Decline in Blood Lead Testing in Young Children Following the Onset of the COVID-19 Pandemic

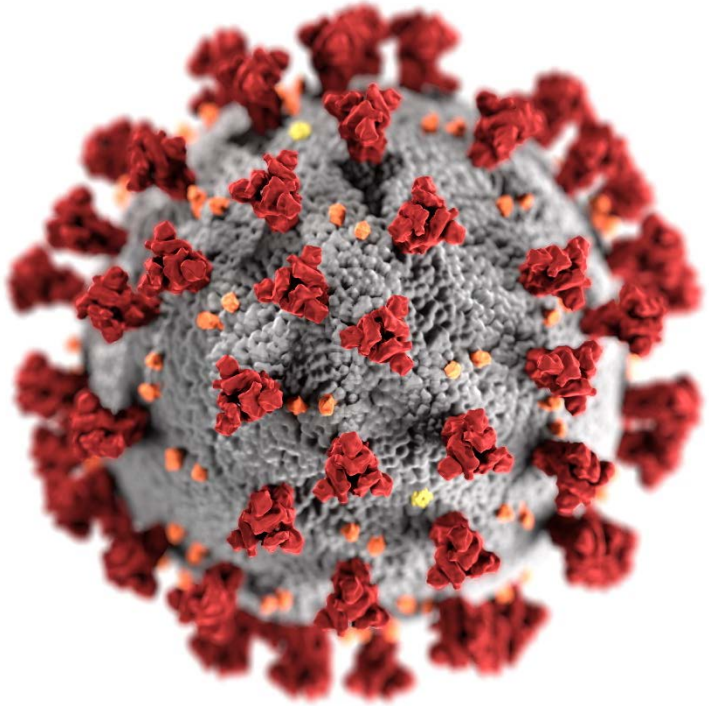
Kathryn Egan, PhD

on behalf of **Joseph Courtney, PhD**

Childhood Lead Poisoning Prevention Program

Lead Exposure and Prevention Advisory Committee (LEPAC)

October 30, 2020



cdc.gov/coronavirus

What is Lead Poisoning?

- **No safe level of blood lead has been identified for children.**
- **Many factors affect how the body handles foreign substances such as lead exposures:**
  - source of exposure, length of exposure, child's age, nutritional status, and genetics.
- **A blood test measures the level of lead in the blood, which can indicate exposure.**

How does lead affect children's health?

- **Lead exposure in children can cause:**
  - damage to the developing brain and nervous system,
  - learning and behavior problems,
  - slow growth and development, and
  - hearing and speech problems.

How are U.S. children exposed to lead?

- **Deteriorating lead-based paint in older homes and buildings is the most common source.**
  - accounts for up to 70% of elevated childhood BLLs
  - lead dust and paint chip hazards are of concern
- **Home renovations can disturb lead paint.**
- **Sources transported inside from outdoors**
  - soil and exterior paint
- **Transferred from surfaces to hands and ingested by young children via normal hand-to-mouth activity.**

How are U.S. children exposed to lead? (continued)

- **Less common sources include:**
  - unintentional take-home lead exposure from a worksite
  - lead-contaminated water
  - traditional folk medicines and cosmetics
  - imported candy and candy wrappers
  - some imported spices
  - some imported toys
  - herbal remedies
  - cookware from international manufacturers

Risk to children

- **Children have greatest risk of exposure and adverse health effects.**
  - unique behavioral factors such as mouthing and crawling
  - developing body systems and detoxification processes
  - children absorb more lead per body size

Why do we test children for lead?

- **Lead can permanently impair cognitive abilities and cause other health effects--yet a child may not show evident symptoms.**
- **Identification of a child with high levels prompts a public health response that can include:**
  - a home nursing visit
  - an environmental investigation to identify lead sources, and
  - chelation therapy if BLLs are ≥45 µg/dL or it is recommended by a physician.
- **Early intervention is important for reducing additional exposure.**
- **Linkages to services can mitigate the effects of lead.**
- **Blood lead surveillance data can identify high risk groups and areas.**

What is CDC's role in preventing lead exposure/poisoning?

- **Vision:**
  - to eliminate childhood lead poisoning as a public health problem
- **Mission:**
  - CDC's Childhood Lead Poisoning Prevention Program is committed to Healthy People 2020 goals of reducing blood lead levels in children and differences in average risk based on race and social class
- **Key Strategies:**
  1. Strengthen blood lead testing and reporting
  2. Strengthen surveillance
  3. Strengthen linkages of lead-exposed children to recommended services
  4. Strengthen targeted, population-based interventions

Potential effects on primary care and in-person services

- In-person visits have declined.
- Some primary care providers closed or had restricted services and hours.
- Some shifted to telemedicine.
- Vaccination rates decreased.
- Concern that some children may be missing other essential health care and assessments.

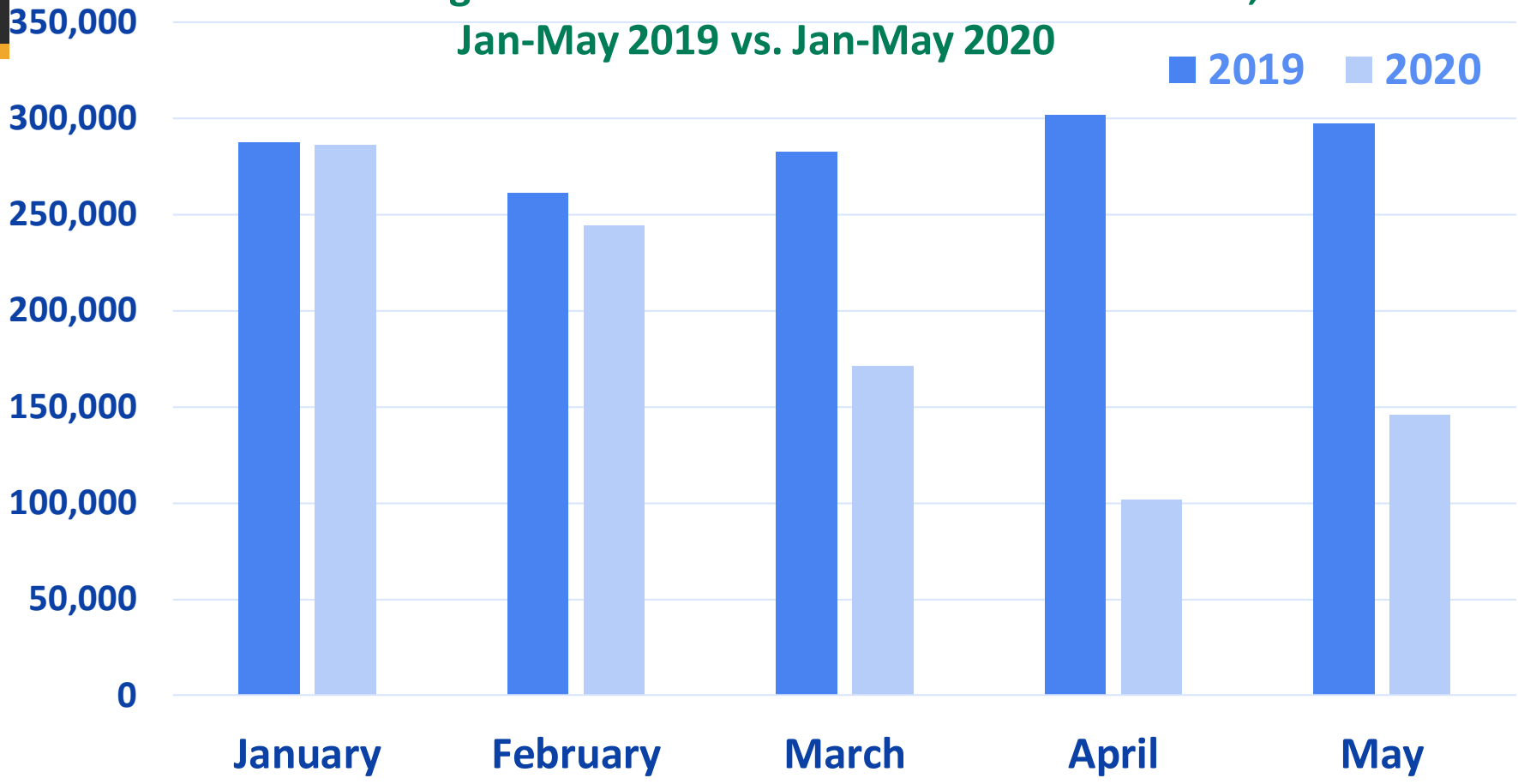
Sources: SantoliJM, Lindley MC, DeSilva MB, Kharbanda EO, Daley MF, Galloway L et al. Effects of the COVID-19 pandemic on routine pediatric vaccine ordering and administration—United States, 2020. MMWR Morb Mortal WklyRep 2020;69:591–3.
BramerCA,KimminsLM, Swanson R, KuoJ,VranesichP, Jacques-Carroll LA et al. Decline in child vaccination coverage during the COVID-19 pandemic - Michigan Care Improvement Registry, May 2016-May 2020. MMWR Morb Mortal WklyRep 2020;69:630–1.

Assessing the number of children tested for lead

- Used state surveillance data from January to May 2020 and compared that data to the same period of 2019.
- Focused on children younger than age 6 years.
- Counted individual children, not lab results.
- Received data from 34 programs (32 states + DC + NYC).

What did we find?

Children Age < 6 Years Tested for Lead--United States, Jan-May 2019 vs. Jan-May 2020



Declines varied greatly by jurisdiction

- **All jurisdictions had at least a 40% decline.**
- **Decreases in April of > 75%:**
  - Delaware
  - DC
  - Maryland
  - Missouri
  - New York City
  - Rhode Island, and
  - Wisconsin
- **Maine, Oregon, and Tennessee had the smallest declines.**

Other consequences

- Difficulties in conducting home nursing visits and environmental investigations for children with lead toxicity due to staffing shortages.
- Health departments had to develop methods of performing investigations under pandemic conditions.
- Trouble locating lead-poisoned children, as many families were no longer in their listed residence.
- Many children may be spending more time in contaminated environments due to shelter in place and school closures.

Factors to consider

- Results based on preliminary data.
- Data were only collected for January through May.
- Some clinical labs may have had staffing shortages.
- Health departments have experienced staff shortages and staff reassignment to COVID-19 work, affecting the processing of blood lead surveillance data.

Key findings

- **Sharp decline in the number of children tested in early 2020 compared with 2019.**
  - overall saw a 34% drop for the first five months of 2020 vs. 2019.
  - largest decline in April: 66% ↓
  - extent of decline varied by state.
  - nearly half a million children in reporting jurisdictions appear to have missed their lead screenings in the first five months of 2020.
- **Signs of some recovery in May.**

Implications

- Potentially thousands of children with higher levels may have been missed, delaying care and services.
- Health departments are having trouble conducting lead poisoning care management and environmental investigations and catching up to previous volume will be very challenging.
- Highlights the importance of assuring that children who missed their scheduled screening test, or who required follow up on a prior high level, be tested as soon as possible.
- Agencies serving young children can coordinate outreach to ensure well-child visits, immunizations, and other essential services occur.

The American Academy of Pediatrics' *Guidance on Providing Pediatric Well-Care during COVID-19*

"All well-child care [visits] should occur in person whenever possible and within the child's medical home where continuity of care may be established."

Source: https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/guidance-on-providing -pediatric-well-care-during -covid-19/

Information for providers

- **Healthcare providers should identify children who have missed well-child visits or recommended vaccinations and contact them to schedule in-person appointments.**
- **Prioritize infants, children age < 24 months, and school-aged children.**
- **Developmental surveillance and early childhood screenings, including developmental and autism screening, should continue along with referrals for early intervention services and further evaluation if concerns are identified.**

Source https://www.cdc.gov/coronavirus/2019-ncov/hcp/pediatric -hcp.html

Next steps

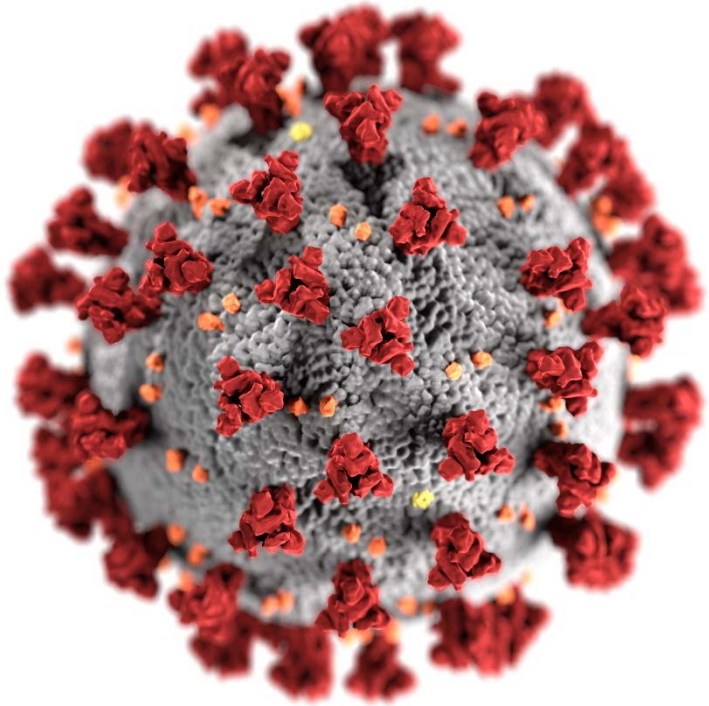
- **MMWR publication relevant to the information shared today**
- **Perform additional analyses to better:**
  - characterize the timing, geography, and demographics of where declines have occurred and
  - Identify and target which children may have been missed.
- **Continue to work with health departments and local health associations to develop and implement strategies for delivering lead poisoning prevention services during the pandemic.**

For more information on lead poisoning prevention:

CDC Childhood Lead Poisoning Prevention Program (CLPPP)
https://www.cdc.gov/nceh/lead/
Email: lppp@cdc.gov

For more information, contact NCEH
1 800 CDC INFO (232 4636)
TTY: 1 888 232 6348 www.cdc.gov
Follow us on Twitter @CDCEnvironment

For questions regarding COVID-19:
https://www.cdc.gov/coronavirus/2019-nCoV/index.html



For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.