

## EPA Tools & Resources Webinar | Q&A

### Data Mapping and Analyses to Identify US Locations with High Lead Exposures

1. One of the most important tools for looking for hotspots was the Reuters BLL map— why can't there be an EPA map that actually has average BLL data by census tract etc.? And will the EPA ever make data more public and accessible? Reuters had to FOIA this info.

*Blood lead level (BLL) data are not available by census tract in every location. Across the US there is different availability of BL data and at different geographic scales (see Zartarian et al., 2022 AJPH <https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2022.307051> which summarizes publicly available BLL data and remaining challenges). See particularly Supplement Material in the AJPH article linked above, including Appendix Table D: Summary of U.S. State Health Department Publicly Available Child Blood Lead Level (BLL) Data and Reports, and Figure B, which includes US map of those available data sources by state.*

2. Why are we just referring to disproportionate places when any place with lead poisoning should be addressed?

*As stated in the EPA Lead Strategy (<https://www.epa.gov/lead/final-strategy-reduce-lead-exposures-and-disparities-us-communities>), the US has made substantial progress in reducing lead exposure, but significant disparities remain along racial, ethnic, and socioeconomic lines. Under this strategy, EPA will focus on eliminating the disparities in blood lead levels by taking specific actions to prevent childhood exposures and exposure inequities that could lead to lifelong health effects and barriers to social and economic well-being.*

*The three approaches to meeting goals of the EPA Lead Strategy specifically address high-risk communities, but also the rest of the US. They include Approach 1: Reduce lead exposures locally with a focus on communities with disparities and promote environmental justice; Approach 2: Reduce lead exposures nationally through protective standards, analytical tools and outreach; and Approach 3: Reduce lead exposures with a “whole of EPA” and “whole of government” approach.*

3. Will the research project focus solely on the Census Tract level? Or is there a prospect for including alternative geographic boundaries, like PUMAs?

*The current plan is to focus on the census tract level.*

4. All children in Pennsylvania with the blood lead test are required to report to the state health department regardless of the level – will you be willing to collaborate?

*The EPA mapping team worked directly with staff in the EPA regional offices to identify locations for the blueprint application studies. Once these studies are complete, we would like to collaborate with additional partners if resources allow.*

5. Are data from house source assessments of kids with elevated levels included in the analysis?

*We did not include any house source assessment information in our hotspot analysis.*

6. How is this data driving enforcement or is this a tool to drive future policy?

*These analyses are intended to inform Pb exposure targeting and reduction efforts. They can be useful as screening tool, with any specific enforcement actions based on more specific information.*

7. Do you differentiate among the different Pb compounds?

*The EPA mapping team relies on existing data which may or may not include speciation of the Pb compounds. When doing the analysis, only total Pb is considered.*

8. Does your analysis look at concentrations of lead in soil samples?

*The EPA mapping team did not include any soil Pb concentrations in our analysis, but it is one of a number of possible data sources we could use to ground truth our hotspot findings. Research is underway to identify available soil Pb data and other environmental Pb data to enhance the Pb indices and determine drivers of elevated Blood Lead Level hotspots.*

9. Could these heat maps be used to help remediate areas using the money dedicated from the Bipartisan Infrastructure Bill?

*We anticipate these heat maps can inform a variety of projects, using a variety of funding sources, including the Bipartisan Infrastructure Law. See recent news release: <https://www.epa.gov/newsreleases/epa-and-hhs-encourage-states-utilize-federal-resources-lead-detection-and-mitigation>*

10. How do you anticipate the impacts, if any, of the changes that occurred in the 2020 Census will be on your analyses?

*As the 2020 Census was recently made available and certain portions of the data set are not yet complete and/or publicly available, we haven't evaluated the changes. There are also differences between the 2010 and 2020 Census tract identification numbers and boundaries, which pose challenges to fully quantify the impacts on our analyses.*

11. Will doctors in other areas also do BLL tests on children to help collect data?

*EPA does not directly interact with doctors collecting BLL data and relies on data available through state and local public health agencies. If you have a question regarding a certain area, we suggest reaching out to your local public health department.*

12. Will this project take into consideration qualitative variables for data collection of other childhood lead exposure sources, such as adult occupations and personal items (jewelry, spices, pottery, toys, etc.)?

*It is difficult to obtain appropriate data on adult occupations and personal items. When state or local agencies ground truth hot spots, they could explore whether these exposure sources are potentially contributing to the elevated blood lead levels.*

13. Are there any nature-based solutions (e.g. planting trees, other green infrastructure, etc.) considered to mitigate lead exposure in affected communities?

*We understand this is an area of research and interest; we don't have a definitive answer to this question.*

14. What is the timeline for a national map of BLLs that will be publicly available?

*Government-wide efforts are ongoing to estimate children's BLLs at census tract scale across the US, but more data are needed to enhance and ground truth Pb indices.*

15. Are you interested in data from WY on children's blood lead levels and links to parental occupations in mining?

*The EPA mapping team worked directly with staff in the EPA regional offices to identify locations for the blueprint application studies. Once these studies are complete, we would like to collaborate with additional partners if resources allow.*

16. Do you do any proactive inspection to identify your hotspots or it is based on census and EBLL?

*In our approach, hotspots are geographic locations with higher prevalence of children's Pb exposures, based on percentage of elevated blood lead levels and/or Pb indices using two statistical methods: top 20 (80<sup>th</sup>-100<sup>th</sup>) percentile and Getis-Ord Gi\* geospatial cluster hotspot analysis.*

17. Did you need to account for the variability in testing rates in your Michigan analysis? Or are the blood lead testing rates of at-risk populations high enough in Michigan to the point that this isn't a concern?

*Yes, we used three years of data in the MI analysis and also calculated robustness and representativeness using both number of children tested and number of children residing in the census tract. We also had a minimum testing rate specified in the paper.*

18. To assess the risk of lead exposure in children, the CDC recommends a lead exposure risk screening questionnaire. Are you making use of CDC data in your efforts?

*We are using CDC's blood lead reference value (BLRV) and BLL data from several states (via data use agreements) through CDC-funded programs such as their Childhood Lead Poisoning Prevention Program (CLPPP).*

19. Any plan to compare the hotspot analysis between states that do or do not have universal blood lead level testing?

*The purpose of the blueprint application studies is to determine whether the generalizable approach employing Pb indices and housing and socioeconomic data works in states with robust blood lead level (BLL) data, as well as in states without BLL data.*

20. Does the Michigan lead data system collect census tract info?

*Yes, blood lead testing records in the MDHHS system have been geocoded to the census tract level since 2018.*

21. What is the relationship between the hotspots your work identifies and Elevated Blood Lead Levels (EBLL) incidence rates or risk? Are they generally positively correlated? Do you control for differences in numbers of children, etc.?

*As Figure 5 in our paper “A Generalizable Evaluated Approach, Applying Advanced Geospatial Statistical Methods, to Identify High Lead Exposure Locations at Census Tract Scale: Michigan Case Study,” <https://ehp.niehs.nih.gov/doi/10.1289/EHP9705>, shows there is a correlation between old housing-based Pb indices and %EBLLs and a moderate agreement (Kappa score ~0.5) between hotspots identified with Pb indices and %EBLLs, suggesting other environmental sources in some hotspots.*

22. Beyond confirming the analytical approaches of hotspot identification, is there an expectation that the results of the grounding will be used in informing policy recommendations or new funding approaches that the federal government will look to support?

*This information can be used to inform actions at many levels, including federal, states and communities.*

23. Have you considered gathering information from schools to determine if this is part of the environmental factors when identifying hot spots?

*The Michigan state blood data organizes the data by households but doesn't indicate schools. When communities ground truth hot spots, they could explore whether exposure sources in schools are potentially contributing to the elevated Blood Lead Levels.*

24. When you say hot spot, is it for all confirmed or all tests?

*The EPA mapping research team used both capillary and venous samples in their analysis.*

25. Have you found any correlation between high Pb blood level and prevalence of Pb pipes in disadvantaged areas?

*EPA's Office of Research and Development has been looking into this with currently available data.*

26. How can we be notified when future research published by your team becomes available?

*ORD maintains a lead (Pb) research website where our science is made available to the public. Check back regularly for updates: <https://www.epa.gov/land-research/epa-lead-pb-research>*