

Taking the Lead on Lead Poisoning:
Policy Proposals to Further Maryland's Goal of Eradicating Childhood Lead
Poisoning



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Executive Summary

Though great strides have been made in fighting lead exposure in Maryland, new strategies are necessary to reach children who are left behind by current policy. To make further progress in mitigating lead exposure, we advocate for universal lead testing of Maryland children, stricter requirements on property owners for risk abatement, more funding for lead inspections, and increased education efforts.

The ongoing effort within the Department of Health and Mental Hygiene to make lead testing universal for Maryland children should be supported. The current testing regime targeted toward the “at-risk” and Medicaid populations is based on outdated assumptions about the sources of lead exposure. Universal point-of-care testing is a practical approach which will enable the State to better target its efforts in the future and will ensure that no Maryland child is left behind.

Regulations governing rental units built before 1978 need to be updated to reflect growing evidence of the serious effects of small blood lead concentrations. The current threshold of 10 µg/dL to trigger State intervention is inadequate. We believe that Maryland should follow the CDC’s recommendation of 5 µg/dL. While this is only a reference dosage, we believe children living in covered rental units who consistently test at this blood lead level should have access to State lead inspections to ensure that home lead exposure is cut off at the source.

The 2012 expansion of Maryland’s lead law resulted in more than 250,000 additional rental units becoming covered by the law.¹ The policy changes we are advocating for would result in more rental units being required to meet the State’s risk reduction standard. The current level of staffing for lead inspectors at the Maryland Department of the Environment is

¹ <http://news.maryland.gov/mde/2014/07/01/maryland-lead-program-opens-registration-for-rental-properties-built-before-1978/>

inadequate to the task of ensuring that all rental units covered by the law are properly protecting tenants. More funding is needed to give the Maryland lead law teeth.

Finally, the State should increase outreach efforts through schools and primary care providers so that families can be aware of the risks and warning signs associated with lead poisoning.

We believe that enacting any and all of these policy changes would make a real difference in the State's campaign against lead poisoning while paying dividends in the form of a lower crime rate and more opportunity for Maryland's most disadvantaged children.

Problem Definition

The tragic death of Freddie Gray and the ensuing unrest in Baltimore has prompted larger discussions about race relations, poverty, and policing in Maryland and across the United States. For Maryland lawmakers, however, a disturbing fact about Gray's childhood should call attention to an issue which continues to impair the development of Maryland's most vulnerable children.

When Freddie Gray was just 22 months old and living in West Baltimore, a test found him to have an astounding 37 µg/dL of lead in his blood, more than 7 times the current threshold at which the CDC urges additional testing.² Research has shown that lead poisoning in children under age six severely impedes cognitive development and can lead to behavioral issues such as increased aggression and ADHD. The life story of Freddie Gray supports these associations. Gray was diagnosed with ADHD from a young age and needed special education in school. He never graduated high school and was ultimately arrested more than a dozen times for working in the drug trade.

² McCoy, Terrence. "Freddie Gray's Life a Study on the Effects of Lead Paint on Poor Blacks." Washington Post. Accessed August 4, 2015.

Too many Maryland children have their futures poisoned by the lead lurking in their walls. Although Maryland has made great strides in reducing lead poisoning, the most recent report from the Department of the Environment's Lead Poisoning Prevention Program found that in 2013 there were still 371 children in the State with more than 10 µg/dL of lead in their blood while 2251 children had a blood-lead concentration between 5 and 9 µg/dL.³ As more evidence has shown that even small concentrations of lead can have devastating effects, the CDC has revised its guidelines for intervention down from 10 to 5 µg/dL.

Yet Maryland's State Elimination Plan only calls for the elimination of cases above 10 µg/dL, and substantive State intervention is only triggered at this threshold. While mitigating the most extreme cases of lead poisoning is important, this focus leaves behind the children suffering from blood concentrations below 10 µg/dL. And the fact that only 21.2 percent of Maryland children up to six years old were tested in 2013 means that many more cases could be slipping through the cracks.⁴

The tragic reality is that lead poisoning in Maryland contributes to a vicious cycle of poverty, in the inner city and rural counties alike, by sabotaging the potential of Maryland children. Great strides have been made in mitigating contamination and reducing the number of cases, but progress (particularly for cases above 10 µg/dL, for which there was virtually no change from 2012 to 2013) is stalling. The State needs to reconsider its strategy for eradicating lead poisoning to ensure that every child in Maryland has an opportunity to succeed.

Adverse affects to lead: Crime

Recent studies have shown that there is viable evidence to suggest that low blood lead Pb levels <5 micrograms/deciliter (µg/dL) are associated with aggression, ADHD, and criminal

³ "Childhood Blood Lead Level Surveillance in Maryland Annual Report 2013." Maryland Department of the Environment. July 2014. Accessed August 4, 2015.

⁴ Ibid.

behavior ranging from six year old children to young adults in their early twenties.⁵ Children absorb up to 50 percent of lead they ingest, compared with 8 percent for adults making them more susceptible to have higher lead exposure. Adolescents who have had exposure to lead in early childhood have higher rates of incarceration, limited educational achievement, underemployment, and violent behavior compared to the adolescents who were never exposed to lead. Further investigation is vital to strengthen the relationship between early childhood lead exposure as a precursor to crime in early adulthood.

Pennsylvania studies

Herbert Needleman founder of the Alliance to End Childhood Lead Poisoning, and Professor at the Pittsburgh School of Medicine conducted two important studies that helped researchers connect lead exposure in children with negative behavior. The first study he conducted was of 301 young males in the Pittsburgh School System.⁶ Needleman discovered that bone lead levels in 12-year-old children were connected to parent and teacher Child Behavior Checklist ratings for aggression, attention and delinquency that were conducted. The children who the parents and teachers documented as having more aggressive behavior had higher blood lead levels.⁷ Furthermore, a later study Needleman undertook involved 194 adolescents ages 12-18 that had been previously charged by the Juvenile Court of Allegheny County, Pennsylvania, and 146 non-delinquent adolescents from local high schools in Pittsburgh.⁸ The results of the study showed that the delinquents had significantly higher blood lead levels, 11

⁵ Wolpaw, Jessica. "Lead Exposure and Behavior Effects on Antisocial and Risky Behavior Among Children and Adolescents." Amherst. February 1, 2012. Accessed August 4, 2015.

⁶ "Toxicological Profile for Lead." CDC. August 1, 2007. Accessed August 4, 2015.

⁷ Ibid

⁸ Ibid

ppm compared to the non-delinquents 1.5 ppm. Though not every adolescent who has an elevated blood levels is a criminal by any means, the goal of Needleman's studies were to further develop the link between blood lead levels and aggression.

Cincinnati study

A breakthrough long-term study was lead by Kim Dietrich a Professor at the University of Cincinnati College of Medicine. Unlike most other lead exposure studies the Cincinnati study followed participants into adulthood, culminating in more concrete evidence.⁹ The study observed 250 individuals with elevated blood lead levels in Cincinnati, Ohio born to women between 1979-1984 who resided in areas who lived in high risk areas for lead-contaminated housing.¹⁰ The blood lead concentrations of the participants was measured on the first or early second trimester of pregnancy and on a quarterly and biannual basis until the child was 6.5 years old.¹¹ After monitoring the children throughout early adulthood (19-24) the study found that total arrest rates and violent crimes committed went up for every 5 lg/dl (0.24 lmol/l) increase in blood lead concentration. Given the results Dietrich concluded that childhood blood lead concentrations are linked to higher rates of crime.

Baltimore: Crime and Poverty

While some people may still be skeptical about the relationship between lead paint and criminal activity it is impossible to deny that lead exposure has negative health effects.

According to Ruth Ann Norton, the executive director of the Coalition to End Childhood Lead

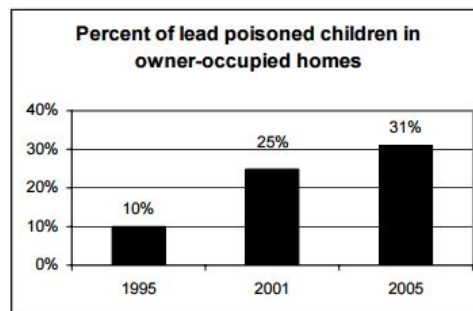
⁹ Dietrich, Kim. "Association of Prenatal and Childhood Blood Lead Concentrations with Criminal Arrests in Early Adulthood." PLOS Medicine. May 27, 2008. Accessed August 4, 2015.

¹⁰ Ibid

¹¹ Ibid

Poisoning,¹² “A child who was poisoned with lead is seven times more likely to drop out of school and six times more likely to end up in the juvenile justice system.” This was the case for Freddie Gray who dropped out of school and had multiple arrests ranging from assault to destruction of property.¹³ Gray, grew up in Sandtown-Winchester in West Baltimore a neighborhood where children have almost a 6 percent chance of developing elevated blood lead levels, the highest in the State of Maryland.

The connections being made between Gray’s lead exposure and criminal activity are not meant to blame his death on lead poisoning. The intention is to shed awareness on the fact lead exposure is still a problem today.¹⁴ For example, even though the rate of lead poisoning in rental properties such as Freddie Gray’s has declined, the number of lead poisoning cases in owner occupied units has risen from 10 percent in 1995, to 25 percent in 2001, and reaching 31 percent in 2005.



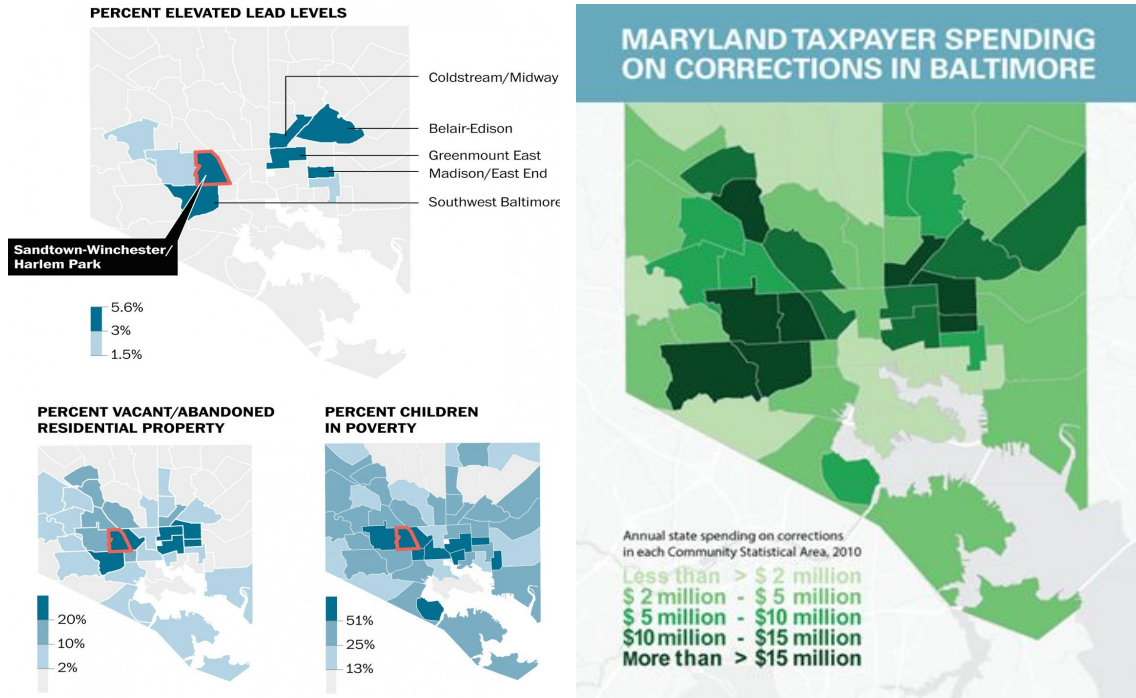
Baltimore City Health Department Snapshot

¹² McCoy, Terrence. "Freddie Gray's Life a Study on the Effects of Lead Paint on Poor Blacks." Washington Post. Accessed August 4, 2015.

¹³ Ibid

¹⁴ "Lead Poisoning in Baltimore." Baltimore City Health Department. June 12, 2007. Accessed August 4, 2015.

The maps below serve as a guide to illustrate the relationship linking areas of high lead exposure in Baltimore to the amount of taxpayer dollars spent on corrections in those same areas.



Health Effects of Lead

Lead is most damaging to children, especially from zero to 72 months. Although the Centers for Disease Control and Prevention (CDC) and State agencies set “levels of concern,” no amount of lead is safe in the body.¹⁵ Lead is harmful for the developing body and primarily affects the neurological system and leads to increased likelihood of ADHD and ADD.

A recent study conducted by several medical experts and published by the US National Library of Medicine found evidence to suggest that low blood lead levels can be linked to ADHD in children.¹⁶ The study monitored 236 children who ranged from 6–17 years old and

¹⁵ <http://www.cdc.gov/nceh/lead/>

¹⁶ Nigg, Joel, Molly Nikolas, Mark Knottnerus, Kevin Cavanaugh, and Karen Friderici. "Confirmation and Extension of Association of Blood Lead with Attention-Deficit/Hyperactivity Disorder (ADHD) and ADHD

whose blood lead levels ranged from less than 0.3 µg/dL to a maximum of 2.2 µg/dL with a mean of 0.73 µg/dL. It is important to note the blood lead levels observed in the children were the lowest ever studied in association to ADHD. The study sampled four groups one non-ADHD group and three groups ranging in severity of ADHD. The results of the study found that children with ADHD had a higher blood lead level than the children without ADHD. Parent and teacher reports that were conducted on the children helped to solidify the connection between the diagnosis of ADHD and blood lead concentration. The study should be eye opening considering many more children have blood lead levels between 1–5 µg/dL, which is currently below any accepted standards that require regulatory action.

The link between lead and ADHD is evident in a statement made by Rosalyn Brown the current occupant of Freddie Gray's childhood house,¹⁷ "All these kids that grew up in those houses, they all have ADHD. They have mood swings. They have anxiety," she said. Phil Silva the founder of the Dunedin Multidisciplinary Health and Development Study and Terrie Moffitt a professor at Duke University conducted an academic study on a group of 678 thirteen-year-olds.¹⁸ The study found that 58% of ADHD children became delinquent, compared with only 10% of non-ADHD children.¹⁹ A more recent paper written by Jessica Reyes a

Symptom Domains at Population-Typical Exposure Levels." US National Library of Medicine; National Institutes of Health. November 23, 2009. Accessed August 4, 2015.

¹⁷ McCoy, Terrence. "Freddie Gray's Life a Study on the Effects of Lead Paint on Poor Blacks." Washington Post. Accessed August 4, 2015.

¹⁸ Moffitt, Terrie E., and Phil A. Silva. "Self-Reported Delinquency, Neuropsychological Deficit, and History of Attention Deficit Disorder." *Journal of Abnormal Child Psychology J Abnorm Child Psychol* 6, no. 5 (1988): 553-69.

¹⁹ Reyes, Jessica. "Lead Exposure and Behavior: Effects on Antisocial and Risky Behavior Among Children and Adolescents." Amherst College. February 1, 2012. Accessed August 5, 2015.

professor at Amherst College cited three independent studies finding children with ADHD are five times more likely to be delinquent than children without ADHD. The increased evidence connecting lead exposure to ADHD even at low levels should trigger an automatic reassessment of current standards.

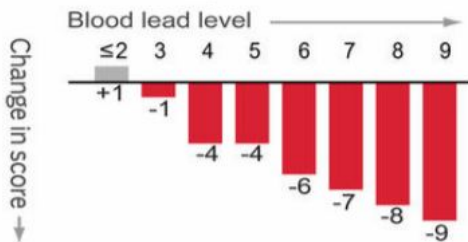
Lead in the bloodstream also decreases cognitive abilities and executive functioning in the prefrontal cortex, the area that controls aggression, impulse control, and emotional control. A study by the University of Illinois displayed below found that higher blood lead levels resulted in lower IQ scores.

Blood levels and test scores

Changes in third-grade ISAT performance as blood lead levels increase, relative to average score for children with the lowest lead levels at age 0-6. Blood lead level is measured in micrograms per deciliter.

Math scores

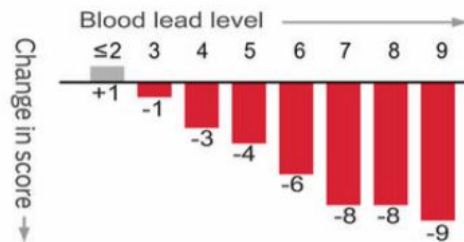
Average score of students with a blood lead level of ≤ 1 mcg/dL: **161**



Source: Anne Evens, University of Illinois, Chicago

Reading scores

Average score of students with a blood lead level of ≤ 1 mcg/dL: **159**



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Current Policy

Maryland first began addressing the problems of lead exposure in 1994 when the General Assembly passed a comprehensive lead law aimed at curbing the growing number of citizens with an elevated blood lead level (EBL). This law was aimed at rental home owners, and required every rental unit with lead exposure to be registered with an online registry maintained

by the Department of the Environment (MDE).²⁰ It also set in a place a Risk Reduction Standard (RRS) which all rental home owners must meet. Rental home owners are required to satisfy a the RRS, a test for lead contaminated dust, after every change of tenancy. This was followed by a physical inspection of the house by an MDE accredited lead inspector to verify the reduced risk of lead exposure.²¹ Along with the RRS, after every change in tenancy, the rental home owners are required to give the new tenants a notice of their rights as tenants, as well as educational packets containing information about lead poisoning and the risks of lead exposure.²²

While Maryland does not require mandatory testing for lead exposure, the State does require testing for children at ages one and two if they are either on Maryland's MEDICAID program or live in designated "at risk" areas for lead exposure.²³ Blood lead testing is most commonly done on children because of the damage done to the development of the brain from lead exposure. Once a lab takes a blood test, all of the results are sent to MDE, which keeps a database of the results of all tests taken in Maryland.²⁴ If a child tests with a blood level of 10 µg/dL, the MDE must report the child's information to the health department in the local jurisdiction and to the Department of Health and Mental Hygiene (DHMH).²⁵ At this point, case management ensues from the local health departments. This includes a psychological examination to determine any psychological effects of EBL, as well as an examination of the child's environment and home.²⁶ While there is follow up monitoring and nutritional guidance

²⁰ Md. ENVIRONMENT Code Ann. § 6-811

²¹ Md. ENVIRONMENT Code Ann. § 6-815

²² Md. ENVIRONMENT Code Ann. § 6-823

²³ "Childhood Blood Lead Surveillance in Maryland: Annual Report 2013," Maryland Department of the Environment Lead Poisoning Prevention Program. 2013

²⁴ Md. ENVIRONMENT Code Ann. § 6-303

²⁵ COMAR 26.02.01.05

²⁶ Annual Report 2013

for children who test between 5 and 9 µg/dL, there is no mandated coordination with local health departments or DHMH for case management. An environmental history is taken, but that does not constitute a mandated home inspection as it would for children testing with 10 µg/dL.²⁷

If a rental owner receives notice of a tenant with an EBL of 10 µg/dL or above, then they are required to satisfy a Modified Risk Reduction Standard in order to reduce further that child's exposure to lead at home.²⁸ This requires passing a dust test for contaminated dust done by an accredited inspector. If a renter fails to meet this Modified RRS, then MDE and local health departments have the authority to order a home inspection and lead abatement process.²⁹ Renters must also satisfy the Modified RRS if they receive from their tenants a notice of defect, which states that there is structural damage to the house, such as deteriorating walls or paint chipping.³⁰ The law, however, only regulates rental home owners and leaves the owner occupied homes without the same level of health standards regarding lead exposure. While owner occupied houses can still receive lead-safe or lead-free certifications from accredited inspectors, they are costly and required extensive work done on both the interior and exterior of the property. More recently, as the 1994 lead law has been expanded to cover homes built between 1950 and 1978 (previously unregulated by the 1994 law, which covered only homes built before 1950) Maryland began regulating the contractors who perform renovations and repairs on all houses built before 1978. This comes through the Environmental Protection Agency's (EPA) Renovation, Repair and Painting Rule (RRP), which states that all contractors working on

²⁷ Health Care Providers Clinical Recommendations and Follow up Testing: Clinical Recommendations. Maryland Department of the Environment Lead Poisoning Prevention Program http://www.mde.state.md.us/programs/Land/LeadPoisoningPrevention/HealthCareProviders/Pages/Programs/LandPrograms/LeadCoordination/healthcare/healthcare_followupreports.aspx

²⁸ Md. ENVIRONMENT Code Ann. § 6-819

²⁹ Annual Report 2013

³⁰ Md. ENVIRONMENT Code Ann. § 6-819

renovations on houses built before 1978 be accredited through the EPA, or through a State with EPA authorization.³¹ The RRP also sets forth certain standards that must be adhered to by all workers performing work in houses built before 1978.³² This universe of houses includes rental homes, but also applies to owner occupied housing as well.

Universal Testing: Background

In Maryland only children, ages one to two years old living in an at risk area or enrolled on Medicaid have to complete mandatory testing for lead exposure.³³ However, Maryland can still make additional steps to better understand the amount of children at risk. We recommend that the State of Maryland adopt a universal screening tests by way of point of care (POC) testing. POC testing takes place in the doctor's office or in an on-site mobile facility as opposed to in a lab. A recent study was completed on point of care (POC) testing by a Task Force within DHMH to see if (POC) testing is feasible to identify children who have been exposed to lead.

Point of Care Testing: Advantages

By accepting POC testing it will become easier and less time consuming for families in the State to get tested. POC testing will allow for fewer office visits eliminating extra transportation barriers while simultaneously making it a more financially sound option for lower income families. After the doctor administers a test and it is discovered a child has an elevated blood level, proper treatment can start immediately, compared to weeks of waiting for lab test results.³⁴ A service provider who started using POC testing reported to the Task Force that POC

³¹ 40 C.F.R 745.83

³² 40 C.F.R 745.85

³³ "Lead Poisoning Prevention Program: Childhood Blood Lead Surveillance in Maryland." November 2002. MDE. Accessed August 2, 2015.

³⁴ Mitchell, Clifford. "Report to the General Assembly by the Task Force on point of care testing for lead poisoning." January 14, 2015. DHMH. Accessed August 1, 2015.

testing on patients did not disrupt or slow down the flow of the clinic making it attractive to incorporate into the overall testing and vaccinations patients receive.

Point of Care Testing: Barriers

As with any program there some minor setbacks with POC testing. The first being there is no direct electronic reporting system that would allow service providers to send results to the Maryland Childhood Lead Registry (CLR). However, there are two proposed solutions.³⁵ The first proposal would be for the service providers to fax reports to the (CLR), which MDE currently allows.³⁶ The second proposal centers on the State creating a direct data entry platform that service providers can use. It would be similar to an immunization registry where doctors enter vaccination information for their patients directly. This type of system has already been deployed in Rhode Island, Wisconsin, Michigan, and New Jersey.

Another potential barrier includes varying reimbursement rates from insurers for POC testing, sample collection, and counseling. Most health care providers should be able to recover the costs for POC testing but providers from smaller practices have contracts that do not reimburse for lead testing. A potential solution would be for the State to work with Medicaid and private insurers to reevaluate reimbursement rates and the associated costs. Possibly, the most critical aspect of POC testing is having the care providers receive proper training to ensure an accurate test. Without the appropriate training test results patients can receive an inaccurate diagnosis.

³⁵ Mitchell, Clifford. "Report to the General Assembly by the Task Force on Point of Care Testing for Lead Poisoning." January 14, 2015. DHMH. Accessed August 1, 2015.

³⁶ Ibid

Point of Care Testing: Costs

In total a service provider should expect to pay \$6,581 - \$6,790 for the Lead Care Device II, registration, test kit, application fee, and staff time.³⁷ Should a service provider adopt the POC program it would need to test 434 patients annually under the current Medicaid reimbursement rate of \$12.52 per test to breakeven.³⁸ It is important to note that the Lead Care Device II is the only approved POC test for blood lead levels in the U.S.³⁹ The device works by collecting a drop of blood that it mixes with reagents. The results are then displayed directly on the devices screen. The test serves the purpose of a screening, and if an elevated blood level is detected the results must be confirmed through a second laboratory method. Currently, the LeadCare II device is not on the accepted CLIA-waived test list creating less incentive for service providers to use it due to extra costs and restrictions. To encourage the use of the POC LeadCare II, it is important that the State of Maryland advocate that the Laboratories Administration put the LeadCare II device on the CLIA-waived test accepted list.

Point of Care Testing: Medicaid

A vital way to expand use of POC lead testing in Maryland is through the Women, Infants, and Children (WIC) program. The WIC program already conducts a blood collection for hemoglobin levels on patients making an additional blood lead test less of a hassle.⁴⁰ In 2005 less than one-third of Wisconsin Medicaid children received their mandatory blood lead tests at one to two years of age.⁴¹ However, in 2008 testing went up 40 percent after health care providers

³⁷ Ibid

³⁸ Ibid

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

started using POC testing. This was made possible by Medicaid managed care organizations (MCO's) collaborating with WIC clinics to pay for testing. We recommend that the State of Maryland reach out to WIC clinics to assist them in coordinating with Medicaid MCO's to adopt POC testing. To create another incentive to adopt POC testing the State can recommended that Medicaid MCO's issue individual report cards to service providers to allow them to see if they meet the lead testing requirements.

Universal testing has led to increased testing rates, lower costs, and has made visits more convenient for families. A select number of service care providers in the State have shown that POC testing has been successfully integrated into their routine patient tests. Maryland needs to revise its current standards, encourage departmental collaboration between MDE and DHMH, create incentives for primary care providers to report data, and educate all parties on why increased testing is important to encourage successful implementation of universal testing.

Policy Proposal 1: Lowering “Level of Concern” from 10 µg/dL to 5 µg/dL

The Maryland Department of the Environment (MDE) currently maintains a database consisting of blood lead testing results of all children who have been tested for lead poisoning. As previously stated, the law mandates that these results are sent to MDE by the laboratories that perform blood tests and analyze the results. While all blood tests results are kept by MDE, action is only taken on those children who have tested at or above 10 µg/dL.⁴² This action consists of a developmental psychological examination, as well as coordination with local health departments for case management and a physical home inspection. Those who test between 5 and 9 µg/dL,

⁴² MDE Childhood Blood Lead Surveillance in Maryland, Annual Report 2013, <http://www.mde.state.md.us/programs/land/leadpoisoningprevention/Pages/index.aspx>

while still contaminated with dangerous amounts of lead in their bodies, receive follow up monitoring, but no mandated inspection of the child's home environment.

However, as of 2012, the Centers of Disease Control and Prevention lowered the threshold from 10 µg/dL to 5 µg/dL.⁴³ We propose that Maryland takes a tougher approach against lead and adopt CDC's guidelines. Since no amount of lead is safe in the human body, it is important that Maryland expand its resources to children who continually test with blood lead levels between 5 and 9 µg/dL.

The lowering of the threshold will also place new responsibilities on property owners. Currently, if a child in a rental unit has a blood lead level of 10 µg/dL or higher, the rental unit owner must meet the Risk Reduction Standard (RSS).⁴⁴ We propose that if a child tests with a blood lead level between 5 and 9 µg/dL, the rental unit owner and household will first receive a notification and education on possible lead hazards. When the child receives their second blood lead level test (approximately 3 months after the first test) and the BLL is not lower than 5 µg/dL, the rental unit owner will be required to meet the current Risk Reduction Standard. This new practice aims to prevent future exposure to lead and is an earlier intervention than what is currently in place.

With a new adoption of CDC's guidelines for lead blood lead levels, Maryland would solidify its commitment to make sure every household lives lead free.

Policy Proposal 2: Funding Increase for Sustainability

Our proposed policy of extending case management to those who test at levels of 5 to 9 µg/dL will increase the number of children who are referred to local health departments and

⁴³ http://www.cdc.gov/nceh/lead/ACCLPP/blood_lead_levels.htm

⁴⁴ COMAR 26.02.01.05

DHMH. Statistics from the Lead Poisoning Prevention Program's 2013 Annual Report show that while there were 304 new cases of blood lead levels of 10 µg/dL in 2013, there were also 1,724 new children who tested between 5 and 9 µg/dL.⁴⁵ Our proposal would, after a second test confirms an elevated blood level, require MDE to notify local health departments and DHMH for around six times more affected children. Additionally, it would require MDE and local health departments to bear significant responsibilities for case management for these children. We feel, however, that if Maryland is serious about eradicating new cases of childhood lead poisoning, then the State should consider expanding its breadth of case management to those children who, while currently under the designated level that triggers management, still contain in their bodies harmful amounts of lead which only will grow with continued exposure.

In Baltimore City, an area which currently sees the highest number of new cases of elevated blood lead levels, the Baltimore City Health Department provides case management for children with elevated blood lead levels at 10 µg/dL or above.⁴⁶ The city, in 2013, recorded 170 new cases of elevated blood lead level over 10 µg/dL, while also recording 744 new cases of levels between 5 and 9 µg/dL.⁴⁷ Requiring case management for children with confirmed levels of 5 to 9 µg/dL would put a serious burden on the health department's ability to effectively treat the new universe of children requiring management. We propose increasing funds to Baltimore City Health Department to give them the ability to provide quality care and attention to all those who require it. Attention to Baltimore City must remain a priority for the State if it wishes to make further progress. The city has seen substantial success in its fight to eradicate lead

⁴⁵ Annual Report 2013

⁴⁶ Interview with Horacio Tablada, Deputy Secretary of the Environment. Conducted July 30, 2015

⁴⁷ Annual Report 2013

poisoning over the past twenty years, proven by its 96 percent drop in new cases of elevated blood lead levels of 10 µg/dL from 1993 to 2013⁴⁸. However, more can still be done. By increasing the capacity Baltimore City's Health Department to provide effective case management to children testing between 5 and 9 µg/dL, the city can increase the amount of children that they are treating, and in turn, hopefully see a further decrease in new cases of lead poisoning above 10 µg/dL.

Outside of Baltimore City, after local health departments are notified and case management begins, MDE is responsible for conducting environmental assessments of the child home.⁴⁹ Currently, MDE provides certified risk assessors to conduct the home assessments, with no cost to the families affected.⁵⁰ The cost is paid by the Lead Poisoning Prevention Special Fund and covers the entire State of Maryland outside of Baltimore City.⁵¹ Baltimore city is responsible for 1,121 of the 2,251 total cases of blood levels between 5 and 9 µg/dL in the State, as well as 153 of the 371 total cases of blood levels at 10 µg/dL and above.⁵² While the rest of the State is responsible for about half of the blood lead poisoning, representing a substantial increase in the amount of environmental assessments MDE would need to undertake under our proposals. An increase in funds to the Lead Poisoning Prevention Program's Special Fund would allow MDE to adequately provide the assessments that will be needed to make sure the State reduces its exposure to lead. The problem of lead does not only reside in Baltimore City; more rural counties, such as Allegany, Garrett, and Caroline Counties, have seen high percentages of

⁴⁸ Ibid

⁴⁹ Interview with Paula Montgomery, Lead Poisoning Prevention Program Manager. Conducted July 30, 2015

⁵⁰ Interview with Horacio Tablada

⁵¹ Ibid

⁵² Annual Report 2013

children testing between 5 and 9 µg/dL.⁵³ Without providing these children the proper treatment, these children are left to bear the adverse effects of lead in their systems, which is shown to lead to lower test scores and increased aggressive behavior. Increasing funds to the Lead Poisoning Prevention Program's Special Fund will equip MDE to properly and effectively reduce the citizens' risk of lead exposure.

Policy Proposal 3: Increase Education on Lead Poisoning

For families living in rental units in Maryland, they have a right to live in a lead free home. That is why all rental units in Maryland made before 1978 must be registered with the Maryland Department of the Environment.⁵⁴ If there is a defect in the house, like chipped paint, the family should notify their landlord to ensure there is no lead hazard. Also, before a family moves into a rental unit, the landlord must prove that the home is safe to live in. However, these rights are not always known to tenants. Tenants also may be afraid to report to their landlord.⁵⁵ This is why Maryland must improve its education efforts towards tenants. A child in a rental unit should not experience lead poisoning because his or her parents did not know their rights when it came to living in a lead-free home. Baltimore City currently has a public health campaign to raise awareness about opioid overdoses and Naloxone.⁵⁶ These posters and billboards around the city target individuals and households who may benefit from public health campaign. In a similar fashion, Maryland could have a public health campaign in areas of high rental-unit concentration. The posters and billboards would encourage parents to get their children tested and would remind renters of their rights. It is imperative Maryland improve its education efforts

⁵³ Ibid

⁵⁴<http://www.mde.state.md.us/programs/Land/LeadPoisoningPrevention/RentalPropertyOwners/LeadRegistration/Pages/index.aspx>

⁵⁵ Interview with Horacio Tablada

⁵⁶ dontdie.org

on lead poisoning and prevention because it will help households take initiative to invest in their children and communities well-being.

Conclusion

For the State of Maryland to eliminate the remaining cases of lead poisoning it needs to take a comprehensive targeted approach. Today the areas where lead poisoning exists are much more concentrated, primarily in a select number of communities within the City of Baltimore that lead abatement efforts haven't even reached yet. Given the rate of crime that can be tied to lead the State has a choice. It can continue to incarcerate criminals who grow up living in lead exposed houses or it can invest in the future of these children. There is a mutual understanding that there are a limited amount of resources and funds to go around. However, the State will save millions of dollars in funds that would have went to DJS to incarcerate adolescents living in these affected neighborhoods by investing in lead abatement. It has been proven by numerous studies cited within this paper that the most effective way to reduce crime is eliminating lead exposure in urban communities such as in Sandtown-Winchester the neighborhood Freddie Gray grew up in. Even if funds are not immediately available for primary lead prevention measures the first step should start with collaboration between DHR and DHCD. Efforts to reduce lead poisoning should begin inside houses and in affected communities before children end up in Maryland's criminal justice system. If the State seriously considers our proposals we might not be talking about lead poisoning in Maryland by the end of the decade.