Report

Progress in Achieving Universal Blood Lead Screening in Designated High-Risk Areas of Childhood Lead Poisoning

Prepared in Response to the Maine State Legislature

Resolve 2007 Chapter 186

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Introduction

The 123rd Maine Legislature enacted Public Law Chapter 186, a Resolve "To Achieve Universal Blood Lead Level Screening in Maine Children."[1] It directed the Department of Health and Human Services, Maine Center for Disease Control and Prevention (ME-CDC) to report annually to the Joint Standing Committee Health and Human Services on the following:

1) Identification of areas of the State with high-risk for childhood lead poisoning;
2) Progress made in achieving universal blood lead screening in designated high-risk areas for children age 12 to 24 months of age, and children age 25 to 72 months of age who have not previously been tested for blood lead levels or who have had a change in risk of exposure; and
3) Lessons learned in attempting to achieve universal blood lead testing and any recommendations for screening.

Screening for blood lead identifies children who have elevated blood lead levels and additionally identifies housing that may have environmental lead hazards capable of causing future poisonings. Screening for blood lead involves collecting a blood specimen either by a venous draw or a capillary blood sample (typically a finger stick). These blood specimens are analyzed for lead, mostly by Maine's Health and Environmental Testing Laboratory, but due to recent changes in state law, lead analyses can now be made in the office of health care providers using technology for "in-office" blood lead determination (Public Law 2011 Chapter 183). Current state statutory requirements for blood lead screening require that children covered by MaineCare be tested for blood lead at 1 and 2 years of age. All other Maine children are required to be screened for blood lead at these same ages unless a risk assessment indicates the absence of lead hazards (22 MRSA §1317-D).

For every child identified with an elevated blood lead level, public health efforts are undertaken to help reduce those blood lead levels and prevent them from worsening. Public health actions are also undertaken to address the environmental lead hazards in the associated housing, including assessing hazards in other units for multi-unit dwellings.

This document presents the fourth report to the Maine Legislature on progress made in achieving universal screening in high risk areas. This report provides an update on identifying high-risk areas for childhood lead poisoning, progress in promoting screening for blood lead in these high risk areas, and lessons learned.

[1] http://www.mainelegislature.org/ros/LOM/LOM123rd/123S1/RESOLVE186.asp

The major findings contained in this report are as follows:

- Lewiston-Auburn, Biddeford-Saco, Portland-Westbrook, and Bangor remain high-risk areas for childhood lead poisoning. Both Bangor and Portland-Westbrook have experienced significant reductions in lead poisoning in recent years and are approaching rates similar to the rest of the state. Sanford, formerly designated as a high-risk area, now has lead poisoning rates nearly identical to the rest of the state, warranting a reassessment of its high-risk designation.

- In the high-risk areas the percent of children age 12-23 months screened for blood lead is as follows:

    - 80% for Biddeford-Saco
    - 70% for Bangor
    - 63% for Sanford
    - 53% for Portland-Westbrook
    - 44% for Lewiston-Auburn

    The rest of the state has an overall screening rate for this age group of 48%.

- Statewide and local efforts to promote blood lead screening continue, including: 1) targeted mailings to all Maine families with a 1-year-old; 2) local outreach in high-risk communities such as commuter bus posters, posters in laundromats, flyers in pizza boxes, and neighbor-to-neighbor programs; and 3) ME-CDC outreach and training of health care providers. These efforts are largely supported by the Lead Poisoning Prevention Fund.

- Providers are beginning to adopt "in-office" testing of blood lead, as allowed under Public Law 2011 Chapter 183. Since November 2012, three medical practices have requested and been granted approval for in-office testing, including one serving the Lewiston-Auburn high-risk area. In-office testing is intended to address a known barrier to blood lead screening – the need for some patients to leave the doctor's office and travel to another location to have blood sample drawn for lead analysis.

- The U.S. Centers for Disease Control and Prevention has changed its recommended benchmark for an elevated blood lead level (eBLL). The benchmark for an eBLL was 10 micrograms lead per deciliter blood (10 µg/dL). The new level will be a value of 5 µg/dL. This change in federal policy is based on a growing body of studies concluding that blood lead levels less than 10 µg/dL can harm children. An addendum to this report describes this change in federal guidelines, and for the first time presents estimates of the number of Maine children under age 6 years with a blood lead level between 5 and 10 µg/dL. ME-CDC will include these lower BLL levels in our surveillance going forward.

1. Updates in Identifying High-Risk Areas of Childhood Lead Poisoning

ME-CDC has recently updated its identification of high-risk areas of childhood lead poisoning. Prior efforts compiled and geocoded data on the occurrence of children with elevated blood lead levels by town for the time period of 2003 through 2007. These data were mapped to identify communities of the state that have a high number of cases of newly identified children with an elevated blood lead level (defined by convention as a confirmed blood lead level equal to or above 10 micrograms lead per deciliter blood, or 10 µg/dL).

This mapping effort identified five communities of the state that collectively represented about 40% of all identified cases of children with an elevated blood lead level (eBLL). These five areas were: Bangor, Biddeford-Saco, Lewiston-Auburn, Portland-Westbrook, and Sanford. Higher counts of children with eBLLs are to be expected for towns with higher populations. To determine whether these five communities represented areas of "high risk" for children with eBLLs, ME-CDC computed a measure that would be comparable across different population sizes - the rate of lead poisoning. The rate (or percent) of lead poisoning is defined as the number of children with eBLL divided by the total number of children screened for blood lead for a particular community. Using this measure, we determined that the rates of lead poisoning for screened children were significantly higher in these five communities compared with the rate for rest of the state (i.e., statewide excluding these five communities). Thus, these five communities were designated as high-risk.

In the most recent analyses, this procedure has been repeated using data collected between 2008 and 2011. Figure 1 contrasts the town-level numbers of children with eBLLs for 2004-2007 with 2008-2011. There were 700 newly identified children with an eBLL during 2004-2007 from 188 towns. For the years 2008-2011, there were 445 newly identified children with an eBLL from 140 towns. **Thus, there has been a sizeable decrease in both numbers of new cases and number of towns where an eBLL was reported.**

Table 1 presents updated estimates of the percent of screened children who had an eBLL for the 2008-2011 time period for each of the previously identified high-risk communities and the rest of Maine. The communities of Lewiston-Auburn and Biddeford-Saco continue to have rates of eBLLs significantly above the rates for the rest of the state, and thus clearly remain high-risk communities. It is noteworthy that Biddeford alone has a rate of 1.8 percent of screened children having an eBLL. Both Portland-Westbrook and Bangor have seen substantial decreases in their rates of eBLLs (see Table 1) and are approaching rates closer to the rest of state. Sanford no longer has a rate that is different from the rest of the state, and thus its continued status as an identified high-risk community will now be re-assessed.

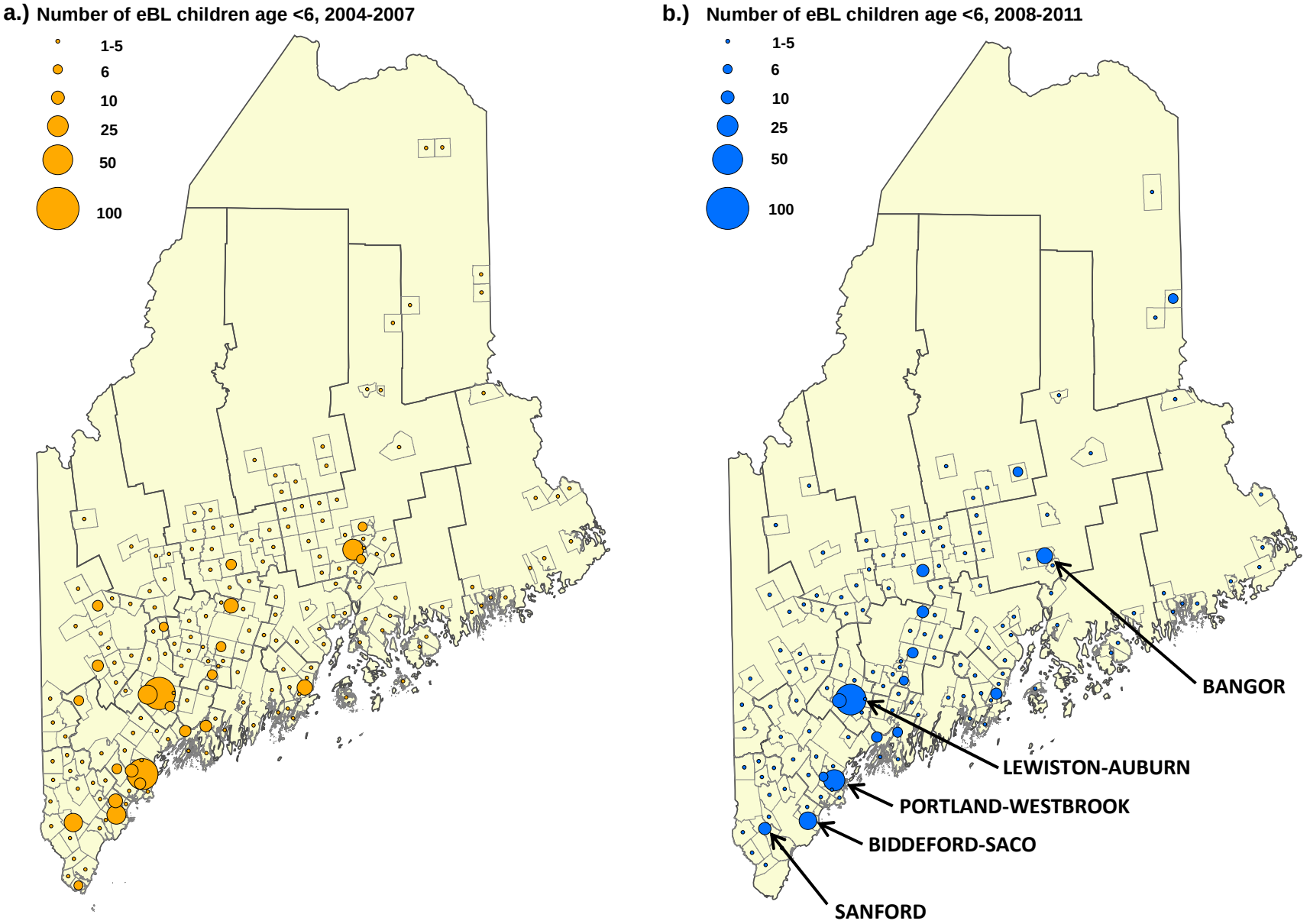

Figure 1. Town-level numbers of children less than 6 years of age with blood lead levels of 10 ug/dL or above for years: a) 2004-2007, and b) 2008-2011. These maps code counts of 1-5 as a single and smallest dot size for privacy protection, other values (≥6) are proportionally sized. Town boundaries are shown for any town with an eBL between 2004 and 2011. Thick gray lines are county boundaries.

Table 1. High-risk communities based on percent of newly identified children under 6 years of age with an elevated blood lead level relative to the number of children screened for the time period of 2008 to 2011.

Selected Area	2004-2007		2008-2011	
	Number EBLL[(a)] (4 year total)	Percent[(b)]	Number EBLL[(a)] (4 year total)	Percent[(b)]
Bangor	30	1.9%	18	1.0%
Biddeford/Saco	40	2.3%	26	1.4%
Lewiston/Auburn	99	3.0%	80	2.4%
Portland/Westbrook	78	1.9%	38	1.0%
Sanford	24	1.8%	11	0.8%
Rest of State[(c)]	429	1.0%	272	0.7%

[(a)] eBLL = elevated blood lead level is a blood lead level of 10 µg/dL and above
[(b)] Percent = number of eBLL divided by number screened.
[(c)] Statewide rates excluding the five high-risk areas.

2. Progress toward universal blood lead screening in designated high-risk areas.

The major objective of Resolve 2007 Chapter 186 was to promote progress toward achieving universal blood lead screening in high-risk areas for children age 12 to 24 months of age, and children age 25 to 72 months of age who have not previously been screened for blood lead or whose risk of exposure has changed. In contrast to the Resolve, current state law requires blood lead screening for 1 year old and 2 year old children covered by MaineCare. All other Maine children are required to be screened for blood lead at these same ages unless a risk assessment indicates the absence of exposure to lead hazards (22 MRSA §1317-D). ME-CDC consequently tracks screening rates for 1 year olds (12-23 months) and 2 year olds (24 to 35 months).

A. Trends in blood lead screening in high risk areas.

ME-CDC tracks screening of children for blood lead by two primary measures. One measure is to simply track the number of children screened for blood lead by age group by location. This approach has the advantage of being based solely on the counts of blood lead test results reported to ME-CDC, and is a direct measure of the effort by health care providers. A second approach is to compute the percent of children screened for blood lead relative to the number of children living in a given town for a particular age group. This approach makes use of the counts of reported tests discussed above divided by the population of children in a particular age group for a particular location. The advantage of this approach is that it puts screening rates on a common scale so different locations with differently sized populations can be compared, or locations with changing populations can be compared over time. Complicating this approach, however, is uncertainty in estimating the population of children living in a

particular age group at the town level. Estimates are most reliable in years closest to the latest census population estimates (e.g., 2000, 2010).

Figure 2 presents trends in the number of blood lead tests by high-risk community for the years 2003 to 2011. In general, the screening rates were either stable or increasing over time. The very recent increased amount of testing in Biddeford-Saco is noteworthy. Screening of 2-year olds (24 to 35 month olds) is substantially lower than screening of 1-year olds, despite the State law requiring testing at both ages. This difference has been apparent for years, and is most likely due to health care providers making an informed decision to not repeat a second blood lead test on a child unless there is a change in risk factors.

Table 2 presents the percent of children living in these communities that have received a blood lead test at age 12 to 23 months or age 24 to 35 months. With the exception of Lewiston-Auburn, all high risk areas have screening rates that are above rates for the rest of the state. Recent increases for screening rates in Biddeford-Saco show progress toward universal screening of 12 to 23 month olds (80%). Bangor has reached 70%. Screening rates for Sanford appear to have rebounded from a drop believed associated with a long-time health care provider leaving the community. Screening rates for children 24 to 35 months are generally increasing, but are lower than screening rates of 1-year olds.

Table 2. Blood lead screening rates for 12 to 23 month old and 23 to 35 month old children for five high-risk communities for the calendar year 2011, as percent of screened children with an elevated blood lead level.

Selected Area	Percent 12 to 23 month olds screened	Percent 24 to 35 month olds screened
Bangor	70.8%	37.7%
Biddeford/Saco	80.7%	47.7%
Lewiston/Auburn	44.2%	29.8%
Portland/Westbrook	52.6%	28.2%
Sanford	62.9%	36.4%
Rest of State*	47.9%	27.5%

* Statewide rates excluding the five high-risk areas.

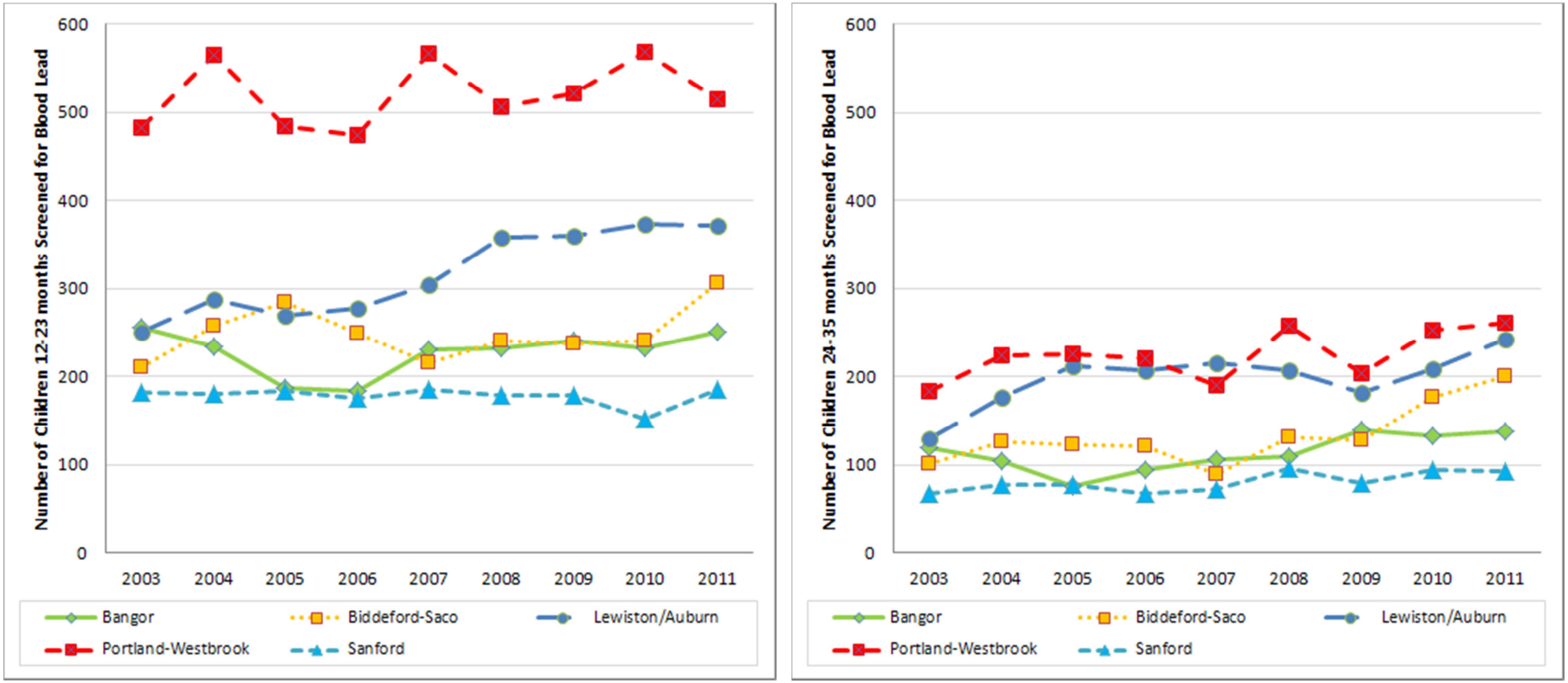

Figure 2. Changes in the number of screening tests on (a) 12-23 month old and (b) 24-35 month old children for five Maine communities identified as high-risk for lead poisoning.

B. Efforts to promote blood lead screening in designated high-risk areas and statewide.

Increasing blood lead screening is being promoted by continued outreach to increase awareness of the importance of blood lead screening at the state level, with additional efforts in the high-risk communities. Additionally, health care provides can now provide in-office analysis of blood lead, which is intended to lessen a known barrier to blood lead testing – the need for patients to travel to an off-site location to have their blood tested for lead. Each of these efforts are briefly discussed below.

i.) Promotion of Blood Lead Screening

The ME-CDC is continuing several initiatives intended to promote increased blood lead screening statewide as well as in high-risk areas. These initiatives are largely made possible by the Lead Poisoning Prevention Fund, established by the Legislature in 2005 (22 MRSA §1322-E).[2] These initiatives are as follows:

- An annual, statewide, targeted mailing to all families with children between the ages of 1 and 2 years of age. The mailing consists of a brochure that includes information for families about lead paint hazards; an offer of a free home lead dust test kit; and a postage-paid return card to request more information, including how to get a child's blood tested for lead. The brochure is available for viewing online.[3] Approximately 11,000 brochures were sent out statewide in October 2012 to all Maine families with 1-year-old children as identified through the Maine Birth Certificate Registry.

- Funds from the Lead Poisoning Prevention Fund are used to provide contracts to community coalitions (Healthy Maine Partnerships) in the five high-risk areas to promote identification of lead hazards, to support landlord and tenant education and outreach, and

[2] The Lead Poisoning Prevention Fund is a nonlapsing fund established for the following purposes: a) Contracts for funding community and worker educational outreach programs to enable the public to identify lead hazards and take precautionary actions to prevent exposure to lead; b) An ongoing major media campaign to fulfill the purposes of the educational and publicity program required by section 1317-B; c) Measures to prevent children's exposure to lead, including targeted educational mailings to families with children that occupy dwellings built prior to 1978; d) Measures to prevent occupational exposures to lead for private and public employees; e) Funding an assessment of current uses of lead and the availability, effectiveness and affordability of lead-free alternatives; f) Funding for educational programs and information for owners of rental property used for residential purposes; and g) Implementation of the lead-safe housing registry by the Department of Environmental Protection pursuant to Title 38, chapter 12-B. The Fund is supported by a 25 cent per gallon annual fee imposed on manufactures and wholesalers of paint sold in the State of Maine. http://www.mainelegislature.org/legis/statutes/22/title22sec1322-E.html .

[3] http://www.maine.gov/dhhs/mecdc/environmental-health/eohp/lead/documents/leadmailerweb.pdf

to promote blood lead screening. Approximately $30,000 is being allocated to each high-risk area annually. The first funds were provided to communities beginning in the summer of 2009. Examples of local education and outreach efforts specific to increasing screening rates are described below:

Bus Posters: The Healthy Maine Partnership in Bangor has placed posters on public transportation buses operated by the city to serve the Greater Bangor Region. Populations with lower incomes are more likely to use the bus, and the bus makes regular trips through areas of the city known to have housing with potential lead hazards. In 2011, The Healthy Maine Partner placed three public service advertisements inside, and a larger version on the outside, of Community Connector buses. In 2012, this campaign was expanded to include 25 signs on the inside of all city "Community Connector" buses and 4 additional exterior signs to add to the one from last year. All downtown area route buses and those passing through high-risk areas will have both exterior and interior signage, and all city buses had interior signage displayed for the month of October 2012. The advertisements are aimed at parents of young children, encouraging them to check with their child's doctor about a blood lead test. The bus posters have now been implemented in the Lewiston-Auburn and Sanford communities as well.

Figure 3. Bus poster on side of Bangor-area Community Connector Bus.

Laundromat and Pizza Box Flyers: Several high-risk communities have begun to distribute a lead poisoning prevention flyer to selected laundromats as lower income

tenants often use these facilities.[4] Community partners are also working with local Pizza Huts and Dominos to have lead poisoning prevention flyers distributed with pizza deliveries.[5]

Figure 4. Laundromat Flyer.

Targeted outreach to minorities / ethnic groups: In partnership with Catholic Charities, the Healthy Maine Partnership in Portland is continuing to conduct free classes for recent immigrants. These classes provide lead poisoning prevention and screening education both in the attendees' native language and through translated written materials. In Lewiston-Auburn, DVDs with lead poisoning prevention messaging in Somali were distributed, and there were eight public service announcements on a Somali radio show identifying lead prevention activities, including screening. Lewiston-Auburn is also continuing their "Neighbor to Neighbor" outreach program. In the Neighbor to Neighbor

[4] http://www.maine.gov/dhhs/mecdc/environmental-health/eohp/lead/documents/portlandlaundry.pdf

[5] http://www.maine.gov/dhhs/mecdc/environmental-health/eohp/lead/documents/portlandpizza.pdf

program, Somali and Somali Bantu women received training about lead poisoning prevention and the importance of screening, either directly or through the train the trainer model. The women who have been trained then do outreach to neighbors in their community.

ii.) Implementation of Legislation to allow "in-office" blood lead testing.

Public Law 2011 Chapter 183 amended the Lead Poisoning Control Act (22 MRSA § 1319) in an effort to address a known barrier to blood screening: the need for some patients to leave the doctor's office and travel to another location to have a blood sample drawn for lead analysis. To address this barrier, the Maine Legislature broadened the number and types of facilities which can perform blood lead analysis. This change allows health care providers, facilities or clinics that dispense benefits of the Women, Infants and Children Special Supplemental Food Program of the federal Child Nutrition Act of 1966 (WIC), and Head Start facilities to perform in-office blood lead analyses as long as they have been approved by the Department of Health and Human Services (DHHS) and can report results electronically.

The current device on the market used to perform in-office blood lead analysis allows a health care provider to provide blood lead results to the patient at the time of an office or clinic visit. If the level is high, the clinician can immediately provide the patient with a referral to a laboratory for a confirmatory venous blood lead test as well as connect them with services to reduce exposure to lead hazards.

The legislation requires the DHHS to develop rules for implementing this law. Those rules have now been implemented[6], and outreach has begun to providers in Maine to make them aware of this new blood lead screening option. The rules define those settings where in-office analysis of blood lead can occur, establish the requirements for electronic reporting of test results to the ME-CDC, and establish a process for granting approval for in-office testing. The program has developed a website to help explain the application procedure for practices.[7] Currently, a practice serving the Lewiston area and a practice serving the Waterville and Skowhegan areas have applied for and received approval for in office blood lead screening and submitting results. A third practice serving the Manchester area has also been approved.

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[6] 10-144 Chapter 292. Rules Relating to the Lead Poisoning Control Act. October 22, 2012

[7] http://www.maine.gov/dhhs/mecdc/environmental-health/eohp/lead/ld300/in-office-testing.shtml

3. Lessons learned in attempting to achieve universal blood lead screening.

As we have learned more about our high-risk communities, we continue to improve our ability to identify neighborhoods where lead poisoning is more common. Portland-Westbrook is a good example of this clustering of high-risk areas, as illustrated in Figure 5. This figure shows the clustering of children with eBLLs as distinct zones with progressively darker shading indicating greater numbers. This type of map illustrates neighborhoods with higher counts of children with eBLLs. There are both distinct areas where the occurrence of children with eBLLs are common, yet others areas where they are rare.

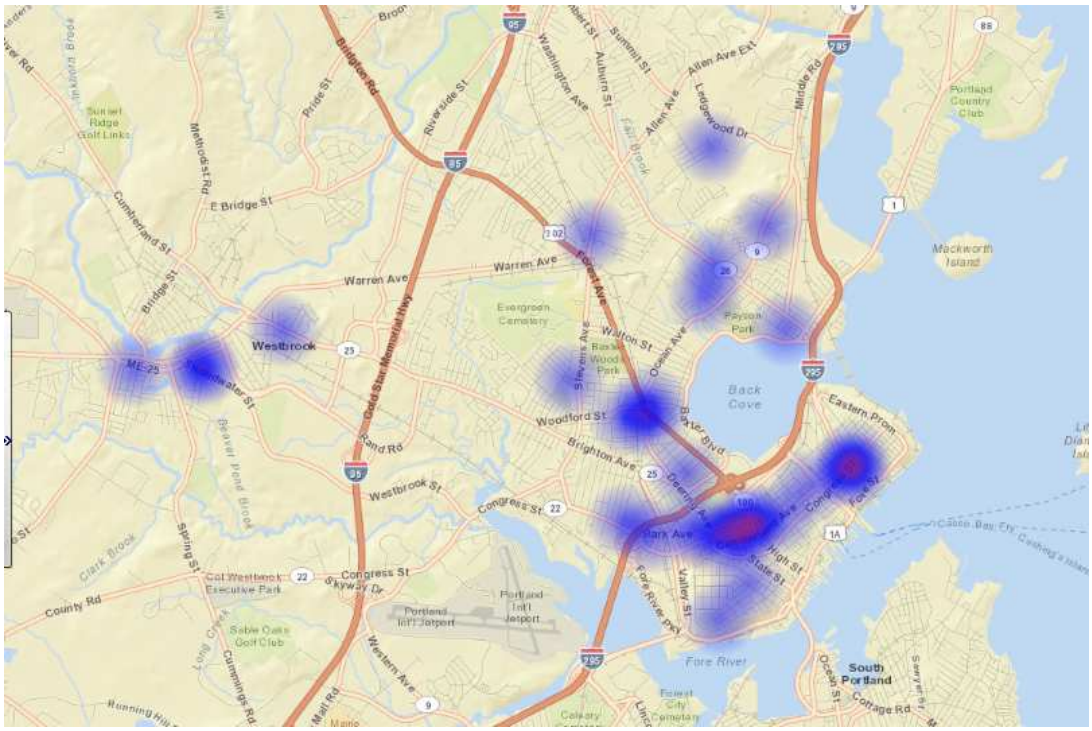

Figure 5. Areas of high-risk for having children with elevated blood lead levels in Portland and Westbrook. Based on data collected from 2008 to 2011.

For these neighborhoods where lead poisoning is rare, universal screening is of questionable value and promoting screening can be a challenge. Yet there are also neighborhoods where universal screening would be very appropriate. While ideally we would track whether universal screening is being achieved in these smaller neighborhood-level areas, our ability to track screening rates for blood lead at the neighborhood level is limited by the lack of detailed sub-town level population data.

Over the past year, ME-CDC has developed new mapping capabilities to begin to track blood lead screening activity in high-risk neighborhoods. While currently this mapping cannot assess the screening "rate" for children, it can track the number of screenings and explore whether screening efforts are reaching children in high-risk areas. Figure 6 shows an example of such a map for the Lewiston-Auburn area. Maps such as these are being used to help target outreach and education toward high-risk areas.

Figure 6. Number of children in Lewiston-Auburn screened for blood lead (shaded areas) and number of children with elevated blood lead levels (sized dots) aggregated to the census block level for data collected from 2008 to 2011.

4. **Recommendations for Screening.**

ME-CDC has no additional recommendations for screening of children for blood lead at this time. Our major high-risk areas for lead poisoning in Maine have been identified and mapped in sufficient detail to allow local partners to promote blood lead screening and primary prevention education and outreach in these areas. ME-CDC is continuing to support local partners in their efforts with resources from the Lead Poisoning Prevention Fund, and is continuing to promote blood lead screening through its statewide mailing to all Maine families with a 1-year-old, through outreach to health care providers, and by supporting health care providers who want to perform in-office blood lead analyses. New capabilities to map the occurrence of blood lead poisoning and screening at the neighborhood level are enabling ME-CDC to track blood lead screening at the neighborhood level.

Appendix

Background on Lead Poisoning related terms and measures: "Lead Poisoning", "Elevated Blood Lead Level", and "Intervention Level"

In 1991, the Maine State Legislature established a goal of eliminating childhood lead poisoning by 2010 (22 MRSA §1314-A) – a goal Maine has yet to meet. "Lead poisoning" was defined by statute as a confirmed elevated level of blood lead that is injurious, as defined in rules adopted by the department using *intervention levels* no higher than those set by the federal Centers for Disease Control (CDC). Over the years, the federal CDC has changed its recommended intervention level in response to scientific health studies demonstrating adverse effects of lead at lower blood lead levels. Between 1960 and 1985, the blood lead level for individual intervention in children was lowered from 60 micrograms lead per deciliter of blood (60 µg/dL) to 25 µg/dL. In 1991, the CDC recommended lowering the level for individual intervention to 15 µg/dL and implementing community-wide primary lead poisoning prevention activities in areas where many children have BLLs ≥ 10 µg/dL. Levels below 10 µg/dL were not considered lead poisoned.[8] In 2005, CDC largely reaffirmed the 1991 intervention levels. However, CDC recognized the accumulating evidence indicating adverse impacts on cognitive function in children with blood lead levels below 10 µg/dL, and emphasized that a blood lead level of 10 µg/dL, often referred to as an "elevated" blood lead level, should not be interpreted as a toxicologic threshold for lead poisoning.[9]

In response to recommendations included in a recent report from the national Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP),[10] the federal CDC has dropped use of the term blood lead "level of concern" based on compelling evidence that blood lead levels below 10 µg/dL are associated with IQ deficits, attention-related behaviors, and poor academic achievement.[11] The federal CDC has concurred with the conclusion of the ACCLPP that it is not possible to identify a safe blood lead level, and consequently a blood lead "level of

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[8] http://wonder.cdc.gov/wonder/prevguid/p0000029/p0000029.asp

[9] http://www.cdc.gov/nceh/lead/publications/PrevLeadPoisoning.pdf

[10] The Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP) advises and guides the Secretary and Assistant Secretary of the U.S. Department of Health and Human Services and the Director of the Centers for Disease Control and Prevention regarding new scientific knowledge and technical developments and their practical implications for childhood lead poisoning prevention efforts.

[11] Report of the Advisory Committee on Childhood Lead Poisoning Prevention of the Centers for Disease Control and Prevention, "Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention", January 4, 2012.

concern" cannot be used to define individuals in need of intervention.[12] The federal CDC is replacing its use of a blood lead level of 10 µg/dL as the threshold for an "elevated" blood lead level with a new "reference level" to be based on the 97.5th percentile blood lead level in a random sample of U.S. children as clearly indicating "elevated" exposure. This reference value is currently 5 µg/dL.

Maine CDC's current rules are largely consistent with the federal CDC's 2005 intervention levels: a blood lead level of 15 µg/dL is used as the threshold for individual interventions such as an environmental lead inspection, though individual interventions may also be initiated at blood lead levels as low as 10 µg/dL if the levels are confirmed and persistent. Community-wide interventions are currently initiated based on high-risk areas for confirmed blood lead levels about 10 µg/dL. For this reason, ME-CDC has historically tracked and mapped the occurrence of blood lead levels in children of 10 µg/dL and above.

In response to the new federal recommendations, ME-CDC is developing the ability to track the number of newly identified children with a confirmed blood lead level of 5 µg/dL and above. There are challenges to tracking these lower levels, because as of yet there is no national guidance recommending health care providers confirm all blood lead levels between 5 and 10 µg/dL. As a consequence, many of these results obtained by capillary testing are not confirmed with either a repeat capillary within 30 days or a venous sample. Unless capillary samples are confirmed, it is difficult to know whether reported levels reflect true blood levels versus contamination for any lead dust on the skin surface.

ME-CDC is currently tracking the number of newly identified confirmed children with blood lead levels of 10 µg/dL and above, and has begun to track the number of newly identified children with a confirmed blood lead level of 5 to < 10 µg/dL as well as the number with a unconfirmed blood lead level of 5 to < 10 µg/dL (Figure A-1). All three of these measures appear to decrease at similar rates, reducing by a half about every 5 to 6 years.

In summary, there appears to be no safe amount of lead exposure for children. Changes in brain function related to low-level lead exposure (i.e., blood lead levels less than 10 micrograms lead per deciliter blood, 10 µg/dL) have been shown to affect school performance, educational attainment, and IQ scores. The association between lead exposure and IQ and future income earnings is well established in the scientific literature.[13] Mary Davis from the University of

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[12] CDC Response to Advisory Committee on Childhood Lead Poisoning Prevention Recommendations in "Low Level Lead Exposure Harms Children: A Renewed Call of Primary Prevention".

[13] Landrigan, Phillip J., Clyde B. Schechter, Jeffrey M. Lipton, Marianne C. Fahs and Joel Schwartz. 2002. "Environmental Pollutants and Disease in American Children: Estimates of Morbidity, Mortality, and Costs for

Maine estimated that at 2005 levels of lead exposure, each new yearly cohort of Maine children would suffer on average a one-point loss in IQ score and as a result earn in aggregate $270 million less over their lifetimes.[14] While much progress has been made in reducing lead exposure nationally and in Maine by getting lead out of gasoline, getting lead out of canned solder, and getting lead out of paint, we are still dealing with a legacy of past use of lead paint in Maine housing (especially housing built before 1950).

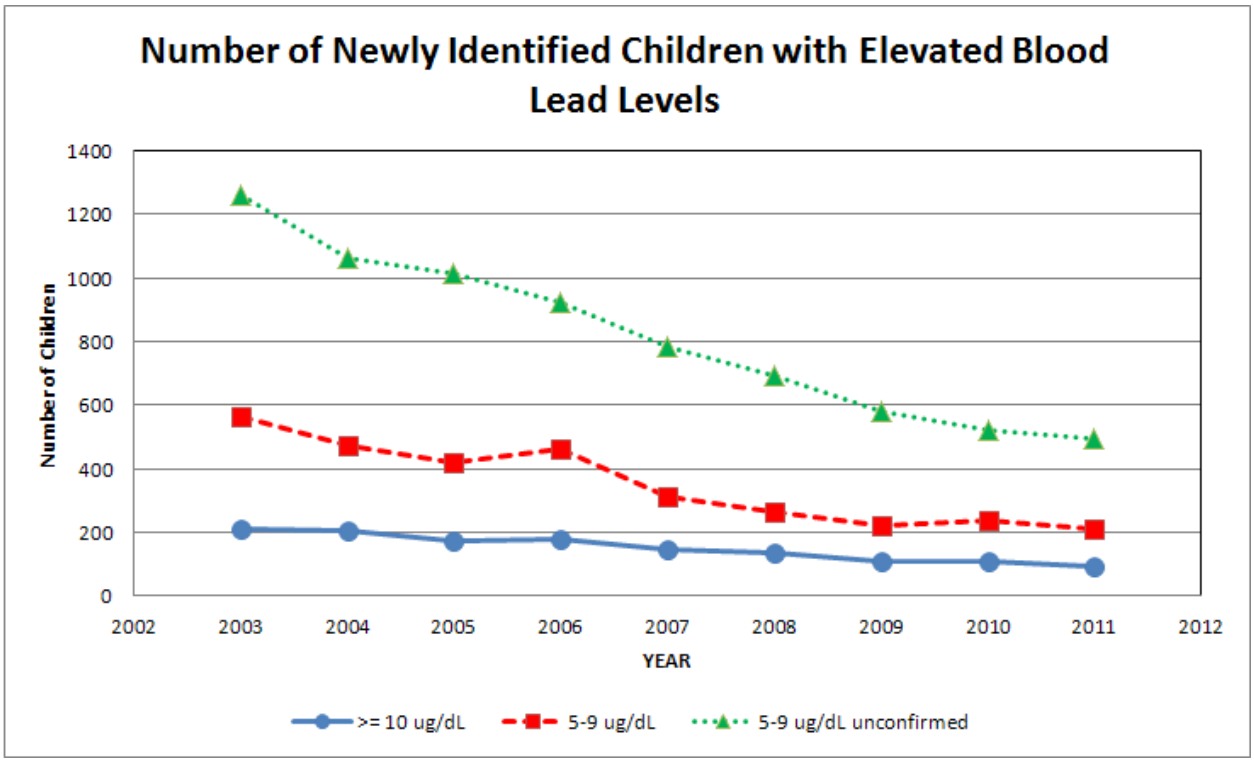

Figure A-1. Number of newly identified children under 6 years of age with a blood lead level of either ≥ 10 µg/dL or 5 – 9 µg/dL, by year for the period 2003 to 2011. Results are presented as confirmed and unconfirmed (the latter representing capillary samples that have not been confirmed with either a venous sample or repeat capillary within 30 days).

Lead Poisoning, Asthma, Cancer, and Developmental Disabilities." Environmental Health Perspectives 110(7): 721–728. http://dx.doi.org/10.1289/ehp.02110721

[14] Davis, Mary E. 2010. "Economic Assessment of Children's Health and the Environment in Maine." Maine Policy Review 19(1): 34-45. http://mcspolicycenter.umaine.edu/files/pdf_mpr/V19N1_DavisFIN.pdf