Tackling the Challenge of Lead Exposure

Population Health Sciences

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The Children of Flint are not alone.

More than 8,000 children in Flint have been exposed to lead after a budget-cutting decision to switch drinking water sources. This public health emergency in Michigan is an important reminder of the lead-related dangers that exist in our own state. Currently, Pennsylvania is tackling a lead toxicity problem in children from exposure to lead-based paint in old houses. In fact, 18 cities in Pennsylvania had higher levels of lead exposure in 2014 than Flint, according to a Pennsylvania Department of Health annual report. Any house built before 1978 is considered at risk for having a dangerously high level of lead. According to the Pennsylvania Department of Health, 40% of Pennsylvanians rely on pre-1978 housing, and these old homes often house the poorest families in the state. And it's the youngest children who are most likely to be exposed because they are most likely to ingest chips or flakes of old paint.

Lead poisoning has been found to have not only short-term consequences but also long-lasting negative impact on a child's brain. Lead-exposed children can struggle with learning disabilities, lower cognitive abilities and poor problem solving. Children with lead poisoning can also encounter behavioral problems including hyperactivity and inattention. After being exposed to lead at an early age, these children are at an increased risk of dropping out of high school and entering the juvenile justice system.

The crisis in Flint has garnered national headlines and drawn attention to the devastating effects of lead poisoning. In addition to addressing the contaminated water, health care professionals in Flint are calling for increased preventive measures, including Head Start and Early Intervention for young children with delays.

So what can Pennsylvania do to address its lead crisis?

Primary prevention, including the cleaning of houses and moving expectant families and families with young children into safer homes, should be the state's top priority. Efforts to find funds to fully address this are needed.

For those children who have been exposed, early identification of any high lead level is critical. Pennsylvania, following the guidelines of Medicaid's Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program, currently requires lead screening only for children ages 1 and 2 enrolled in Medicaid. CHOP's Philadelphia primary care sites screen children for lead exposure at 9 and 24 months. When children with elevated blood levels are identified early, health care providers can recommend ways for families to make their homes safer, to prevent future exposure to children, and to provide foods rich in calcium, iron and Vitamin C that can help minimize the amount of lead absorbed. Lead screening is needed for all children under the age of 2 who live in areas with older housing.

Every child with an elevated blood lead level should be referred to early childhood services that can provide necessary educational and therapeutic experiences. Any child with a lead level of 10 or more micrograms per deciliter of lead in the blood (10ug/dl) is eligible for tracking by Pennsylvania's Early Intervention Services. The use of 10 µg/dL as a cut-off should be changed, as it does not reflect current scientific knowledge. A review of the literature shows that there is no threshold for the adverse consequences of lead exposure, and all lead levels between 1 µg/dL and 10 µg/dL increase the risk of deficits in children. Early Intervention can monitor the development of a child with lead poisoning so that therapeutic services can be provided when needed or referrals to educational services can be made.

Pennsylvania should also increase funding for Pre-Kindergarten programs as well as Early Head Start and Head Start, creating a priority enrollment for children with high lead levels. This can be facilitated with an easier exchange of information between health systems and early childhood educational systems. Educational services like Head Start are critical for children with elevated lead levels since lead exposure may not lead to diagnoses that reach the threshold of eligibility for mental health services at these early ages. Services like Head Start, however, can support social-emotional development and minimize behavior problems before they reach the point of psychiatric diagnosis.