



# CHILDHOOD LEAD POISONING PREVENTION TRAINING

2023-2024

## Introduction

Welcome to the Centers for Disease Control and Prevention's (CDC) Childhood Lead Poisoning Prevention Training. Lead is a naturally occurring heavy metal that has many historical and current uses but is dangerous to humans. Exposure to lead in the environment remains considerable, with many missed opportunities for prevention.

Acute lead poisoning may occur within 1 to 2 days of exposure. Chronic lead poisoning occurs when lead builds up in the body, often over months or years. Even small amounts of lead can cause serious health problems. In the United States, lead has been prohibited in residential paint products since 1978 and in gasoline for passenger cars since 1996. However, many other sources of lead continue to put young children at risk for severe cognitive impairment due to exposure during developmental years, principally under the age of 6 years. Young children are at risk for decreased intelligence quotients (IQs), poor academic achievement, and behavioral problems due to lead exposure. Lead is abundant in layers of paint beneath the surface in homes built before 1978, in soil from past leaded gasoline, exterior lead-based paint, industrial sources, and in some plumbing pipes, fixtures, and fittings. New sources of lead have emerged in global trade activities, including lead compounds found in some toys, jewelry, cosmetics, food, and other products imported from foreign countries. In addition, parents employed in industries that use lead, such as automotive repair and construction work, or those engaged in certain hobbies, such as hunting, fishing, and some arts and crafts may inadvertently bring traces of lead into the home or vehicles on shoes or clothing. Many medical and public health professionals may not be aware that childhood lead poisoning is still a public health threat with long-term consequences for children, families, and society.

### Program Description

CDC developed a series of training videos to educate healthcare providers and public health professionals about the importance of lead poisoning as a public health problem and the need to increase lead testing and linkage to care services for young children. The training is designed to fill gaps in knowledge regarding the hazards of lead and provide lead program implementation suggestions to CDC's state and local partners and other public health professionals based on best practices.

The online format will allow training on demand for our partners, reducing the need for travel and accommodating ongoing training needs to account for personnel turnover.

### Description of Training Modules and Segments

#### Module 1: Foundations of Lead Exposure

In Module 1, four video recorded segments introduce lead as a public health problem and provide an overview of lead prevention program expectations, suitable for new public health personnel and refreshers for existing staff members.

##### Module 1: Video Segment 1: Lead as a Public Health Concern

This segment conveys the dynamics of lead exposure as a major public health problem and its continuing impact on children and adults. The information shared will assist trainees in defining lead poisoning, understanding its causes, and in identifying the major short- and long-term health outcomes of exposure.

**Subject Matter Expert:** Dr. Mary Jean Brown is on the faculty of the Department of Social and Behavioral Sciences at the Harvard T. H. Chan School of Public Health and was chief of the Healthy Homes and Lead Poisoning Prevention Branch (retired) at CDC.

##### Module 1: Video Segment 2: History of Lead Poisoning and Contemporary Issues

The segment provides historical context of lead poisoning and evidence to support continuing vigilance in detecting exposures. The content is designed to assist trainees in comprehending the present and past uses of lead, the history

and timeline of lead policies in the United States, and the impacts of recent lead exposure incidents within affected communities.

**Subject Matter Expert:** David E Jacobs, Ph.D., CIH is currently chief scientist at the National Center for Healthy Housing—a non-profit organization, where he directs the U.S. Collaborating Center for Healthy Housing Research and Training for the World Health Organization. Dr. Jacobs was quoted on March 29, 2022, in a New York Times article on the importance of lead poisoning prevention.

### **Module 1: Segment 3: Introductory Overview of a Lead Prevention and Mitigation Program in a Health Department**

This segment will introduce trainees to the four strategic priorities for developing a lead prevention program and define basic concepts:

1. Blood lead testing and reporting,
2. Blood Lead Surveillance,
3. Linkage to Services and
4. Targeted population-based policy intervention.

The information conveyed will assist trainees in identifying features of well-run programs and the four major components of state/local/territorial/tribal lead prevention and mitigation programs.

**Subject Matter Expert:** CDR Monica Leonard, M.P.H., formerly served as an environmental supervisor for Region 2 in the Office of the Surgeon General. Formerly, she was the Western Section Chief in the Office Community Health and Hazard Assessment (OCHHA) at the Agency for Toxic Substances and Disease Registry, Centers for Disease Control and Prevention in Atlanta, Georgia.

### **Module 1: Segment 4: Roles and Responsibilities for Jurisdictions and CDC**

This segment introduces the roles of public health department personnel and CDC partners in supporting the implementation of Childhood Lead Poisoning Prevention Programs (CLPPPs) and will assist trainees in identifying how specific public health roles relate to the CDC CLPPP's four key strategies for managing a CDC-funded program.

**Subject Matter Expert:** Ms. Wilma Jackson is the team lead for the Program Services Team at the Centers for Disease Control and Prevention (CDC), National Center for Environmental Health (NCEH), in the Lead Poisoning Prevention & Surveillance Branch.

## **Module 2: Strategic Planning and Implementation of the Four Key Strategies of a Lead Prevention Program and Evaluating its Impact.**

**In Module 2, five video segments present the fundamental expectations for CDC's programmatic strategies for jurisdictional lead programs: testing and reporting, surveillance, linkage to services, targeted population-based interventions, and includes a segment on program evaluation.**

### **Module 2 Video Segment 1: Key Strategy – Testing and Reporting**

This segment is designed to assist trainees in developing and sustaining Lead Advisory Committees and screening plans, implementing state blood lead testing recommendations and reporting requirements, and enhancing blood lead level testing practices.

**Subject Matter Expert:** Dr. Alan Woolf is the associate chief medical education officer at Boston Children's Hospital and a professor of pediatrics at Harvard Medical School.

**Module 2 Video Segment 2: Key Strategy – Surveillance: Developing, Maintaining, and Updating a Blood Lead Surveillance System.**

Segment 2 is designed to assist trainees in developing or improving surveillance procedures for the collection, quality assurance, analysis, and dissemination of childhood lead exposure blood test results and other data.

**Subject Matter Expert:** Dan Albright, M.P.H., is the data manager and a departmental specialist for the Michigan Childhood Lead Poisoning Prevention Program (CLPPP). He has been with the Michigan CLPPP for over 5 years, starting as an analyst.

**Module 2: Video Segment 3: Key Strategy – Linkage to Services and Providing Appropriate Follow-up**

This segment is designed to guide trainees in strategies to identify children with blood lead levels requiring follow-up and to connect them to medical, social, behavioral, environmental, or other required services. Details include establishing partnerships with medical, environmental, behavioral, and social services organizations that aid children with blood lead levels above the current reference value. CDC's current blood lead reference value is 3.5 micrograms per deciliter of blood ( $\mu\text{g}/\text{dL}$ ).

**Subject Matter Expert:** Aimee Surma, M.S.N., B.S.N., is a nurse consultant for the Childhood Lead Poisoning Prevention Program with the Michigan Department of Health and Human Services. She helps local health department nurses navigate complex lead poisoning cases, especially in communities most at risk.

**Module 2: Video Segment 4: Key Strategy – Targeted, Population-based Interventions**

The purpose of this segment is to guide trainees in developing strategic partnerships and policies, and implementing targeted, population-based interventions with a focus on community-based approaches aimed at primary prevention of childhood lead exposures.

**Subject Matter Expert:** Dr. Mary Jean Brown is on the faculty of the Department of Social and Behavioral Sciences at the Harvard Chan School of Public Health and was chief of the Healthy Homes and Lead Poisoning Prevention Branch (retired) at CDC.

**Module 2: Video Segment 5: Program Evaluation**

This segment will guide learners in methods and best practices used to evaluate lead exposure prevention programs.

**Subject Matter Expert:** Commander Candis M. Hunter, Ph.D., M.S.P.H. is a former senior public health advisor at the Centers for Disease Control and Prevention, National Center for Environmental Health, in the Lead Poisoning Prevention & Surveillance Branch.

**Call to Action:** Testing for lead exposure early is necessary to identify the problem and conduct mitigation to reduce irreparable brain and central nervous system damage which can alter the life trajectory of exposed children. Information shared with the public through the dissemination of the videos will emphasize the importance of testing children early and linking them to care if exposed to lead.

**Additional Resources**

Continuing education credits are available for physicians, nurses, physician assistants, public health professionals, public health educators and many others. Please see the continuing education instruction guide on the online training menu for further details.

Two informational videos designed for wide dissemination across general audiences, one for community members and another for high schoolers, are also available. Please check the online training menu to access these resources.

## Childhood Lead Poisoning Prevention Training Subject Matter Experts



### Module 1 – Foundations of Lead Exposure

In Module I, four video recorded segments introduce lead as a public health problem and provide an overview of lead prevention program expectations, suitable for new public health personnel and refreshers for seasoned staff members.

#### Segment 1: Lead 101: Lead as a Public Health Concern – Dr. Mary Jean Brown, Subject Matter Expert



Dr. Mary Jean Brown is on the faculty of the Department of Social and Behavioral Sciences at the Harvard T. H. Chan School of Public Health and was chief of the Healthy Homes and Lead Poisoning Prevention Branch (retired) at CDC. An internationally recognized expert and leader in the fields of lead poisoning prevention and healthy housing, Dr. Brown works regularly with U.S. public health agencies and non-governmental organizations such as the World Health Organization. She has published more than 100 peer reviewed scientific articles, commentaries, and policy documents and conducted epidemiological studies of housing interventions for lead, asthma, and injuries.

#### Segment 2: History of Lead Poisoning and Contemporary Issues – Dr. David E. Jacobs, Subject Matter Expert

David E. Jacobs, Ph.D., CIH is currently chief scientist at the National Center for Healthy Housing, a non-profit organization, where he directs the U.S. Collaborating Center for Healthy Housing Research and Training for the World Health Organization. He is also an adjunct associate professor at the University of Illinois at Chicago School of Public Health (Environmental and Occupational Health Sciences Division). He is a licensed lead paint risk assessor and a board-certified industrial hygienist. He was a contributing author to the recently released Guidelines on Housing and Health from the World Health Organization. He helped launch the Healthy Homes Initiative in the U.S. in 1999 with a report to Congress. Dr. Jacobs has led research related to childhood lead poisoning prevention, lead exposure assessment and mitigation, healthy housing, asthma, green building design, and policy development. He authored the Guidelines for Evaluation and Control of Lead Based Paint Hazards, the standard industry reference.



#### Segment 3: Introductory Overview of a Lead Prevention and Mitigation Program in a Health Department – CDR Monica Leonard, Subject Matter Expert



CDR Monica Leonard, M.P.H., serves as the Senior Environmental Discipline Chief for the Public Health Emergency Response Strike Team with the Office of the Secretary/Office of the Surgeon General. In past employment, she served as an environmental supervisor for Region 2 in the Office of the Surgeon General; and as Western Section Chief in the Office Community Health and Hazard Assessment (OCHHA) at the Agency for Toxic Substances and Disease Registry in Atlanta, Georgia. CDR Monica Leonard is an Environmental Health Officer in the United States Public Health Service, where she's served at CDC/ATSDR in varying capacities for 16 years. For two years, she served as Acting Branch Chief in the Lead Poisoning Prevention & Surveillance Branch and was the lead of the Program Services Team for over three years. She has worked as a Senior Public

	<p>Health Advisor, with oversight to grant and cooperative agreement portfolios totaling over \$50M in funding to state and local health jurisdictions. She has received several awards and honors for her outstanding work, including the 2018 NCEH/ATSDR Honor Award for Excellence in Program Delivery.</p>
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**Segment 4: Roles and Responsibilities for Jurisdictions and CDC – Wilma Jackson, Subject Matter Expert**

Wilma Jackson is the team lead for the Program Services Team with the CDC, National Center for Environmental Health (NCEH), in the Lead Poisoning Prevention & Surveillance Branch. She oversees the implementation of the Childhood Lead Poisoning Prevention and Surveillance of Blood Lead Levels in Children Notice of Funding Opportunity Announcement. Prior to becoming team lead, Wilma served as a senior public health advisor. In this role, she advised and assisted state and local health departments in the development, implementation, and evaluation of childhood lead poisoning prevention programs.



**Module 2 – Strategic Planning and Implementation of Four Key Strategies for Lead Prevention and Evaluating its Impact.**

In Module 2, five video segments convey the fundamental expectations for CDC’s programmatic strategies for jurisdictional lead exposure prevention programs: testing and reporting, surveillance, linkage to services, targeted population based interventions, and a segment on program evaluation.

**Segment 1: Key Strategy – Testing and Reporting – Dr. Alan Woolf, Subject Matter Expert**

Dr. Alan Woolf is the associate chief medical education officer at Boston Children’s Hospital and a professor of pediatrics at Harvard Medical School. He is the director of the Pediatric Environmental Health Center at Boston Children’s Hospital, and he directs its Pediatric Environmental Health Fellowship Training Program. He is director and principal investigator of the Region 1 New England Pediatric Environmental Health Specialty Unit and a member of the Executive Committee of the American Academy of Pediatrics Council on Environmental Health. Dr. Woolf is a past president of both the American Academy of Clinical Toxicology and the American Association of Poison Control Centers. Dr. Woolf has contributed over 300 publications and has published extensively on childhood poisonings, toxic reactions to heavy metals, poisoning prevention, poison center functioning, toxic reactions to botanicals, herbs and dietary supplements, and the contamination of everyday products.



**Segment 2: Key Strategy – Surveillance – Dan Albright, Subject Matter Expert**



Dan Albright, M.P.H., is the data manager and a departmental specialist for the Michigan Childhood Lead Poisoning Prevention Program (CLPPP). He has been with the Michigan CLPPP for over 5 years. He developed a project to test and validate a new custom-built web-based surveillance application that enabled the program to improve timeliness of reporting, improve data validation, and enhance system interoperability among CLPPP and other state programs. His specialty is improving system interoperability and linking blood lead data to different systems statewide including Medicaid, immunizations, and vital records. This has allowed the CLPPP program to improve capturing demographic information and to improve care coordination for children with elevated blood lead levels.

**Segment 3: Key Strategy – Linkage to Services – Aimee Surma, Subject Matter Expert**

Aimee Surma, M.S.N., B.S.N., is a nurse consultant for the Childhood Lead Poisoning Prevention Program with the Michigan Department of Health and Human Services. She supports local health department nurses to navigate complex lead poisoning cases, especially those in communities with a lead water action level requiring triggers to minimize exposure. Aimee managed the Lead Poisoning and Prevention Program for the City of Detroit Health Department and chaired the Lead Safe Detroit coalition. Aimee served as a board member for the Michigan Association for Infant Mental Health in 2019. Her program foci include implementing trauma-informed interventions to address the impact of lead poisoning on the community and healthcare providers, as well as implementing strategies to circumvent burnout among public health professionals.



**Segment 4: Key Strategy – Targeted, Population-based Interventions – Dr. Mary Jean Brown, Subject Matter Expert**

Dr. Mary Jean Brown is on the faculty of the Department of Social and Behavioral Sciences at the Harvard T. H. Chan School of Public Health and chief of the Healthy Homes and Lead Poisoning Prevention Branch (retired) at CDC. **See full bio above.**

**Segment 5: Program Evaluation – Candis Hunter, Subject Matter Expert**



Commander Candis M. Hunter, Ph.D., M.S.P.H. formerly served as a senior public health advisor at the Centers for Disease Control and Prevention, National Center for Environmental Health in the Lead Poisoning Prevention & Surveillance Branch. In this role, she advised and assisted state, local, and tribal health partners in the development, implementation, and evaluation of childhood lead poisoning prevention programs. She serves as an Environmental Health Officer in the U.S. Public Health Service Commissioned Corps and has provided environmental and epidemiological expertise for several public health emergency responses and investigations. These include the 2010 Navajo Birth Cohort Study; the 2011 Japanese Earthquake/Nuclear Response; 2015 Ebola Response; 2016 Flint, Michigan Lead and Legionella Investigations; and the COVID-19 Response. CDR Hunter is the first African American to receive a Doctor of Philosophy (Ph.D.) in Environmental Health Sciences from Emory University. She has been recognized for her work via the 2021 Young, Gifted, and Green 40 Under 40 Award, the 2021 CDC Emerging Leaders Program, the 2020 NCEH/ATSDR Health Equity Award, and the 2017 Emory University Alumni Association 40 Under 40 Award.