

Vital Strategies Reimagines Clinical Care Guidance for Childhood Lead Poisoning in Peru



Introducing the Childhood Lead Poisoning Prevention Program at Vital Strategies

Lead is a potent toxin that can severely affect mental and physical functioning of children and the health of adults. Its toxic properties were first described 2,000 years ago. Still, nearly two-thirds of preventable intellectual disabilities may still be caused by lead exposure during early childhood.¹ Despite clear evidence of harm, most countries do not monitor or regulate lead enough to prevent widespread exposure. Since 2018, Vital Strategies has partnered with Peru's Ministry of Health and its Centers for Disease Control and Prevention to support ongoing lead poisoning surveillance, public awareness, and improvement in the regulation of lead in consumer products.

The Problem of Identifying Lead Poisoning in Children

Around one in three children—potentially as many as 800 million globally—has blood lead levels that are unacceptably high as defined by the World Health Organization and the United States Centers for Disease Control and Prevention.² The problem is especially pervasive in low- and middle-income countries, many of which don't have laws to minimize exposures and lack the testing capacity to identify lead-poisoned children. Lead in the environment is typically odorless, colorless and tasteless, making it difficult to identify exposed children and link them with the care they need. Unfortunately, once a child has been exposed to lead and is suffering from cognitive impairment, the damage is typically irreversible.

It is paramount that health care workers identify potential exposures early. Current clinical guidance in many countries relies heavily on a blood test to measure the amount of lead in a child's body. While this is and will continue to be the best way to measure exposure, testing capacity is limited or nonexistent in many resource-constrained settings. Even so, clinical guidance is often developed using blood lead level thresholds as the sole marker for exposure and intervention, which makes them difficult to implement where test is not available.

¹ Nevin R. Trends in preschool lead exposure, mental retardation, and scholastic achievement: association or causation? *Environ Res.* 2009 Apr;109(3):301-10. doi: 10.1016/j.envres.2008.12.003. Epub 2009 Jan 23. PMID: 19167707.

² UNICEF. *The Toxic Truth: Children's Exposure to Lead Pollution Undermines a Generation of Future Potential.* July 2020.

Assessing Risk of Lead Exposure in Children and Pregnant Women

VULNERABILITY

- Known presence of lead contamination
- Housing characteristics
- Access to clean water



INDIVIDUAL AND FAMILY RISK FACTORS

- Paint
- Food
- Occupation



CLINICAL SUSPICION

- Developmental disorders
- Anemia
- Neurological symptoms



EXPOSURE RISK



PATIENT/FAMILY
EDUCATION

BLOOD LEAD
TEST

How We Reimagined Clinical Guidance

In 2018, Vital Strategies partnered with Peru's Ministry of Health and its Centers for Disease Control and Prevention to address key gaps in the country's response to lead poisoning. One component of this work is to integrate essential risk assessment for lead into children's routine medical check-ups and other interactions they may have with the health care system. In many high-income countries, children are routinely tested to determine the concentration of lead in their blood. We are supporting Peru's Ministry of Health as they reimagine clinical guidance in assessing, identifying, and caring for people exposed to lead.

The updated guidance will be used to identify children, pregnant women, and adults at increased risk of lead exposure by combining a parental questionnaire with known local sources of lead. Two risk assessment protocols will be used to prioritize screening for lead in blood based on likely risk of exposure—one specific to children and pregnant women and another specific to other adults. The screening for children, described below, includes questions on a child's vulnerability, clinical suspicion of lead poisoning, and individual or family risk factors. The screening helps to ensure that high-risk children are prioritized for the limited blood lead tests available.

This approach was designed with two goals: to inform the assessment and treatment of individuals to reduce harm from lead and to serve as the basis for a surveillance system by using the risk assessment scores to better understand the principal factors that drive exposure, and to compare those across regions and by population and housing characteristics. The partnership will work to validate, and calibrate, our methodology in the hopes of ultimately proposing it in other low-resource settings.

For more information, email enviornmentalhealth@vitalstrategies.org

About Vital Strategies

Vital Strategies is a global health organization that believes every person should be protected by a strong public health system. We work with governments and civil society in 73 countries to design and implement evidence-based strategies that tackle their most pressing public health problems. Our goal is to see governments adopt promising interventions at scale as rapidly as possible.

