

HB 166: Expanding Universal Screening for Lead Poisoning to Children at Age 2 Years

What the bill does:

1. Defines terms in the Childhood Lead Poisoning Prevention Act to clarify that “screening” for lead poisoning means a capillary blood lead test (finger-prick or heel-stick) instead of a questionnaire.
2. Clarifies insurance coverage for lead poisoning screening, testing, and medical intervention.
3. Clarifies that all healthcare providers and laboratories who are screening children must submit results to DHSS. This will improve the current database of elevated blood lead level cases so that data will be more accurate and can be properly tracked.
4. Directs DHSS to promulgate regulations for implementation and enforcement, which has not yet been done. Regulations will improve transparency and enhance the ability of all healthcare providers and DHSS to understand their roles and responsibilities in lead poisoning prevention and intervention.

Lead Poisoning is an Ongoing Concern in Delaware: In the 5 years period between 2012 and 2016, over 1650 children in Delaware were found to have had elevated blood lead levels (BLL) when they are tested, and we are under-testing and therefore likely under-reporting the scale of the problem.

Delaware’s Current Testing Requirements: Delaware’s Childhood Lead Poisoning Prevention Act currently requires testing for all children at age 1. Federal requirements mandate that children who receive WIC or Medicaid benefits have their BLL tested at 2 years, but the remainder of Delaware’s children are only required to answer a questionnaire developed by the State and administered by the pediatrician, to evaluate their risk of lead poisoning at 2 years of age.

There are no required tests or screening for children older than 2 years of age, even though the American Academy of Pediatrics Council on Environmental Health reports that 20% of lead poisoning cases occur at age 3. Blood lead concentrations of children who live in lead-contaminated environments typically increase rapidly between 6 and 12 months of age, peak between 18 and 36 months of age, and then gradually decrease. The peak in children’s blood lead concentrations stems from the confluence of normal mouthing behaviors and increasing mobility. Younger children also absorb lead more efficiently than older children and adults.¹

¹ American Academy of Pediatrics, 2016. AAP Lead Testing Webinar Series - It All Starts with Testing: Identifying Children with Elevated Blood Lead Levels.

2 Year Testing in Mandated in Surrounding States: Universal screening by health care providers at the point of care has been identified by surrounding states as the most efficient, most cost effective, and least subject to error method for determining lead exposure. The following surrounding states are already screening children for elevated blood lead levels at ages 1 and 2: Maryland, New Jersey, Washington D.C., New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont and Maine. While Pennsylvania has made past screening decisions at the county level, their General Assembly is currently considering legislation to require statewide universal screening for children at ages 1 and 2 and pregnant women. Maryland has been using statewide universal screening to identify a future targeting strategy.

Questionnaires are a Flawed Screening Tool: The questionnaire is unable to capture all of the various areas of lead exposure risk, some of which may not even be known to the parent. Exposure can occur from numerous sources, including living in or visiting homes that contain lead paint; drinking contaminated water or eating contaminated food; playing outdoors in areas where there could be contaminated soils or outdoor structures that may have peeling and flaking lead paint, including playground equipment, water towers, fire hydrants and bridges; exposure due to the various hobbies of family members or cultural artifacts that place children at risk for lead exposure, including imported spices and candies, vessels for water, cosmetics, art and crafts supplies, and even consumption of wild game or firearms use by a family member. It is not only difficult to capture all of these diverse activities and behaviors in a questionnaire to identify lead risk, it is probable that some of our children are falling through the cracks and many of those who are at risk are not being identified.

- In April 2019, the Journal of the American Medical Association (Vol. 321, No. 15) reported that the United States Preventive Services Task Force “found adequate evidence that questionnaires and other clinical prediction tools to identify asymptomatic children with elevated blood lead levels are inaccurate.”²
- In 2016 the American Academy of Pediatrics Council on Environmental Health concluded that “screening questionnaires frequently used in the primary care setting fail to identify children who have elevated blood lead concentrations.”³
- The use of blood lead level screening at age 12 months and 24 months is part of the “Recommendations for Preventive Pediatric Health Care” by Bright Futures/American Academy of Pediatrics, as updated in 2017.⁴

² JAMA. (2019). Screening for Elevated Blood Lead Levels in Children and Pregnant Women US Preventive Services Task Force Recommendation Statement, 321(15):1502-1509. doi:10.1001/jama.2019.3326

³ PEDIATRICS. Prevention of Childhood Lead Toxicity. Vol. 138, No. 1; July 2016

⁴ Bright Futures/American Academy of Pediatrics. (March 2019). Recommendations for Preventive Pediatric Health Care. https://www.aap.org/en-us/Documents/periodicity_schedule.pdf

Questionnaires are Especially Problematic in Delaware: Delaware's current lead risk questionnaire lists 44 zip codes where children who live, spend time, attend daycare or visit for 6 hours per week or 60 hours per year are required to have a blood lead test. This constitutes 45% of Delaware's zip codes. DHSS has not collected records to indicate that the questionnaires have been used to identify children for testing.

States that are able to do targeted testing for lead poisoning have years of screening research to guide their efforts (for example, Maryland). Delaware has not kept records on the use of questionnaires, and therefore does not have any information on high risk areas and behaviors to guide a targeted screening strategy.

Recent maps that Delaware has released that show zip codes of higher concentration of lead cases have been based on blood lead testing, which are also influenced by the federal requirements for certain children at age 2 (Medicaid and WIC). Geography is not the sole risk factor in determining exposure to lead and Delaware simply does not have enough data to implement a targeted testing strategy at this time. With a properly-implemented screening program, Delaware could move to targeted screening in the future.

Early Identification is Critical for Federal Program Enrollment: Early identification enables access to early intervention programs which help children counter some of the effects lead exposure to learning ability and to improve behavior outcomes. A critical step in providing access to existing federally funded programs for early intervention, as well as taking steps to eliminate lead from a child's environment, is identifying children for lead in their blood.

Children who are not identified with elevated blood lead levels are not eligible for early childhood education programs funded by the federal government through IDEA Part C that are proven to improve brain functioning during the critical stage of brain development. In 2017 the State of Delaware lowered the eligibility threshold for children to access this federally-funded program from 45 µg/dL to 10 µg/dL, expanding the number of children who can take advantage of this opportunity.

While the effects of lead exposure are irreversible, early education intervention and brain stimulation have been shown to reduce the need for special education once a child enters school, increase their success in math, science, and reading, and reduce discipline problems, improving their ability to succeed in life and to become successful contributors to society.

Point of Care Screening is a Best Practice: The most efficient, most cost effective, and least subject to error method for determining lead exposure is capillary (finger-stick) screening by health care providers at the point of care. Such capillary screening is a CLIA-waived test, and the Clinical Laboratory Improvement Amendments of 1988 (CLIA '88) enables simple laboratory examinations and procedures that have an insignificant risk of an erroneous result to be performed without laboratory certifications.