



STATE OF MICHIGAN

DEPARTMENT OF HEALTH AND HUMAN SERVICES  
LANSING

RICK SNYDER  
GOVERNOR

NICK LYON  
DIRECTOR

April 22, 2016

The Honorable Jim Stamas, Chair  
Joint Select Committee on the Flint  
Water Public Health Emergency  
920 Farnum Building  
Lansing, MI 48909

Dear Senator Stamas:

I am responding to the questions you sent me on April 20, 2016 for the Public Hearing scheduled on April 25, 2016. Please find below the responses to your questions.

**1. What is the role of state government in ensuring that water safe for drinking and bathing is flowing from a faucet?**

Of course state government does play a role in water safety issues in Michigan. MDHHS does not monitor or test water, DEQ is responsible for water quality in the state. To the extent that water quality may pose a risk to the safety and health of residents, MDHHS does play a role in the prevention and investigation of outbreaks of water issues by working closely with our local health departments. Historically, elevated blood lead levels have been associated with exposure to gasoline, paint and soil/dust, instead of drinking water. Similarly, from an historical and medical perspective, as an airborne communicable disease, legionella has traditionally been associated with those sources where water has collected and pooled, *e.g.*, in the cooling towers, water heaters and air conditioners of larger, multi-story buildings.

**2. You became MDCH director in September 2014 and temporarily took over as interim director of DHS on January 1, 2015. Effective, April 10, 2015, you became director of MDHHS via an Executive Order that merged the DHS and MDCH into the MDHHS. Describe your familiarity with safe drinking water standards in beginning in the summer months of 2014 and coming forward. When did you first become aware of the Flint water troubles? What did you do to track the problems?**

In 1996, by executive order, oversight of environmental health programs relating to drinking water were transferred from the then-Michigan Department of Public Health (our predecessor), so I have not had to deal directly with the drinking water standards very often. I cannot recall precisely when I became aware of Flint's water troubles, believed at the time that DEQ was addressing these issues. I have since learned that over time personnel at MDHHS were looking into the matter, and it was not until they analyzed data using the same

methodology as Dr. Mona Hanna-Attisha at the end of September 2015 that they could come to a firm conclusion that there was an issue with elevated lead levels.

It's my understanding that our department has a number of employees working diligently on legionella and lead at any given time and throughout these outbreaks. I have a lot of faith and respect for the people who work in my department. They are physicians, epidemiologists, statisticians and professionals that I believe applied their knowledge and abilities to the issues they were confronted with and performed their duties in accordance with public health practices and standards. It is my understanding that they worked, and continue to work closely, with the local health department on these issues.

We began a review of the actions that our employees took but, as you know, the Governor has ordered a complete review by the Inspector General and we are cooperating in that effort. As our review is now pending the outcome of the Inspector General's review findings, and while I am not aware of any issues with our staff, we will address any and all deficiencies that the Inspector General's review uncovers and we will hold people accountable to the extent there are performance issues.

**3. Does the MDHHS have a responsibility to ensure that water flowing from a tap is safe to drink or only that water delivered to a private residence or business is safe?**

As stated before, MDEQ has the responsibility for water quality issues in the state. See answer to question 1. If there is a well issue, we work with the local health departments who conduct well testing to address those issues.

**4. Did DEQ staff discuss the health impacts of differing interpretations of the lead and copper rule (LCR) the MDHHS prior to making its decision regarding corrosion control?**

To the best of my knowledge, no conversations took place between MDHHS staff and MDEQ staff regarding the lead and copper rule or the decision around corrosion controls being added to the water in Flint.

**5. Before lead was detected at high levels in Flint, there were complaints about how the water looked and smelled and complaints about rashes caused from bathing in the water. How did the MDHHS respond to those complaints? Did the department (or MDEQ) take any action to determine what was causing those problems, particularly the rashes?**

Generally, we would have referred complaints to the local health department, DEQ or EPA.

**6. How do you respond to public criticisms that MDHHS missed warning signs of spiking childhood lead poisoning that occurred few months after switching to a corrosive river water source in 2014, and the department only changed its position after outside pressure forced the MDHHS to closely scrutinize their data in July 2015.**

I understand the perception but do not believe it accurately portrays the actions of MDHHS employees. Typically, data is not analyzed until it is collected and reviewed. As part of our investigation, there were two analyses done in July 2015 that analyzed the 2014 data.

My understanding is that we did not regularly analyze our data at zip code level. Dr. Hanna-Attisha's findings that were released at the end of September quickly prompted us to review our data using the same methodology that she used. We were able to confirm the increase in lead levels in those served by the Flint water system, consistent with Dr. Hanna-Attisha's findings.

- 7. Does the MDHHS have a policy for accepting, considering, and responding to information, concerns, or complaints from entities outside their department, whether a federal agency, another state department, independent experts, or the general public, outside of a formal public comment process? If so, does the policy set a standard for evaluating different viewpoints and the tone for responses?**

MDHHS does not have a written policy. MDHHS receives many requests for information, expressions of concerns, and/or complaints from entities outside the department, including federal agencies, other state departments, independent experts, or the general public, outside of the formal public comment process. MDHHS will forward the inquiry or complaint to the administration or individual with appropriate subject matter expertise to respond. MDHHS strives to be responsive and timely to all outside requests.

- 8. Does the MDHHS have a policy for consulting with entities outside their department?**

MDHHS does not have a written policy. MDHHS frequently consults with entities outside of the department for subject matter expertise and advisory recommendations. In some cases, legislative requirements (boilerplate) specify the organizations or qualified entities to be included, such as those required for specific task forces or commissions. In other cases, MDHHS will seek recommendations from professional organizations for nominations of individuals to serve on standing committees, advisory groups, and topic specific workgroups. In addition, federal grant requirements may specify stakeholders to be included as members of steering and/or advisory committees.

- 9. When does the MDHHS become involved in a public drinking water problem?**

Our involvement is typically triggered by a request from another State of Michigan agency such as the MDEQ, from a federal agency such as the ATSDR or the U.S. Environmental Protection Agency, from a local health department, or from a private citizen.

- 10. How are disagreements on data analysis among MDHHS staff resolved?**

MDHHS has many qualified and specialized data quality experts; if a disagreement or uncertainty occurs, resolution would be handled on a case by case basis, with consultation sought on an as needed basis.

- 11. How are disagreements on data analysis among MDEQ staff resolved?**

This question would be best answered by DEQ.

**12. What actions is the MDHHS taking to promote better communication and cooperation with MDEQ?**

In accord with the Task Force's recommendations, MDHHS has already entered into a Memorandum of Understanding with DEQ to provide a process to ensure that data and public health information is appropriately explained. As part of this process, there will be monthly communications to the departments' respective chief deputy directors as well as the population health and community services administration deputy director, to ensure that combined interests are consistent and to provide the public with consistent recommendations.

**13. How will the MDHHS respond if there is an outbreak of Legionellosis this summer in the city of Flint?**

As local county health departments are primarily responsible for the initial investigation and prevention of disease, MDHHS has been and will continue to work closely with the Genesee County Health Department (GCHD) regarding any disease outbreaks that occur in the summer months. MDHHS, GCHD, and the federal Centers for Disease Control recently partnered to create and release a Legionella toolkit for healthcare facilities and large buildings to prevent the growth of Legionella in water systems. In 2016 MDHHS issued statewide messaging to the healthcare and public health communities to increase awareness of legionellosis and reinforce the importance of appropriate identification; evaluation and response to suspect cases. GCHD has provided an approved local health department protocol to address public health surveillance, investigation and outbreak response needs during the coming season. MDHHS continues to support reporting and data management needs with the Michigan Disease Surveillance System and will address any resource or technical requests from the GCHD in support of their investigations. MDHHS continues to communicate regularly with the GCHD, MDHHS administration, MDHHS Medical Director, and CDC subject matter experts. Baseline levels of Legionnaires' Disease infections will be reported from Flint and Genesee County. We anticipate seeing initial reports of illness from GCHD beginning in the spring/summer. All Legionnaires' Disease activity in Genesee County will be reviewed to determine if these cases are sporadic or represent a continued increase of Legionnaires' Disease. The MDHHS Medical Director and surveillance staff will provide regular updates to administration on all Legionnaires' Disease activity and response activities in Genesee County.

**14. Explain the MDHHS ultimate decision to release internal emails on the flint water crisis. Who made the decision? Who was consulted prior to making the decision?**

MDHHS seeks to comply with all Freedom of Information Act (FOIA) requests, including those related to internal e-mails on the Flint water crisis, in accordance with the law. MDHHS is also working with the Executive Office's effort to collect and produce e-mails and documents related to the situation in Flint on a public website. To date, MDHHS has released over 4,000 pages of e-mails and documents related to Flint in response to FOIA requests.

**15. The Flint Water Advisory Task Force found a culture of “technical compliance” and a “minimalist approach to regulatory and oversight responsibility” within the office of Safe Drinking Water and Municipal Assistance in the MDEQ.**

**16. Do you believe this culture is limited to an office of MDEQ or is it found elsewhere throughout the DEQ?**

This question would be best answered by DEQ.

**17. What have you done to address the culture in the MDHHS?**

MDHHS supports a culture of customer responsiveness, inclusiveness, and transparency. MDHHS strives to address health equity and improve service delivery through programs that promote innovation, integration of services, and person centric focus.

**18. Did the MDHHS discover evidence of an increase in childhood lead poisoning in summer 2014?**

During summer 2014, MDHHS did not identify an increase in elevated blood lead levels in children residing in Flint. The confirmation of elevated blood lead levels in children is described in response question 22.

**19. How do you respond to public criticisms that MDHHS “stood by” as MDEQ stated that no spike in blood lead levels of children had occurred.**

I understand the perception but do not believe it accurately portrays the actions of MDHHS employees. When MDHHS was able to confirm elevated blood lead levels, the information was publicly disclosed and a public health response plan was immediately begun in coordination with MDEQ, Genesee County Health Department, and community partners. The public health response included bottled water distribution and integrated response efforts among all MDHHS programs including WIC, lead remediation, home visiting, nutrition, physical health, behavioral health, child welfare, and human services as well as distribution of education materials and messaging.

**20. How do you respond to published accounts that criticize MDHHS for: (1) attempting to stonewall or discredit efforts by outside researchers who questioned MDEQ statements; and (2) releasing incomplete data suggesting there were no problems?**

I understand the perception, especially as our initial analysis indicated that the increase of children with elevated blood lead levels had increased in 2014 was seasonal, but do not agree with the characterization of our actions.

**21. What was MDHHS reaction when the incidence of childhood lead poisoning skyrocketed above 10% in the two Flint zip codes with highest water lead risk in 2015?**

MDHHS was greatly concerned about the findings released by Dr. Mona Hanna-Attisha and the implications for child health. See also response to questions 19 and 22.

**22. We heard testimony from Genesee Health Department Officials indicated MDHHS did not agree with Dr. Mona's research until mere hours before a press conference announcing your concurrence with her findings. Why did MDHHS' previous analysis differ from that of Dr. Mona? Explain your decision for MDHHS to ultimately confirm Dr. Mona Hannah-Attisha's analysis and what lead to this decision and its public announcement?**

Standard analytic methods in the Childhood Lead Poisoning Prevention Program (CLPPP) previous to September 2015 analyzed data at the county level or health department level. It wasn't until MDHHS epidemiologists were able to look at Dr. Mona Hanna-Attisha's study presented at the press conference on September 24<sup>th</sup> that the analytic methods could be compared. Dr. Eden Wells spoke with Dr. Mona Hanna-Attisha early the following week to facilitate exchange of data sets and the analytic methods.

MDHHS epidemiologists were then able to analyze the data to smaller geographic units as Dr. Mona had done, particularly by ZIP Code. The data that the department had was more comprehensive than the data Dr. Mona Hanna-Attisha analyzed. Both Dr. Mona Hanna-Attisha and MDHHS were very interested in finding out if these findings would be similar using the MDHHS dataset. By October 1 (extensive data deduplication and additional modeling were conducted) epidemiologists preliminarily could state that the MDHHS findings were consistent to those of Dr. Mona Hanna-Attisha. Further work on data and result analysis finalized the report for release that then occurred October 2.

**23. On September 2nd 2015, Professor Marc Edwards of Virginia Tech (primary author of this article and source of the Freedom of Information Act documents cited herein) made a FOIA data request to MDHHS. He had previously made an identical request in November 2006 for a blood lead study in Lansing, and that data was provided without any problems. Why did MDHHS resist releasing documents to Professor Edwards pursuant to this FOIA request, advising him of a "Litigation Hold" and "Attorney Client Privilege"?**

MDHHS does not have a FOIA request from Professor Edwards dated September 2, 2015. Instead, MDHHS has a FOIA request from Professor Edwards dated November 1, 2015. In responding to that FOIA request, MDHHS needed to clarify the requirements of a "Litigation Hold" when responding to a FOIA request. After consulting with the Attorney General's office, MDHHS determined that a "Litigation Hold" does not preclude a public body from responding to a FOIA request. The "Attorney-Client Privilege," on the other hand, is an exemption under FOIA which a public body may use in responding to a FOIA request. MDHHS provided Professor Edwards with over 600 pages of public records that responded to his FOIA request on December 18, 2015, after careful review and redaction of protected health information (PHI).

**24. How do you explain the simultaneous difficulty Dr. Mona Hanna-Attisha of Hurley Medical Center had made in her own FOIA data request in mid-September?**

Dr. Mona Hanna-Attisha did not make a FOIA request to MDHHS. Rather, she sent her study proposal to MDHHS on September 16, 2015 in which she sought raw data, including people's

zip codes, dates of birth, blood level, and date of test. She requested the information from MDHHS program staff but received an auto-reply to her e-mail request stating the person she sent the request to was out of the office. Senator Ananich sent an e-mail to Director Lyon on September 21 asking for his assistance in answering Dr. Hanna-Attisha's request. Senator Ananich's request was forwarded to the MDHHS Institutional Review Board (IRB) on September 21. The MDHHS IRB Administrator determined that MDHHS IRB approval was necessary to release the information Dr. Hanna-Attisha sought. Dr. Hanna-Attisha sent the MDHHS IRB a formal IRB application on September 29, 2015, in which she requested a waiver of the requirement to obtain authorizations from the research subjects to disclose their protected health information for research. Follow-up to the application was needed in order for Dr. Hanna-Attisha to answer MDHHS IRB questions on the data needed for the analysis and the requested waiver of authorizations. After Dr. Hanna-Attisha answered the questions, the MDHHS IRB approved the application on October 1, 2015. MDHHS released information to Dr. Hanna-Attisha on October 2, 2015.

**25. Did the MDHHS track blood-lead levels in the summer months of July, August and September of 2014, when published accounts indicate blood lead levels in Flint had been much higher than normal?**

MDHHS CLPPP received, processed, and distributed blood lead data per protocol during those months. The data was sent to the Genesee County Health Department and placed in the MDHHS Data Warehouse so it could be accessed via the Michigan Care Improvement Registry (MCIR) system by Primary Care Providers.

**26. On October, 2, 2015 the MDHHS acknowledged there was a serious problem in Flint. It confirmed that children living in the two zip codes (48503 and 48504) identified by Professor Edwards of Virginia Tech had the highest lead in water risks, also had increased incidence of childhood lead poisoning after the switch to Flint River.**

**27. Did MDHHS create a graph showing the statistically significant spike in blood lead that occurred in summer 2014? If so, please provide the Committee with that information. Was this ever publicly acknowledged? Please provide the Committee with a copy of any such graph and supporting information.**

As a part of its ongoing investigation, DHHS created a number of graphics related to blood lead levels in the summer of 2014. The internal document, "**Elevated Blood Lead Levels Among Children <16 Years of Age; City of Flint, May 2011— April 2015**" includes a control chart graphic that shows the elevations in July, August, and September had proportions of EBLL higher than that expected from the average (mean) of the previous three years. Additional graphics were produced to show changes over time in Flint zip codes. (See graphics on two pages after signature.)

**28. Does the MDHHS possess information showing blood-lead levels increasing in summer of 2015, to the point where 9.5-12.5 percent of children in Flint's two high risk zip codes were lead poisoned?**

MDHHS has analyzed blood lead testing data to assess the proportion of children residing in Flint with elevated blood lead levels, including by residential zip code during the summer of

2015. In the summer of 2015, the proportion of children less than 6 years of age in the two high risk zip codes was 12.7 percent (48503) and 9.4 percent (48504).

**29. Would you agree that this in the range of outside analysis suggesting childhood lead poisoning in some neighborhoods was as high as 15%?**

The proportion of young children residing in zip code 48503 with an elevated lead test in the summer of 2015 was 12.7 percent. This exceeded the upper limit of the seasonal average for Flint (based on 2010-2015 data) of 10.2 percent (6.4-10.2% limits around the season average). The estimates that MDHHS has calculated for Flint are consistent with the estimates produced by Dr. Hanna-Attisha's research team.

Thank you for the opportunity to provide responses to your questions. If you have further questions or need clarification, please do not hesitate to contact me.

Sincerely,



Nick Lyon  
Director

cc: Senator Joe Hune  
Senator Jim Ananich, Minority Vice Chair  
Representative Ed McBroom, Vice Chair  
Representative Ed Canfield  
Representative Jeff Irwin

## 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?

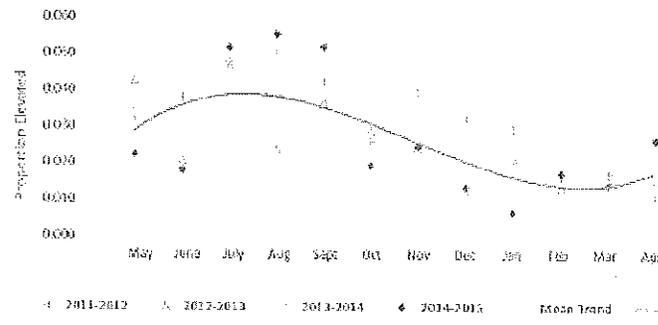
**METHODS:**

- 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  $\geq 5$   $\mu\text{g/dL}$  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.

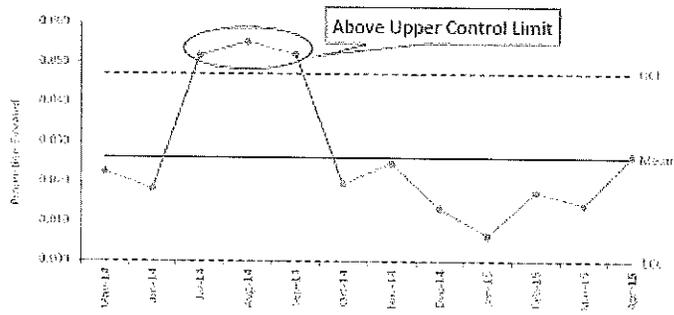
**Figure 1. Formula for Calculating Monthly Proportion of Children with Elevated Blood Lead Levels**

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

**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.