

Lead Poisoning Prevention

Why Comparable Public Health Data Matter

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Lead exposure is in the national spotlight. However, public health practitioners, policy makers, and researchers lack timely, comparable, community-specific data to make prompt decisions when extensive lead exposures endanger population health.

Healthy People 2020 includes an objective to reduce blood lead levels in children ages 1–5, lowering lead concentration in 97.5 percent of children from 5.8 mcg/dL to below 5.2 mcg/dL, a reduction of ten percent.¹ To measure progress toward achieving this, we need better data.

Measuring public health activities for lead exposure prevention

Local health departments (LHDs) reduce lead exposure risk by identifying high-risk populations, testing children's and pregnant women's blood lead levels, reporting elevated blood lead level tests to state health agencies, finding and reducing lead sources, and managing and treating lead poisoning for affected people.

State and local lead prevention programs collect data about children's test results and potential sources of lead poisoning. The Centers for Disease Control and Prevention (CDC) compiles these data in a national surveillance database. The National Health and Nutrition Examination Survey (NHANES) also monitors blood lead level trends in the US population. These efforts influence programs and policies to prevent and treat childhood lead poisoning, provide evidence for funding, and support research to determine effectiveness of federal, state, and local prevention activities.²

However, local data on testing blood for lead and reporting elevated blood lead levels **have not been collected the same way across states**. Moreover, there are no data measuring how LHDs perform in relevant screening, investigation, prevention, and response activities.

Table 1 compares local measures and test results for blood lead levels in children ages 0–6 across five states. The percent of children tested varied greatly by state, as did the threshold used to determine whether test results should be reported. Not all states reported data.

Table 1. Comparisons of Local Measures and Test Results for Blood Lead Levels in Children (2012) in Five States

State	Percent of Children aged 0-6 Tested for Blood Lead Levels (%)**	Reference Thresholds (mcg/dL)	Median (Range) Rate of Elevated Test Results (per 1000 children)***
A	No data	≥ 5	0 (0–2.019)
B*	14	≥ 10	0.079 (0–2.099)
C	No data	≥ 10	0 (0–0.067)
D	28	≥ 10	0.579 (0–2.146)
E	No data	≥ 15	0.089 (0–1.801)

* Data for State B is for 2011.

** Data source: CDC. National Environmental Public Health Tracking Network. (2012). Retrieved August 2, 2016 from www.cdc.gov/ephrtracking.

*** Data source: Multi-network Public Health Practice and Outcome Variation Examination (MPROVE) Study (2012); American Community Survey 5-year Population Estimates (2010–2014).

Variation in Local Rates of Children with Elevated Blood Lead Levels Across Five States

Figure 1 depicts the varied rates of elevated blood lead levels per 1,000 children aged 0–6, by county across the same five states as in Table 1. Each state used different thresholds, ranging between 5mcg/dL and 15mcg/dL. This inconsistency makes it challenging to compare and interpret these data to inform public health practice.

Because comparable data are not available, it is difficult to examine where variations originate or identify exposure risks and public health system performance inefficiencies. LHD leaders would benefit from such information for making decisions about preventive activities and policy. How can we meet this need?

PHAST Study

Standardized Data Collection

The Public Health Activities & Services Tracking (PHAST) team is collaborating with Public Health Practice-based Research Network (PBRN) partner states and others to establish, collect, and report standardized public health activities and services data.

Local Rates of Children with Elevated Blood Levels in Five States, US (2012)

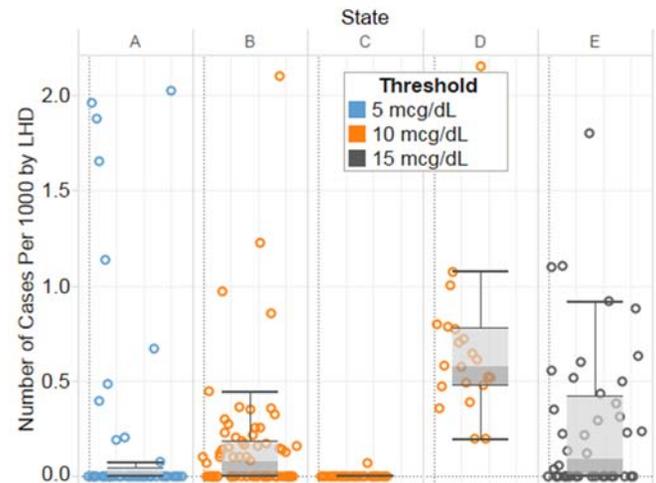


Figure 1. Number of cases (ages 0–6) with elevated blood lead level per 1000 children (ages 0–5) per LHD
Note: After removing missing values and an outlier, the number of LHDs included in this graph are: A=43, B=67, C=25, and E=42.
Data sources: MPROVE Study (2012) and American Community Survey 5-year population estimates (2010–2014)

By adopting standardized measures for activities and their outcomes:

INVESTIGATE



LHDs can more efficiently investigate and identify a population at risk

Effective responses to public health crises rely on accessible, relevant, accurate, and timely information. Lead poisoning prevention service data, for example, can be combined with demographic and geographic data to specify a jurisdiction or population group at risk for lead poisoning and identify where investigation activities are lacking.

DETECT



LHDs can more effectively respond to an emerging health challenge

County-level, standardized data collected and reported consistently over time across LHDs enables early detection of unusual variation and patterns. We recommend using consistent methods of data collection to report both the number of children tested and the number of children with elevated blood lead levels.

RESPOND



LHDs can be more effective in developing programs and allocating resources

When we measure services in a standardized way, we can compare service data across health departments on statewide and national levels. LHDs use comparisons as a powerful tool to provide information about service gaps and identify where attention should be placed.

References:

1. Office of Disease Prevention and Health Promotion. (2014). Healthy People 2020. Retrieved August 2, 2016 from <https://www.healthypeople.gov/2020/topics-objectives/topic/environmental-health/objectives>
2. Center for Disease Control and Prevention. (2016). CDC's Childhood Lead Poisoning Prevention Program. Retrieved August 2, 2016, from <http://www.cdc.gov/nceh/lead/about/program.htm>

For more information about PHAST standardized measures, please visit phastdata.org/measures