	973	2.7%	56	1736	3.2%
2012 Q2	6	131	4.6%	7	183	3.8%	DNS	DNS	2.5%	5	120	4.2%	DNS	DNS	1.6%	23	1051	2.2%	48	1831	2.6%
2012 Q3	9	156	5.8%	11	248	4.4%	7	200	3.5%	13	148	8.8%	10	270	3.7%	35	1183	3.0%	85	2211	3.8%
2012 Q4	6	119	5.0%	7	162	4.3%	6	140	4.3%	6	119	5.0%	DNS	DNS	1.5%	12	880	1.4%	40	1618	2.5%
2013 Q1	6	116	5.2%	DNS	DNS	1.8%	DNS	DNS	1.6%	DNS	DNS	3.2%	DNS	DNS	2.4%	16	936	1.7%	35	1640	2.1%
2013 Q2	6	137	4.4%	10	187	5.3%	DNS	DNS	2.4%	5	151	3.3%	7	210	3.3%	19	1148	1.7%	52	2004	2.6%
2013 Q3	8	146	5.5%	10	207	4.8%	DNS	DNS	2.1%	DNS	DNS	2.3%	7	222	3.2%	23	1147	2.0%	56	2089	2.7%
2013 Q4	DNS	DNS	0.0%	5	197	2.5%	5	122	4.1%	DNS	DNS	2.1%	6	216	2.8%	14	905	1.5%	33	1706	1.9%
2014 Q1	7	118	5.9%	DNS	DNS	1.2%	DNS	DNS	0.6%	DNS	DNS	2.0%	DNS	DNS	2.1%	10	966	1.0%	27	1756	1.5%
2014 Q2	6	118	5.1%	5	184	2.7%	DNS	DNS	1.9%	DNS	DNS	1.4%	5	189	2.6%	16	949	1.7%	37	1742	2.1%
2014 Q3	12	176	6.8%	19	233	8.2%	20	198	10.1%	13	162	8.0%	7	238	2.9%	22	1142	1.9%	93	2156	4.3%
2014 Q4	DNS	DNS	1.8%	6	145	4.1%	DNS	DNS	3.3%	DNS	DNS	1.7%	DNS	DNS	1.6%	12	773	1.6%	29	1459	2.0%
2015 Q1	5	124	4.0%	DNS	DNS	1.9%	6	134	4.5%	DNS	DNS	0.0%	DNS	DNS	1.7%	7	870	0.8%	24	1604	1.5%
2015 Q2	10	143	7.0%	7	129	5.4%	DNS	DNS	2.4%	DNS	DNS	3.2%	DNS	DNS	0.9%	19	937	2.0%	46	1680	2.7%
2015 Q3	9	72	12.5%	8	84	9.5%	DNS	DNS	1.4%	DNS	DNS	4.2%	DNS	DNS	1.1%	14	583	2.4%	36	979	3.7%
Total	176	3046	5.8%	221	4286	5.2%	182	3809	4.8%	148	3367	4.4%	121	4363	2.8%	425	21764	2.0%	1277	40711	3.1%
Pre	132	2302	5.7%	173	3355	5.2%	145	2998	4.8%	124	2615	4.7%	100	3254	3.1%	335	16510	2.0%	1012	31091	3.3%
Post	44	744	5.9%	48	931	5.2%	37	811	4.6%	24	752	3.2%	21	1109	1.9%	90	5254	1.7%	265	9620	2.8%

DNS = Less than five observations. 48501 and 48502 suppressed due to small numbers of observations, but are included in the All Genesee totals.

*The SAS System**The GENMOD Procedure*

Parameter Information			
Parameter	Effect	PlaceTime5	QY
Prm5	PlaceTime5	4	
Prm6	PlaceTime5	5	
Prm7	QY		1
Prm8	QY		2
Prm9	QY		3
Prm10	QY		4
Prm11	QY		5
Prm12	QY		6
Prm13	QY		7
Prm14	QY		8
Prm15	QY		9
Prm16	QY		10
Prm17	QY		11
Prm18	QY		12
Prm19	QY		13
Prm20	QY		14
Prm21	QY		15
Prm22	QY		16
Prm23	QY		17
Prm24	QY		18
Prm25	QY		19
Prm26	QY		20
Prm27	QY		21
Prm28	QY		22
Prm29	QY		23
Prm30	AGE		

Algorithm converged.

The SAS System

The GENMOD Procedure

GEE Model Information	
Correlation Structure	Exchangeable
Subject Effect	CHILD_ID (30301 levels)
Number of Clusters	30301
Correlation Matrix Dimension	8
Maximum Cluster Size	8
Minimum Cluster Size	1 (n=28855)

Algorithm converged.

Exchangeable Working Correlation	
Correlation	0.2505676063

GEE Fit Criteria	
QIC	11081.1598
QICu	11082.9899

Analysis Of GEE Parameter Estimates							
Empirical Standard Error Estimates							
Parameter		Estimate	Standard Error	95% Confidence Limits		Z	Pr > Z
Intercept		-3.7232	0.1976	-4.1105	-3.3358	-18.84	<.0001
PlaceTime5	1	1.1531	0.1518	0.8556	1.4507	7.60	<.0001
PlaceTime5	2	0.9793	0.0802	0.8221	1.1365	12.21	<.0001
PlaceTime5	3	0.6164	0.1544	0.3137	0.9190	3.99	<.0001
PlaceTime5	4	0.6967	0.0775	0.5448	0.8486	8.99	<.0001
PlaceTime5	5	0.0000	0.0000	0.0000	0.0000	.	.
QY	1	0.0918	0.2274	-0.3539	0.5375	0.40	0.6864
QY	2	0.3201	0.2207	-0.1124	0.7525	1.45	0.1469
QY	3	0.2000	0.2215	-0.2342	0.6342	0.90	0.3666
QY	4	0.0230	0.2416	-0.4505	0.4965	0.10	0.9241
QY	5	0.0218	0.2416	-0.4517	0.4952	0.09	0.9282

The SAS System

The GENMOD Procedure

Analysis Of GEE Parameter Estimates							
Empirical Standard Error Estimates							
Parameter		Estimate	Standard Error	95% Confidence Limits		Z	Pr > Z
QY	6	-0.1711	0.2391	-0.6398	0.2975	-0.72	0.4742
QY	7	0.2834	0.2215	-0.1507	0.7175	1.28	0.2007
QY	8	-0.2364	0.2465	-0.7195	0.2467	-0.96	0.3375
QY	9	-0.1407	0.2438	-0.6185	0.3371	-0.58	0.5638
QY	10	-0.2593	0.2457	-0.7409	0.2223	-1.06	0.2913
QY	11	0.1075	0.2268	-0.3370	0.5520	0.47	0.6354
QY	12	-0.3110	0.2482	-0.7974	0.1754	-1.25	0.2102
QY	13	-0.5082	0.2634	-1.0245	0.0080	-1.93	0.0537
QY	14	-0.3390	0.2439	-0.8171	0.1391	-1.39	0.1646
QY	15	-0.2712	0.2424	-0.7462	0.2038	-1.12	0.2631
QY	16	-0.5777	0.2637	-1.0944	-0.0609	-2.19	0.0285
QY	17	-0.8700	0.2848	-1.4281	-0.3119	-3.06	0.0022
QY	18	-0.5331	0.2339	-0.9915	-0.0747	-2.28	0.0226
QY	19	0.1023	0.2010	-0.2917	0.4963	0.51	0.6109
QY	20	-0.6048	0.2500	-1.0948	-0.1147	-2.42	0.0156
QY	21	-0.9447	0.2732	-1.4802	-0.4093	-3.46	0.0005
QY	22	-0.2789	0.2241	-0.7182	0.1604	-1.24	0.2133
QY	23	0.0000	0.0000	0.0000	0.0000	.	.
AGE		-0.0408	0.0203	-0.0807	-0.0009	-2.00	0.0450

Wald Statistics For Type 3 GEE Analysis			
Source	DF	Chi-Square	Pr > ChiSq
PlaceTime5	4	216.21	<.0001
QY	22	118.49	<.0001
AGE	1	4.02	0.0450

*The SAS System**The GENMOD Procedure*

Contrast Estimate Results										
Label	Mean Estimate	Mean		L'Beta Estimate	Standard Error	Alpha	L'Beta		Chi-Square	Pr > ChiSq
		Confidence Limits	Confidence Limits				Confidence Limits	Confidence Limits		
Placetime5: 1 vs 5	3.1681	2.3528	4.2660	1.1531	0.1518	0.05	0.8556	1.4507	57.70	<.0001
Exp(Placetime5: 1 vs 5)				3.1681	0.4809	0.05	2.3528	4.2660		
Placetime5: 2 vs 5	2.6626	2.2754	3.1158	0.9793	0.0802	0.05	0.8221	1.1365	149.15	<.0001
Exp(Placetime5: 2 vs 5)				2.6626	0.2135	0.05	2.2754	3.1158		
Placetime5: 3 vs 5	1.8522	1.3685	2.5068	0.6164	0.1544	0.05	0.3137	0.9190	15.93	<.0001
Exp(Placetime5: 3 vs 5)				1.8522	0.2860	0.05	1.3685	2.5068		
Placetime5: 4 vs 5	2.0071	1.7242	2.3363	0.6967	0.0775	0.05	0.5448	0.8486	80.82	<.0001
Exp(Placetime5: 4 vs 5)				2.0071	0.1855	0.05	1.7242	2.3363		
Placetime5: 1 vs 2	1.1898	0.8510	1.6636	0.1738	0.1710	0.05	-0.1613	0.5090	1.03	0.3094
Exp(Placetime5: 1 vs 2)				1.1898	0.2035	0.05	0.8510	1.6636		
Placetime5: 3 vs 4	0.9228	0.6577	1.2949	-0.0803	0.1728	0.05	-0.4191	0.2585	0.22	0.6422
Exp(Placetime5: 3 vs 4)				0.9228	0.1595	0.05	0.6577	1.2949		

Scott, Robert L. (DHHS)

From: Wells, Eden (DHHS)
Sent: Thursday, October 15, 2015 10:52 AM
To: Minicuci, Angela (DHHS)
Cc: Peeler, Nancy (DHHS); Scott, Robert L. (DHHS); Eisner, Jennifer (DHHS); Dykema, Linda D. (DHHS)
Subject: Re: Gov lead site

Ok/ clear! Yes- the lead water sheet that Hilda sent out last eve attached to her update. We should send that out to our/ MDHHS human services folks, WIC clinics etc in Flint- along with the interagency link

Sent from my iPhone

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>> To put on the Flint water website? Yes, I can do that.

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>> Sent: Wednesday, October 14, 2015 3:45 PM
>> To: Peeler, Nancy (DHHS) <PeelerN@michigan.gov>
>> Cc: Scott, Robert L. (DHHS) <ScottR9@michigan.gov>; Minicuci, Angela (DHHS) <MinicuciA@michigan.gov>; Eisner, Jennifer (DHHS) <EisnerJ@michigan.gov>
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*Population Health and Community Services Administration
Flint Water Daily Briefing Summary*

Daily Briefing

Access Code: [REDACTED]

Date: 10-15-15

Attendees: Sue Moran, Mikelle Robinson, Linda Dykema, Mark Miller, Corinne Miller, Rashmi Travis, Nancy Peeler, Linda Scott, Kris Schoenow, Eden Wells, Jennifer Lixey, Richard Thelen, Bob Scott, and Jon Gonzalez

Daily Activity Summary

Filter/Water Distribution

- Kris Shoenow (MDHHS) has been in discussions with Tamara Brickey (GCHD) to enhance the cloud-based database to track the type of filter distributed and client type.

Blood Testing

- The draft of the protocol has been completed; however, revisions are expected.
- There will be a meeting on Oct 19 to finalize the testing protocol and discuss case management protocols.
- Politicians are inquiring about the locations of testing sites. There will be testing sites in the City of Flint.
- Toni LaRocco (GCHD) is in discussions with UM-Flint to provide nurses to increase testing capacity.

EBL Investigations

- Wes Priem (MDHSS) developed a data collection document that he referenced on Oct 14.
- There are reporting requirements per administrative rule; however, there is no enforcement mechanism. Currently, the following are collected for each client: child's name, child's date of birth, and child's address. Other data elements are not currently collected as effectively.
- There are concerns with being able to conduct quality assurance on record entries into this database.
- There are also data privacy concerns pertaining to CLPPP surveillance data and who we easily share this data with.
- Guidance on the data collection changes will be sent out to the provider list, including laboratories across the state.

Funding

- House and Senate approved \$9.3m supplemental bill on Oct 15. Bill is awaiting Governor's signature.
- Currently, this is a one-time appropriation and the funding is not currently allocated for testing.
- It was estimated that four nurses would be needed for in-home visit aspect of case management.
- The best option may be to send the nurse funding to GCHD; however, alternative approaches could be to send it to the Children's Healthcare Access Project or Hurley.
- The entity responsible for the training and supervision of the nurses providing case management needs to be addressed.

Page 1 of 3

Communications

- Guidance about data reporting will be created and disseminated to providers.
- The water FAQ was approved by MDHHS and GCHD and has publicly disseminated.
- Some minor changes will be made to the infographic before it is sent for GCHD review.

Action Item	Date Initiated	Due Date	Party Responsible	Pending Activities	Additional Notes
Create Testing and Case Management Protocol	October 13	October 14	Eden Wells, Rashmi Travis, Eden Wells, Toni LaRocco (GCHD), and Dr. Gary Johnson (GCHD)	Case management protocol creation.	Testing protocol draft is complete and being vetted.
Send FAQ to Mark Valacak once it's approved by MDHHS Communications	October 13	TBD	Mark Miller	None	Complete
Add fields to cloud-based filter distribution database	October 13	TBD	Kris Schoenow & Mark Valacak (GCHD)		Discussions are on-going and there are no substantial known barriers to completion.
Determine what additional data should be collected for case management and abatement efforts	October 14	October 15	Wes Priem	Draft submitted on 10/15. Revisions forthcoming.	
Create message to Medicaid (billing)	October 14	October 14	TBD	None	Complete

Obtain list of primary care providers from GCHD	October 14	October 15	Mark Miller	None	Complete
Action Item	Date Initiated	Due Date	Party Responsible	Pending Activities	Additional Notes
Develop outreach to lab providers re: reporting requirements	October 15	TBD	Bob Scott		
Develop plan for hiring/training of 4.0 FTE nurses to support case management efforts.	October 15	TBD	Nancy		

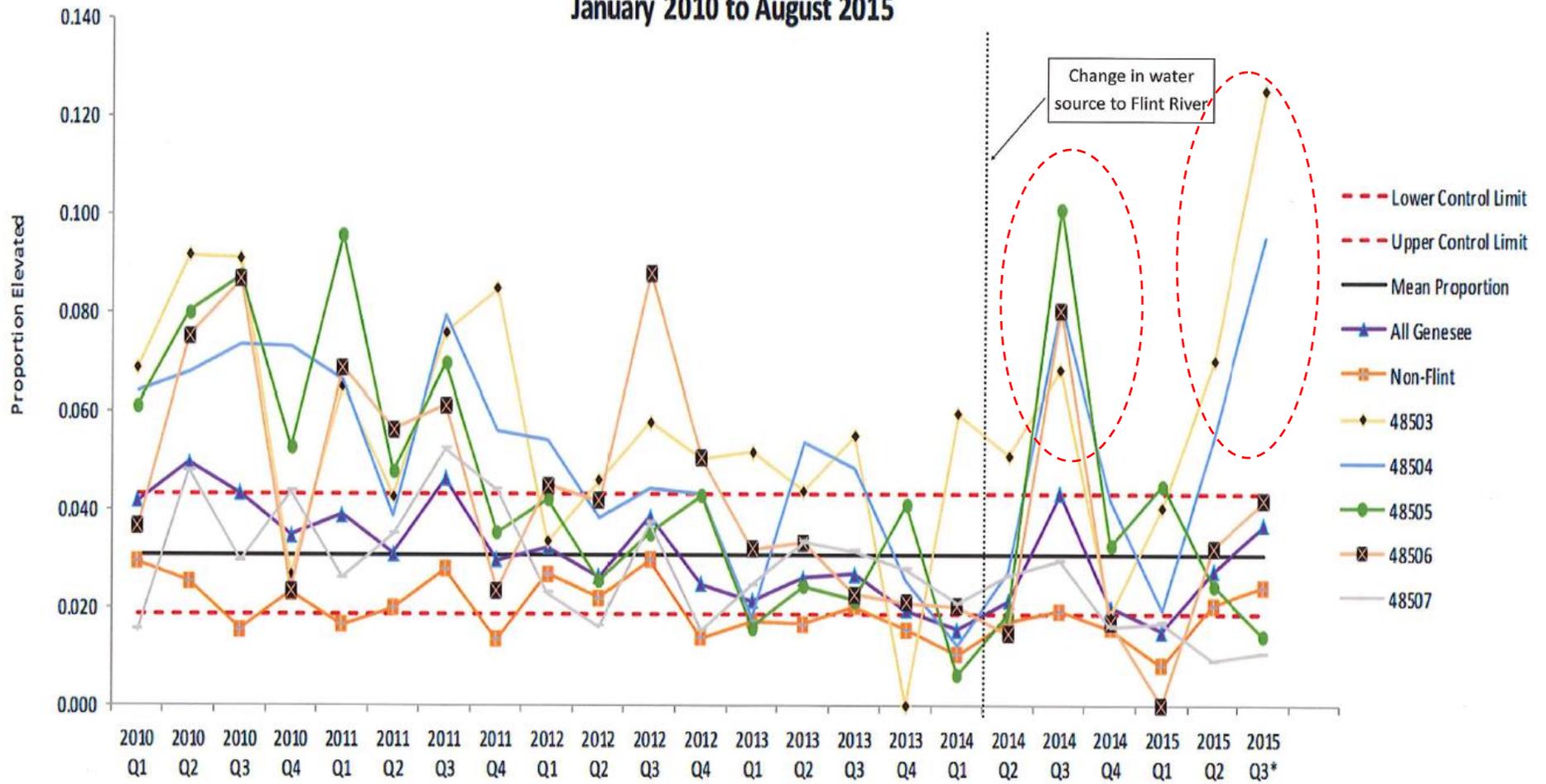
Elevated blood lead levels (5 µg/dl) among tested children < 6 years old by quarter

Date	All Genesee	Non-Flint	Zip Code 48503 only	Zip Code 48504 only	Zip code 48505 only	Zip code 48506 only	Zip code 48507 only
2010 Q1	4.2%	2.9%	6.9%	6.4%	6.1%	3.6%	1.5%
2010 Q2	4.9%	2.5%	9.1%	6.7%	8.0%	7.5%	4.8%
2010 Q3	4.3%	1.5%	9.1%	7.3%	8.7%	8.6%	2.9%
2010 Q4	3.5%	2.3%	2.7%	7.3%	5.3%	2.3%	4.3%
2011 Q1	3.9%	1.6%	6.5%	6.6%	9.6%	6.9%	2.6%
2011 Q2	3.1%	2.0%	4.3%	3.8%	4.8%	5.6%	3.5%
2011 Q3	4.6%	2.8%	7.6%	7.9%	7.0%	6.1%	5.2%
2011 Q4	3.0%	1.3%	8.5%	5.6%	3.5%	2.3%	4.4%
2012 Q1	3.2%	2.7%	3.3%	5.4%	4.2%	4.5%	2.3%
2012 Q2	2.6%	2.2%	4.6%	3.8%	2.5%	4.2%	1.6%
2012 Q3	3.8%	3.0%	5.8%	4.4%	3.5%	8.8%	3.7%
2012 Q4	2.5%	1.4%	5.0%	4.3%	4.3%	5.0%	1.5%
2013 Q1	2.1%	1.7%	5.2%	1.8%	1.6%	3.2%	2.4%
2013 Q2	2.6%	1.7%	4.4%	5.3%	2.4%	3.3%	3.3%
2013 Q3	2.7%	2.0%	5.5%	4.8%	2.1%	2.3%	3.2%
2013 Q4	1.9%	1.5%	0.0%	2.5%	4.1%	2.1%	2.8%
2014 Q1	1.5%	1.0%	5.9%	1.2%	0.6%	2.0%	2.1%
2014 Q2	2.1%	1.7%	5.1%	2.7%	1.9%	1.4%	2.6%
2014 Q3	4.3%	1.9%	6.8%	8.2%	10.1%	8.0%	2.9%
2014 Q4	2.0%	1.6%	1.8%	4.1%	3.3%	1.7%	1.6%
2015 Q1	1.5%	0.8%	4.0%	1.9%	4.5%	0.0%	1.7%
2015 Q2	2.7%	2.0%	7.0%	5.4%	2.4%	3.2%	0.9%
2015 Q3*	3.7%	2.4%	12.5%	9.5%	1.4%	4.2%	1.1%

Non Flint = Patient residence zip codes all other in Genesee County

*Q3 2015 includes test reports received through August 30th. Zip codes 48501 and 48502 were suppressed due to fewer than 5 positive tests for entire time period.

Elevated blood lead levels (5 $\mu\text{g}/\text{dl}$) among tested children < 6 yrs old by quarter, Genesee County, January 2010 to August 2015



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>> -----

Population Health and Community Services Administration
Flint Water Daily Briefing Summary

Daily Briefing

Access Code: [REDACTED]

Date: 10-16-15 (Friday) 12:30 to 1 PM Updates in BOLD

Attendees: Mark Miller, Rashmi Travis, Nancy Peeler, Linda Scott, Kris Schoenow, Eden Wells, Jennifer Lixey, Richard Thelen, Bob Scott

Daily Activity Summary

Filter/Water Distribution

- Kris Schoenow (MDHHS) has continued discussions with Tamara Brickey (GCHD) to enhance the cloud-based database to track the type of filter distributed and client type. **Integration of the data from Kris's area into the database is going smoothly.**

Blood Testing

- The draft of the protocol has been completed; however, revisions are expected. **There will be a meeting on Oct 19 to finalize the testing protocol and discuss case management protocols.**
- Politicians are inquiring about the locations of testing sites. **McLaren will be testing on Nov. 5th. At our 3 PM call on Friday, we'll ask if GCHD can put together a comprehensive schedule.** There will be testing sites in the City of Flint.
- Toni LaRocco (GCHD) is in discussions with UM-Flint to provide nurses to increase testing capacity.
- Rashmi will check with Medicaid on whether adults would be covered for testing.
- MDHHS will work with GCHD to cover testing for folks uninsured or who can't pay.

EBL Investigations

- Wes Priem (MDHSS) developed a data collection document that he referenced on Oct 14. **This will be in the testing protocol.**
- There are reporting requirements per administrative rule; however, there is no enforcement mechanism. Currently, the following are collected for each client: child's name, child's date of birth, and child's address. Other data elements are not currently collected as effectively.
- There are concerns with being able to conduct quality assurance on record entries into this database.
- There are also data privacy concerns pertaining to CLPPP surveillance data and who we easily share this data with.
- Guidance on the data collection changes will be sent out to the provider list, including laboratories across the state.
- **Budget and contracts are anxious to assist on the arrangements for the follow-up nurses and environmental personnel.**

Funding

- House and Senate approved \$9.3m supplemental bill on Oct 15. Bill was signed by Governor.
- Currently, this is a one-time appropriation and the funding is not currently allocated for testing.
- It was estimated that four nurses would be needed for in-home visit aspect of case management.
- The best option may be to send the nurse funding to GCHD; however, alternative approaches could be to send it to the Children's Healthcare Access Project or Hurley.
- The entity responsible for the training and supervision of the nurses providing case management needs to be addressed. The GCHD feels that "Sherry Taylor" might be up to the task.

Communications

- Guidance about data reporting will be created and disseminated to providers.
- The water FAQ was approved by MDHHS and GCHD and has been publicly disseminated.
- Some minor changes will be made to the infographic before it is sent for GCHD review.
- Mark Miller will inquire as to the status of the MDARD Restaurant information document.

Action item	Date Initiated	Due Date	Party Responsible	Pending Activities	Additional Notes
Create Testing and Case Management Protocol	October 13	October 14	Eden Wells, Rashmi Travis, Eden Wells, Toni LaRocco (GCHD), and Dr. Gary Johnson (GCHD)	Case management protocol creation.	Testing protocol draft is complete and being vetted. Probably finalized on Oct. 19 th .
Send FAQ to Mark Valacak once it's approved by MDHHS Communications	October 13	TBD	Mark Miller	None	Complete
Add fields to cloud-based filter distribution database	October 13	TBD	Kris Schoenow & Mark Valacak (GCHD)		Discussions are on-going and there are no substantial known barriers to completion. Integration of the data is

					going well.
Determine what additional data should be collected for case management and abatement efforts	October 14	October 15	Wes Priem	Draft submitted on 10/15. Revisions forthcoming.	
Create message to Medicaid (billing)	October 14	October 14	TBD	None	Complete
Obtain list of primary care providers from GCHD	October 14	October 15	Mark Miller	None	Complete. GCHD has a complete list and can use that as vehicle for anything needing to go to providers.
Action Item	Date Initiated	Due Date	Party Responsible	Pending Activities	Additional Notes
Develop outreach to lab providers re: reporting requirements	October 15	TBD	Bob Scott		Sandip has a vehicle for distribution of information to the labs.
Develop plan for hiring/training of 4.0 FTE nurses to support case management efforts.	October 15	TBD	Nancy		

From: Minicuci, Angela (DHHS)
Sent: Wednesday, October 21, 2015 1:05 PM
To: Peeler, Nancy (DHHS); Scott, Robert L. (DHHS); Wells, Eden (DHHS)
Subject: BLLs Latest

Hi Nancy and Bob,

Out of curiosity, could we begin looking at pulling some data about recent Flint BLL data? I think all results have to be reported to us within 5 days of the test result, correct?

If so, is there any chance we can begin taking a look at what that data is telling us? Not wanting to do anything with it yet, but just trying to think a little more proactively.

Thanks,

Angela Minicuci

Office of External Relations and Communications
Michigan Department of Health and Human Services
Office: [\(517\) 241-2112](tel:5172412112)
Mobile: [\(517\) 763-3609](tel:5177633609)
minicucia@michigan.gov
www.michigan.gov/mdhhs

From Michigan Radio (Dec 16, 2015):

After ignoring and trying to discredit people in Flint, the state was forced to face the problem

...

Lee Anne Walters listened to all of these things about this hypothetical child. And she shed a few tears for a very real kid. Her four year old son, Gavin.

“The state nurse told me, oh, I understand your son has lead poisoning, but it’s not as bad as it could be, he’s only going to lose a few IQ points,” she remembers. “No, that’s my child. How would you feel if someone told you that about your child? How is that fair to him?”

It took a couple weeks, but eventually, officials in Lansing held their own press conference.

...

<http://michiganradio.org/post/after-ignoring-and-trying-discredit-people-flint-state-was-forced-face-problem#stream/0>

From Detroit Free Press (Dec 17 2015):

When did state know kids in Flint were lead poisoned?

Officials at the state department of health say they didn't know what was happening until a Flint pediatrician released her own analysis in September -- even though data previously collected by the state showed the same trend, a reversal in a decades-long decline in the percentage of kids with lead in their blood.

And the health department has been stalling a Virginia Tech University researcher who has been trying to get public records that could show who knew what, and when.

...

Virginia Tech's Marc Edwards, a MacArthur genius grant recipient who has tested water samples from hundreds of Flint homes, submitted a request under the state's Freedom of Information Act for documents related to elevated blood-lead levels in Flint kids to the state health department in early November. The department notified him later that month that the documents he'd requested were ready. He paid the state's tab, and waited. He's still waiting.

A health department lawyer wrote in an e-mail to Edwards that a "litigation hold" placed by state Attorney General Bill Schuette's office, because of a lawsuit filed by Flint residents alleging the state acted improperly when it switched to river water, meant she couldn't release the documents. But Schuette's office told a Free Press reporter that there was no "litigation hold" (a term Free Press lawyer Herschel Fink, who has decades of experience litigating the rules surrounding public documents, said he'd never heard).

When Edwards informed the lawyer that the AG's office hadn't supported the notion of a litigation hold, the health department lawyer said she needed to review the documents to see if any were subject to attorney-client privilege. Again, Fink looked askance at this explanation: Public documents don't become private by simply virtue of being associated with a lawsuit.

...

Health department spokeswoman Jennifer Eisner wrote in an e-mail: "We work closely with our 45 local health departments across the state to provide public health services. Historically, a request would come to MDHHS from the local health department to conduct epidemiological analysis before our department would have stepped in. As part of our after-action report, we continue to review how we will conduct this process in the future."

<http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/12/17/flint-water-lead/77365380/>

From Flintwaterstudy.org (Dec 21, 2015):

In tears and seeking health information, she called Lansing and was patched through to the state lead poisoning nurse “Karen.” According to Walters the nurse stated of her son’s 6.5 ug/dL blood lead that “He is barely lead poisoned. If CDC had not changed their lead poisoning standard from 10 down to 5, we would not be having this conversation.” Angry, Walters protested, at which point nurse Karen stated “I am working with kids in their 40’s and 50’s. It is just a few IQ points..it is not the end of the world.”