



National Center for  
Environmental Health  
Agency for Toxic Substances  
and Disease Registry

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# **LEAD POISONING PREVENTION SUBCOMMITTEE MEETING MINUTES**

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Meeting Date: February 9, 2016

Meeting Location: Chamblee 107, Room 1B

Recorded By: [Cheryl Everhart](#)

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## ATTENDANCE

	Title	Organization	Present
			Y
Name	Title	CIO	Y/N/Phone
William Cibulas	Designated Federal Official	NCEH/ATSDR/OADS	Y
John Decker	Associate Director-OS	NCEH/ATSDR/OADS	Y
Sharunda Buchanan	Director, EEHS	NCEH/ATSDR/EEHS	Y
Chinara Kennedy	Sr. Health Scientist	NCEH/ATSDR/OADS	Y
Lynn Wilder	ADS for DCHI	NCEH/ATSDR/DCHI	Y
Matthew Strickland	Chair	Lead Poisoning Prevention Sub-Committee/BSC/NCEH/ATSDR	Phone
Elizabeth A. Colón	Member	Lead Poisoning Prevention Sub-Committee/BSC/NCEH/ATSDR	Phone
Nathan M. Graber	Member	Lead Poisoning Prevention Sub-Committee/BSC/NCEH/ATSDR	N
Michael J. Kosnett	Member	Lead Poisoning Prevention Sub-Committee/BSC/NCEH/ATSDR	Phone
Jennifer A. Lowry	Member	Lead Poisoning Prevention Sub-Committee/BSC/NCEH/ATSDR	Phone
Mark A. Maddaloni	Member	Lead Poisoning Prevention Sub-Committee/BSC/NCEH/ATSDR	Phone
Patrick Parsons	Member	Lead Poisoning Prevention Sub-Committee/BSC/NCEH/ATSDR	Phone
John Belt	Member	Lead Poisoning Prevention Sub-Committee/BSC/NCEH/ATSDR	Phone
Melissa Perry	Chair	Board of Scientific Counselors/NCEH/ATSDR	Phone
Patrick Breyse	Director	NCEH/ATSDR	Phone
Donna Knutson	Acting Deputy Director	NCEH/ATSDR	Phone
Mary Jean Brown	SME-Lead	NCEH/ATSDR/EEHS	Phone
John Sarisky	SME-Lead	NCEH/ATSDR/EEHS	Phone
Dr. Mona Hanna-Attisha	Pediatrician	Genesee County, Flint, MI	Phone
Anthony Pavone	Sanitarian	Genesee County Health Department	Phone
Dr. Lawrence Reynolds	President & CEO	Mott Children's Health Center	Phone
Kirk Smith	President & CEO	Greater Flint Health Coalition	Phone
Eric Dziuban	Member	Children's Health Team-Flint Response, w/in Epi/Surv	Y
Jessica Franks	Member	Children's Health Team-Flint Response, w/in Epi/Surv	Y
Rebecca Philipsborn	Member	Children's Health Team-Flint Response, w/in Epi/Surv	Y
Cheryl Everhart	Executive Assistant	NCEH/ATSDR/OADS	Y
Sandra Malcom	Committee Management Specialist	NCEH/ATSDR/OADS	Y
Shirley Little	Management & Program Analyst	NCEH/ATSDR/OADS	Y

### MEETING LOCATION: BUILDING: CHAMBLEE 107

Conference Room: 1B

Conference Line: 1-877-315-6535 participant passcode: 383520

## MEETING START

Meeting Schedule Start: 12:00PM

Meeting Actual Start: 12:00PM

Meeting Scribe: Cheryl Everhart

## AGENDA

### **Welcome, Introductions, Confirmation of Quorum, Conflict of Interest**

William Cibulas, Ph.D., M.S., Designated Federal Official (NCEH/ATSDR)

Meeting Call to Order

Introductions and Roll Call of Members

Confirmation of Quorum- 6 members, 1 joined late

Asked if any member has a Conflict of Interest- no response

Matthew J. Strickland, Ph.D., M.P.H., Chair, LPP Subcommittee, BSC NCEH/ATSDR

Comments:

- Thank you for joining the discussion.
- The role of this sub-committee is to provide recommendations to the NCEH/ATSDR Board of Scientific Counselors only.

### **Comments from NCEH/ATSDR Director**

Patrick N. Breysse, Ph.D., C.I.H., Director (NCEH/ATSDR)

Comments:

- CDC wants to be transparent in all of its activities.
- CDC's mission in Flint is to provide technical public health assistance to the Michigan Department of Health and Human Services (MDHHS) and the Genesee County Health Department.
- CDC/NCEH/ATSDR wants to consider opportunities for broadening its Children's Health Prevention Programs.
- CDC/NCEH/ATSDR would like to retool its programs to be in a better position to identify future problems like this.

### **Review of Charge to Subcommittee Discussion**

William Cibulas, Ph.D., M.S., Designated Federal Official (NCEH/ATSDR)

Matthew J. Strickland, Ph.D., M.P.H., Chair, LPP Subcommittee, BSC NCEH/ATSDR

Charge to the Lead Subcommittee of the NCEH/ATSDR Board of Scientific Counselors

*Note: Recommendations from the Lead Subcommittee can be proposed only to the NCEH/ATSDR Board of Scientific Counselors for deliberation and possible adoption. Recommendations from the subcommittee may not be made directly to NCEH/ATSDR.*

## Background:

After a change in the water source servicing Flint, Michigan from Detroit City Water to the Flint River, officials identified high lead levels in the water. The Federal Government (with HHS as the Lead Federal Agency) is operating in support of the City of Flint, Genesee County and the State of Michigan as they develop a response and recovery plan to mitigate exposure to lead in the water system. While the source of drinking water returned to the Detroit City Water system, corrosion which occurred during the use of the Flint River water resulted in, among other concerns, potable water exceeding the national drinking water action level for lead. On December 14, 2015 Flint Mayor Weaver declared a State of Emergency, and federal assistance under a Unified Coordination Group (UCG) began in January 2016.

CDC's mission is to provide technical public health assistance to Michigan Department of Health and Human Services (MDHHS), and the Genesee County Health Department-- as part of the overall Federal Government effort--in response to increased lead levels in the water system to identify the size and scope of the problem and create a plan to mitigate short and long-term health effects of lead exposure. Focus areas are: response and recovery, science, lead poisoning prevention and management, risk communication, general management support, and liaison with federal agencies.

## **Prevalence Study of Current Blood Lead Levels (Item #1 on Charge)**

### **Subcommittee Discussion**

NCEH program staff available to answer questions  
Sharunda D. Buchanan, Ph.D., Director, DEEHS

Dr. Strickland - Question 1: Does the subcommittee believe that conducting a prevalence study of current blood lead levels among children 0 – 6 years of age, to include the time period after Flint returned to the Detroit water supplier (approximately October 1, 2015 to present), provide useful public health information? What would be the best way to conduct the study?

### Discussion:

- BLL will only tell us what happened in the past month; recognizing that this will be minimally informative of what happened when the water was contaminated.
- Committee - What is the purpose of the study?
- Dr. Breyse – There is a need to: establish a baseline; provide some reassurance to the community that they can use the water safely; develop a long term maintenance program to detect changes in BLL over time; and, identify children with high BLL for case management.
- Committee members – There may be a need to look beyond the population of Flint, during and afterwards; and to educate parents and glean information. It is not clear whether this is a study versus public health surveillance.
- Dr. Breyse – We would not characterize the proposed screening as research. The purpose is to identify period prevalence in the community, and to identify public health value going forward. It is complicated; there is no trust in community. This needs to be done carefully so that the BLL survey is not used to say there is no problem. These children are at risk for long term health consequences, and the

resources of the community are unclear. We would not dismiss doing a prevalence study in the future if this is desired by the Flint community.

- Dr. Mona Hanna-Attisha - The city of Flint is opposed to a research study that would serve largely as an academic exercise, and provide false reassurance to the community.
- Dr. Strickland – We recognize that children need testing and do not want to scale back too much from the BLL screening program.
- Committee members – There are several issues here. How do we manage the children and is the water safe to drink? The latter issue goes beyond Flint. How do we define safe drinking water? Is it using the EPA Lead & Copper rule?
- Dr. Breyse – Let's stay on Flint. Water quality is in the EPA lane and EPA has the authority to define when water is safe. EPA is collecting many water samples in Flint, but we do not know what this ultimately means for children's exposures.
- Committee members – Can you explain more about safe levels of exposure. There is the perception that if a water system is in compliance with the Lead & Copper rule that it provides a safe level of exposure. Should CDC advise EPA on what to consider a safe level of lead in water?
- Dr. Breyse – The answer is yes. CDC will provide advice and recommendations to EPA when it is considering the Lead and Copper rule.
- Dr. Strickland – Prevalence study: What should we do? How expansive should the testing be? How important is the baseline?
- Dr. Cibulas – I spent two weeks in Flint. Genesee County has responsibility for making lead blood level testing available to the community. The State (MDHHS) is receiving data and publishing it biweekly on its website. We have seen summary data: to date of 9000 children 6 and under, about one-half have been tested. The State reports that there is no longer a strong surge coming from the community for additional testing. We have not seen individual BLL data at this time.
- Committee members – Can NCEH summarize the data for the community, distribute the current data and explain what technique was used for determining BLL?
- Dr. Buchanan- From what we understand, summary data is on the Michigan DHHS website and available to everyone. We have a team on the ground helping MI look at the data. We do not have access to that data right now.
- Dr. Lowry – When looking at the MI. BLL levels now, we need to recognize that they are not a true reflection of baseline. The last thing we want to do is tell a community that they do not have a lead blood problem based on recent data when the peak exposures may have occurred sometime during the past. Moving forward we need to concentrate on developmental issues rather than focusing on BLLs.
- Dr. Breyse – CDC made the recommendation to try to screen everyone a while ago. That recommendation is in place. There is strong resistance from the healthcare provider community in Flint. The county health department is trying to make it happen. The state is operationalizing that. From my assessment on the ground, the necessary resources are not adequate. Someone is going to have to step up to provide a lot more resources to get this job done.
- Committee members – Looking at what happen 18 months ago, is BBL testing mandatory in Michigan like it is in NY and NJ at ages 1 & 2? If they do, can we use that data to at least get a picture of the children in Flint that may have been getting a routine screening?
- Dr. Lowry – Mandatory is relative. You can tell the physicians that it is mandatory that they test children all children 1 & 2 years old in Medicaid, but not all

physicians will order it. The data that Michigan has will probably be on children ages 1 & 2 that have been tested. Whether mandated or not, you are only likely getting 15-20% of the population that should be tested. We know that the number of elevated BLL doubled/tripled.

## **Retrospective Assessment of Lead Exposures (Item #2 on Charge)**

### **Subcommittee Discussion**

NCEH program staff available to answer questions  
Sharunda D. Buchanan, Ph.D., Director, DEEHS

Dr. Strickland - Question 2: Between about 4/15/2014 and 10/1/2015, about 99,000 residents of Flint were exposed to water with elevated lead concentrations.

- a. For this period of time, what would be the best way to retrospectively assess lead exposure from water, particularly for the population of children 0 – 6 years of age?
- b. How should seasonal changes in blood lead levels be assessed in the data?
- c. How should environmental data (water lead levels, lead service line data, etc.) be linked to this assessment?
- d. Would overlaying environmental data with BLL data be a scientifically feasible approach to identify subpopulations that may have excessive lead exposure, but for whom no blood lead data exists?

#### Discussion:

- Committee members – Michigan is posting data for children 6 years and younger. We need to understand how much and what kind of data we have. 737 children have been tested by the medical center that runs most BLLs for Genesee County. To the extent that data could be further analyzed, according to location, and controlled for lead service lines and water lead levels, we might be in a position to understand the role of water. It is also possible that to a certain extent BLLs may have socioeconomic and housing variables that could be taken into account. CDC, with its expertise in lead and epidemiology, needs to look at the data to be in a better position to answer Charge #2.
- Dr. Cibulas – Asked Dr. Buchanan if she could summarize the type of data available to the program from its surveillance program.
- Dr. Buchanan deferred to Dr. Mary Jean Brown.
- Dr. Brown – The CDC Childhood Blood Lead surveillance system has data that goes back to 2000 of the number of the children in the country that are tested and reported to CDC. This is a two part process. First the child has to be tested and then the state agency has to report it. We require quarterly reporting to CDC from all of our funded programs that is 29 states and District of Columbia. We have other programs that report to us because they think it is a good thing to do. Last year we received 2.5 million BLLs from children across the country, and published the summary on our website by state and large cities like New York City. The data are difficult to access at the county level. We work to assure that duplicate data are not counted.
- Committee members – Are data available to expand upon the data set published by Dr. Mona Hanna-Attisha in the American Journal of Public Health [[Elevated Blood Lead Levels in Children Associated with the Flint Drinking Water Crisis: A Spatial Analysis of Risk and Public Health Response](#)]?

- Dr. Brown – CDC cannot expand data because we do not have address information. The data are housed at MDHHS. There is still a question as to whether they will provide granular data to CDC.
- Dr. Breyse –I would like to focus right now on if there is an approach or path forward that we think can be taken using the information that we have - 1) what blood levels we have during the period of time when the water was contaminated, 2) water sampling data, 3) what we know about lead service lines, 4) what we know about lead absorption etc. and put this into models that we can predict what the blood levels might have been for a kid who was drinking the water serviced by lead service lines?
- Committee members - The answer is yes, modeling is possible. There are studies around the world including some studies in the UK that employ modeling as a way to predict BLLs from water levels. This could generate some useful information. However, we can't be sure of the water collection protocol; e.g., did the tests measure solubilized lead verses particulate lead? You would need to give consideration to the ages of children – young children have much higher exposure to lead in water.
- Dr. Breyse – Would the Committee be able to advise on design and interpretation?
- Dr. Strickland – You would have to balance the time consideration. This is a big effort that would take a couple years to complete.
- Committee members – Ninety-four percent of children are Medicaid-eligible. We should recommend adherence to Medicaid screening guidelines. Certain states have done much better jobs of having Medicaid children surveyed, Wisconsin has a very good system for tracking providers and children eligible for Medicaid. Here you could get percent screened. Another thing to consider to enhance BLL testing is linking reimbursement to adherence, as has been done with some Healthcare Effectiveness Data and Information Set (HEDIS) measures. Just because the programs are in place, doesn't mean that physicians are ordering the tests.
- Dr. Breyse - There is a lot of ongoing effort trying to reconstruct what the BLLs were.
- Committee members - Has anyone talked about lead-based paint. Shouldn't we be putting resources to address that issue?
- Dr. Strickland - How should we think about environmental sources other than water? You would need to control for that. The community was poisoned, and deserves aggressive amelioration to address this. But there is also a larger public health opportunity here. While we aggressively intervene for these children, we should follow the kids and use this as an opportunity to learn more about children and lead toxicity.

### **Long-Term Health and Surveillance Programs (Item #3 on Charge)**

#### **Subcommittee Discussion**

NCEH program staff available to answer questions  
 Sharunda D. Buchanan, Ph.D., Director, DEEHS

Dr. Strickland - Question 3: Does the subcommittee recommend a long-term health and exposure surveillance strategy (including longitudinal blood lead, as well as health, behavioral and education outcomes)? How should both individual children and the population be evaluated prospectively for blood lead levels, in terms of study design and

individual care (which may include clinical and home care)? What should be the periodicity of evaluations moving forward?

Discussion:

- Committee members – The community wants us to move forward by following them developmentally. It's getting them involved in Head Start, offering what we always recommend in Pediatrics. Those are the intervention that the community wants.
- Dr. Strickland - NCEH would not be responsible. ATSDR has registry capabilities. If we think this is a good idea, and there are resources available, we would like to recommend that children are aggressively followed over time.
- Committee members – We don't have baseline data. If we get a baseline now and follow them over time, this would be helpful. We do not have the scientific data that fully inform the long term efficacy of case management in children. There was a guidance document on intervention strategies, including educational approaches, released by CDC under ACCLPP that could be of benefit for any extended study in Flint. To the extent case management is offered to children with elevated BLLs, and they are followed to see how they respond, that would add to public health knowledge. However, there is little confidence that if we do X, Y, Z, we will know how much improvement could be expected. Most data are available for children greater than 10 ug/dl, and not much is known for children in the 5 range.
- Dr. Brown – I agree the data that we have is disappointing. If case management extends into school age, much can be learned.
- Committee members - We have a lot of the data on cognition and development, but we don't have a lot of data on how interventions can alter that trajectory.

### Summary and Next Steps

Matthew J. Strickland, Ph.D., M.P.H., Chair, LPP Subcommittee, BSC NCEH/ATSDR

- Dr. Strickland - Dr. Breyse spoke about the immediate needs of the community and public health opportunities. Perhaps the latter component is more suited to what the subcommittee could think through. Does the committee think we should do cognition/development surveys now?
- Dr. Strickland - What are the most critical data needed to evaluate long-term success of these interventions.
- Dr. Breyse – That is what we need help on.
- Committee members – The adverse effects of lead toxicity are well known. Examining the long-term efficacy of intervention approaches is not an easy undertaking. Resources are necessary to conduct a comprehensive epi study. It would be a major undertaking that would require baseline data. Would it be worthwhile to extrapolate data? Children were exposed at different ages, and brain development differs depending on age. Can the children be followed over time? Some kids will not get interventions. We need to focus on Flint, but we should also consider what would benefit public health. What do these children need in the prime time of their lives?

- Dr. Strickland – We need to think about the information we would get if these kids are funneled into services and follow over time. What would we compare to? How would we know if the interventions are working? How do we design this?
- Committee members – You would need to have a control group, match them from another community where it is not being done. Having nutritional, doubling down on nutrition, head start and lead paint abatement in houses—we know these things work.
- Dr. Breyse - Could there be differences later in life between those exposed and not highly exposed? It will be hard to talk to the community about a study and control group. This might be a longer consideration, perhaps associated with a historical reconstruction.
- Committee members - Are there certain baselines that we need to collect now? Most clinicians do have some baseline developmental data. We could look at clinician baseline data; pull the information out of their EMR {Electronic Medical Records}. There are a lot of the community factor covariables. The biggest predictor of IQ is the mother's IQ—not what is found in EMR. Birth and nutritional parameters – are they in the EMR? Some are standard. Do we think we have any statistical power to detect effects in this community? There have been some studies that have looked at the impact of BLL on IQ and performance; if BLLs come down, then performance is improved. This tracks better between ages 5-9, than with early life elevated BLLs. The enduring impact of short term early life elevations in BLLs is subject to some uncertainty and debate. Long-term performance and size of population need to be considered into whether it would be possible to detect a change. In Dr. Mona Hanna-Attisha's data, among the children studied, about 5% had  $BLL \geq 5$ . It's not clear if there is sufficient statistical power here. <sup>i</sup>This should be assessed by CDC biostatisticians prior to embarking on a long-term study.
- Dr. Strickland – There are data source available to link back to birth records and gestational age.
- Committee members - There exists a good teaching opportunity here to raise concern about childhood lead poisoning. This should include an effort to increase awareness of the EPA Renovation, Repair and Painting (RRP) Rule.
- Dr. Strickland – Please send any e-mails with your thoughts after this meeting. We plan to have another meeting in two weeks.
- Dr. Cibulas - We will get minutes back to you and sub-committee members as soon as possible.
- Dr. Strickland – Our goal by the end of the next meeting is to have recommendations to offer.

## Public Comment Period

Dr. Cibulas – It is 1:30 and we are open for Public Comment

Dr. Mona Hanna-Attisha, Flint MI – Thank you for including us. I would like to reiterate our research and state data underestimated the exposure. Our research is based on the Medicaid mandate for screening ages 1 & 2. Lead and water affects more groups, including in utero and babies on formula. We may have missed many people. We are conducting the MI Public Health Initiative: First arm is assessment, on-going research, correlating lead service lines, and water maps. The second arm is do long-term neurological assessment over 6 years of age for 9000-10,000 children. We cannot sit back here. We need to build on interventions and to ethically intervene on behalf of the children.

Dr. Cibulas – There were no other public comments made and the public comment period was closed at 1:45 PM.

- Committee members – [Question for Dr. Hanna-Attisha] 9000—10,000 children. How were they recruited? Using EMR and state data. Was bone lead testing considered?
- Dr. Mona Hanna-Attisha – We looked into this, but bone analysis does not look good for children. Anything that the committee can be do is greatly appreciated
- Committee members – Will the sub-committee have a website? The ACCLPP website contained documents and guidance that provided a valuable resource to the public health community.
- Dr. Cibulas – The minutes from today’s subcommittee meeting will go on the BSC website.
- Dr. Knutson – Thank you for your time. We appreciate your thoughts, and anything that can be done is greatly appreciated.

The next Lead Poisoning Prevention Subcommittee Teleconference Call will be held on February 23, 2016 from 12:00 – 2:00 p.m.

With no further discussion or business brought before the LPP Subcommittee, Dr. Strickland adjourned the meeting at 1:45 p.m. EST on February 9, 2016.

I hereby certify that to the best of my knowledge, the foregoing Minutes of the proceedings are accurate and complete.

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Date

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Matthew Strickland, Ph.D., M.P.H.  
Chair, Lead Poisoning Prevention  
Subcommittee, Board of Scientific  
Counselors, NCEH/ATSDR

<sup>i</sup> The following comment was made by Dr. Michael Kosnett’s review of the meeting minutes.