Department of Health and Human Services
Maine People Living Safe, Healthy and Productive Lives
Paul R. LePage, Governor
Mary C. Mayhew, Commissioner

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January 30, 2015

Senator Eric L. Brakey, Chair (R-Androscoggin)
Representative Drew Gattine, Chair (D-Westbrook)
Members, Joint Standing Committee on Health and Human Services
#100 State House Station
Augusta, ME 04333-0100

Dear Senator Brakey, Representative Gattine and Members of the Joint Standing Committee on Health and Human Services:

Resolve 2007, Chapter 186 of the 123rd Maine Legislature, Section 4, directed the Department of Health and Human Services, Maine Center for Disease Control and Prevention to report annually to the Joint Standing Committee on Health and Human Services. The report is to include information on the identification of areas of the State of high risk for childhood lead poisoning, progress made in achieving universal blood lead screening in designated high-risk areas and lessons learned in attempting to achieve universal blood lead testing.

The State Toxicologist and staff from the Maine CDC's Childhood Lead Poisoning Prevention Program have prepared the accompanying report in fulfillment of this Resolve.

Sincerely,

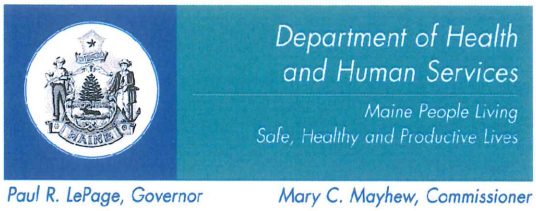
Mary Mayhew
Commissioner

MCM/klv

Enclosure

Department of Health and Human Services
Maine People Living Safe, Healthy and Productive Lives

Paul R. LePage, Governor Mary C. Mayhew, Commissioner



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

January 9, 2015

Prepared by

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Table of Contents

Summary 1

Introduction 4

Background on Blood Lead Screening 4

Changes to the Elevated Blood Lead Threshold 5

Identifying High-risk Areas for Childhood Lead Poisoning 6

Blood Lead Screening in High-Risk Areas 10

Efforts to Promote Blood Lead Screening 13

Maine CDC Statewide Efforts to Promote Screening 13

Local Efforts to Promote Screening in High-Risk Areas 14

Lessons Learned and Challenges 17

Recommendations 17

Summary

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 (Maine CDC) to report annually to the Joint Standing Committee on Health and Human Services on the following:

1) Identification of areas of the State at 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.

This document presents the fifth report to the Maine Legislature and includes updates on identifying high-risk areas for childhood lead poisoning, progress in promoting screening for blood lead in these high-risk areas, changes to the threshold for elevated blood lead levels in children and lessons learned and recommendations for screening.

Identifying High-Risk Areas for Childhood Lead Poisoning

In 2008, Maine CDC identified the communities of Lewiston-Auburn, Biddeford-Saco, Portland-Westbrook, Bangor and Sanford as high-risk areas for childhood lead poisoning. These communities were identified by comparing the percentage of young children screened who had a blood lead level of 10 micrograms lead per deciliter blood or higher (≥ 10 µg/dL) to the average for the remainder of the State (i.e., statewide, excluding the high-risk areas) over the years 2003-2007. Most of these high-risk areas had percentages that were two- to three-fold higher than the rest of the State.

Based on a similar analysis of blood lead screening data for the years 2009-2013, four of these five communities remain high-risk areas. In contrast, Sanford now has a lead poisoning percentage nearly identical to the rest of the State. All high-risk areas had decreases in the percentage of screened children with a blood lead level 10 µg/dL or higher for this more recent time period, ranging from a 29% drop in Lewiston-Auburn, to a 75% drop in Sanford. The rest of the State had a drop of 48% during this time period.

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

Universal Screening in High-Risk Areas

There has been substantial progress toward universal blood lead screening in most high-risk areas as follows, and as presented in the table below.

- In four of the five high-risk areas, 73% to 84% of children born in 2010 were screened for blood lead by 36 months of age.
- There has been a substantial increase in screening of both 1- and 2-year-old children in Lewiston-Auburn. Screening rates of 1-year-olds increased from 46% to 76% between 2011 and 2013; screening rates for 2-year-olds increased from 29% to 53% during this period.
- There have also been impressive increases in Biddeford-Saco.

Table: Annual Blood lead screening rates for 12- to 23-month-old and 24- to 35-month-old children for the five high-risk communities for the calendar year 2013, and ever screened by 36 months for the 2010 birth cohort.

Selected Area	Percent 12- to 23-month-olds screened[(a)]	Percent 24- to 35-month-olds screened[(a)]	Percent < 36-month-olds screened[(b)]
Bangor	63.8%	38.0%	79.3%
Biddeford/Saco	70.2%	58.5%	81.4%
Lewiston/Auburn	76.2%	52.9%	73.9%
Portland/Westbrook	46.6%	22.0%	57.9%
Sanford	63.9%	33.6%	84.3%
Rest of State[(c)]	52.5%	29.7%	64.9%

[(a)] Percent = number of children screened for blood lead divided by number of children born in that community for that age cohort.

[(b)] Computed for children born in 2010

[(c)] Statewide rates excluding the five high-risk areas

Lessons Learned

The substantial progress in blood lead screening for Lewiston-Auburn is due in large part to a robust effort by one pediatric office to use in-office testing for blood lead. Under Public Law 2011 Chapter 183, the Lead Poisoning Control Act was amended to allow health care providers to perform real-time blood lead testing in their offices. In-office testing addresses a known barrier to blood lead screening – the need for some patients to travel to an off-site location to have a blood specimen drawn and submitted for analysis. Since November 2012, six medical practices have requested and been granted approval for in-office testing, including one serving the Lewiston-Auburn high-risk area. In-office testing now accounts for more than 10% of annual blood lead screening. Increases in screening rates in Biddeford-Saco have occurred in

the absence of in-office testing, demonstrating that substantial progress can be made by other means.

Changes to the Elevated Blood Lead Threshold

The U.S. Centers for Disease Control and Prevention has changed its recommended threshold for an elevated blood lead level for children less than six years of age. Since 1990, an elevated blood lead has been defined as a level of 10 µg/dL or higher. The new level is 5 µg/dL or higher. This change in federal policy results from a 2012 recommendation by the national Advisory Committee on Childhood Lead Poisoning Prevention, and reflects a growing body of scientific studies concluding that blood lead levels less than 10 µg/dL can harm children. No safe level of lead exposure has yet to be identified.

Maine CDC has begun analyzing blood lead data using this new threshold of 5 µg/dL in order to establish surveillance and data analysis protocols and identify challenges associated with adopting the new threshold. The new threshold will complicate surveillance of blood lead levels – including the identification of high-risk areas. That is, until it becomes common medical practice to confirm blood screening results for lead levels down to 5 µg/dL (current guidance is to confirm all results ≥ 10 µg/dL), it will not be possible to provide a reliable estimate of the number or percentage of screened children with a confirmed blood lead level of 5 µg/dL or higher. In early 2015, Maine will issue new blood lead screening guidelines that will recommend confirmation of all blood lead test results of 5 µg/dL or higher.

The following points related to statewide blood lead levels are from 2013, the most recent year for which surveillance data are available.

- 79 children were newly identified as having a confirmed blood lead level of ≥10 µg/dL.
- 169 children were identified as having a confirmed blood lead level of 5-9 µg/dL.
- 549 children were identified as having an unconfirmed blood lead level of 5-9 µg/dL.

Recommendations

At this time, Maine CDC has no additional recommendations for attaining universal blood lead screening of children living in high-risk areas. Screening rates continue to improve in most high-risk areas and are near or have surpassed achieving 80% of children tested at least once by 36 months of age.

Introduction

The 123rd Maine Legislature enacted Public Law Chapter 186, a Resolve "To Achieve Universal Blood Lead Level Screening in Maine Children."[2] It directed the Department of Health and Human Services, Maine Center for Disease Control and Prevention (Maine CDC) to report annually to the Joint Standing Committee on Health and Human Services on the following:

1) Identification of areas of the State at 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.

This document presents the fifth report to the Maine Legislature and includes updates on identifying high-risk areas for childhood lead poisoning, progress in promoting screening for blood lead in these high-risk areas, changes to the threshold for elevated blood lead levels in children, and lessons learned and recommendations for screening.

Background on Blood Lead Screening

Screening for blood lead identifies children who have elevated blood lead levels, and it identifies housing that may contain environmental lead hazards. An elevated blood lead level triggers public health and health-care services to: assess and reduce harm to the child, identify others that may be at risk from the same environmental lead hazards and identify and mitigate the source of lead exposure.[3] Lead containing dust due to lack of maintenance of lead paint surfaces or due to wear and tear on lead painted surfaces like windows, doors and floors, is the most common cause of childhood lead poisoning in Maine.

Screening for blood lead involves collecting a blood specimen either by a venous draw (i.e., a blood sample taken directly from a vein) or a capillary draw (i.e., a blood sample obtained by a finger prick). Because of the potential for external skin contamination with a capillary draw, elevated capillary test results are usually confirmed with a venous draw. These blood specimens are shipped to the Maine CDC's Health and Environmental Testing Laboratory for analysis. Because of recent changes in State law, lead analyses can now be performed in the office of health care providers, using technology for an in-office blood lead determination (Public Law

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

[3] 22 MRSA §1320-1322

2011 Chapter 183). The objective of in-office testing is to increase screening rates by removing barriers (e.g., transportation, scheduling, loss to follow-up, etc.) associated with having to refer patients to an off-site laboratory to obtain a blood specimen.

Current State law requires that children covered by MaineCare be tested for blood lead at 1 and 2 years of age (22 MRSA §1317-D). 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). These age-specific recommendations are based on the increased risk of lead exposure from crawling and hand-to-mouth behavior. There are no requirements for testing children 3 years and older.

Changes to the Elevated Blood Lead Threshold

Until recently, an elevated blood lead level was defined as a level of 10 micrograms of lead per deciliter of blood or higher (≥10 µg/dL). In 2012, the U.S. Centers for Disease Control and Prevention lowered its recommended threshold for an elevated blood lead level to 5 µg/dL. This change in federal policy results from a 2012 recommendation from the national Advisory Committee on Childhood Lead Poisoning Prevention.[4] The committee's recommendation is based on the weight of evidence that includes studies of large and diverse groups of children with low blood lead levels and associated IQ deficits. Effects at blood lead levels less than 10 µg/dL are also reported for other behavioral domains, particularly attention-related behaviors and academic achievement. To date, no safe level of lead exposure has been identified.

Maine CDC has begun analyzing blood lead data using this new threshold of 5 µg/dL in order to establish surveillance and data analysis protocols, and identify challenges associated with adopting the new threshold. This new threshold complicates surveillance of blood lead levels – including identification of high-risk areas. Maine CDC currently recommends that all capillary blood lead test results of 10 µg/dL and higher be confirmed with a venous draw. Consequently, Maine CDC can reliably estimate the number and percentage of screened children with a *confirmed* blood lead level of 10 µg/dL and higher. Until it becomes common medical practice to confirm all blood lead screening results 5-9 µg/dL as well, it will not be possible to provide a reliable estimate of children with a *confirmed* blood lead level of 5 µg/dL or above. In early 2015, Maine CDC will begin to recommend all blood lead capillary test results of 5 µg/dL and above be confirmed with a venous draw. Until this new recommendation takes effect, separate surveillance estimates will be prepared for confirmed (venous) and unconfirmed (capillary) blood lead results in the 5-9 µg/dL range, due to the large number of children with unconfirmed blood lead levels of 5-9 µg/dL. In this legislative report, the following surveillance measures will be reported:

[4] http://www.cdc.gov/nceh/lead/acclpp/blood_lead_levels.htm

- the number and percentage of children with a *confirmed* blood lead level of 10 µg/dL and above (≥ 10 µg/dL);
- the number and percentage of children with a *confirmed* blood lead level between 5 and 9 µg/dL (5-9 µg/dL); and,
- the number and percentage of children with an *unconfirmed* blood lead level between 5 and 9 µg/dL (5-9 µg/dL).

Identifying High-risk Areas for Childhood Lead Poisoning

Maine CDC has recently updated mapping of high-risk areas for childhood lead poisoning. Prior efforts mapped the number of children with blood lead levels ≥ 10 µg/dL by town for the time period of 2003 through 2007 as the baseline. These maps were used to identify communities of the State that had a high number of cases of newly-identified children with blood lead levels ≥ 10 µg/dL. This mapping effort identified five communities that collectively represented about 40% of all identified cases of Maine children with a blood lead level ≥ 10 µg/dL. These five communities were Bangor, Biddeford-Saco, Lewiston-Auburn, Portland-Westbrook and Sanford.

In the most recent mapping analyses (Figure 1), this procedure has been updated using data collected between 2009 and 2013. There were 909 newly identified children with a blood lead level of ≥ 10 µg/dL during the years 2003-2007, and they were found in 217 towns. For the years 2009-2013, there were 467 newly identified children with a blood lead level ≥ 10 µg/dL found in 138 towns. Thus, there has been a substantial decrease in both numbers of new cases of children with a blood lead level of ≥ 10 µg/dL and the number of towns where a case was reported. Figure 1 presents a comparison of the number of children with a confirmed blood lead level of ≥ 10 µg/dL (Figure 1a), with the numbers of children with confirmed (Figure 1b) and unconfirmed (Figure 1c) blood lead levels of 5-9 µg/dL. The same five high-risk areas remain apparent in all maps; however, based on blood lead levels of 5-9 µg/dL, several other communities with higher numbers become apparent (e.g., the corridor that includes Waterville, Fairfield, Skowhegan and Madison). These additional communities have previously been identified by Maine CDC as second-tier high-risk areas and have received focused funding to promote blood lead screening and lead poisoning awareness.

Figure 1: Comparison of numbers of screened children with confirmed blood lead levels > 10 µg/dL, confirmed blood lead level 5-9 µg/dL or above, and unconfirmed blood lead level 5-9 µg/dL or above, by town, for the years 2009-2013.

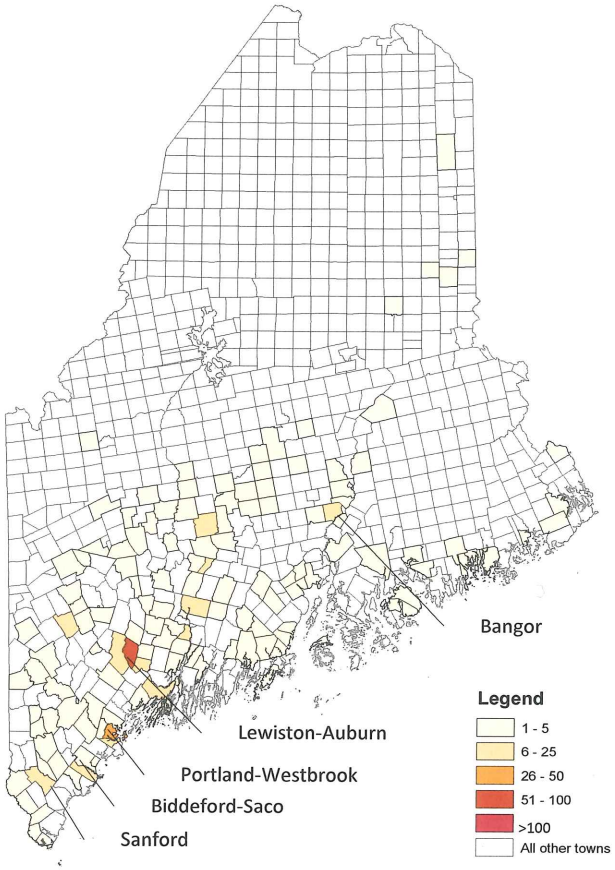


Figure 1a: Number of screened children with a confirmed blood lead level ≥ 10 µg/dL by town for the years 2009-2013.

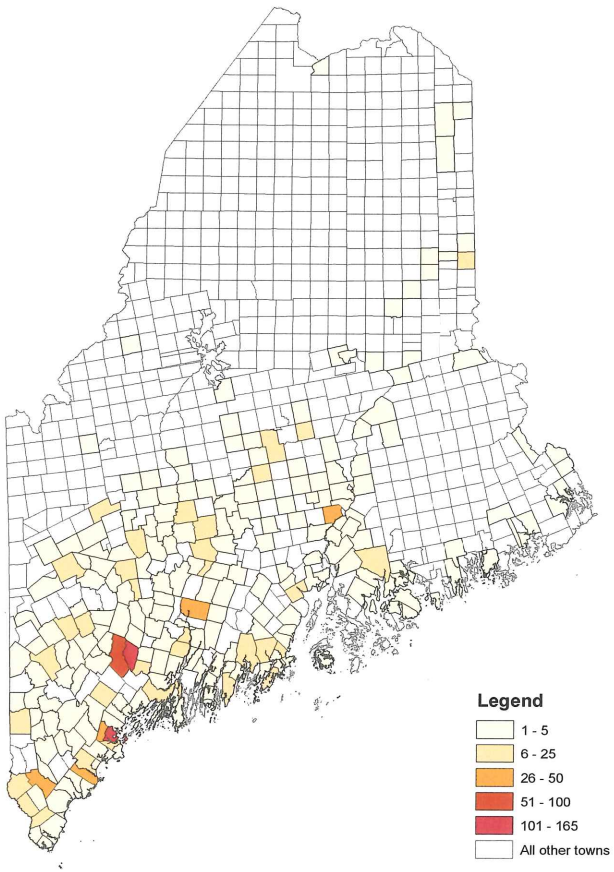


Figure 1b: Number of screened children with a confirmed blood lead level 5-9 µg/dL or above by town for the years 2009-2013.

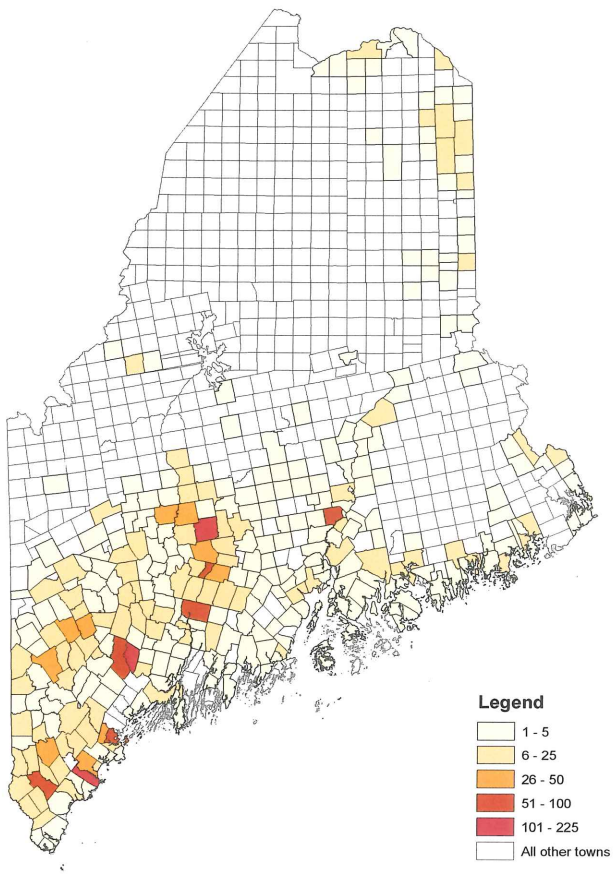
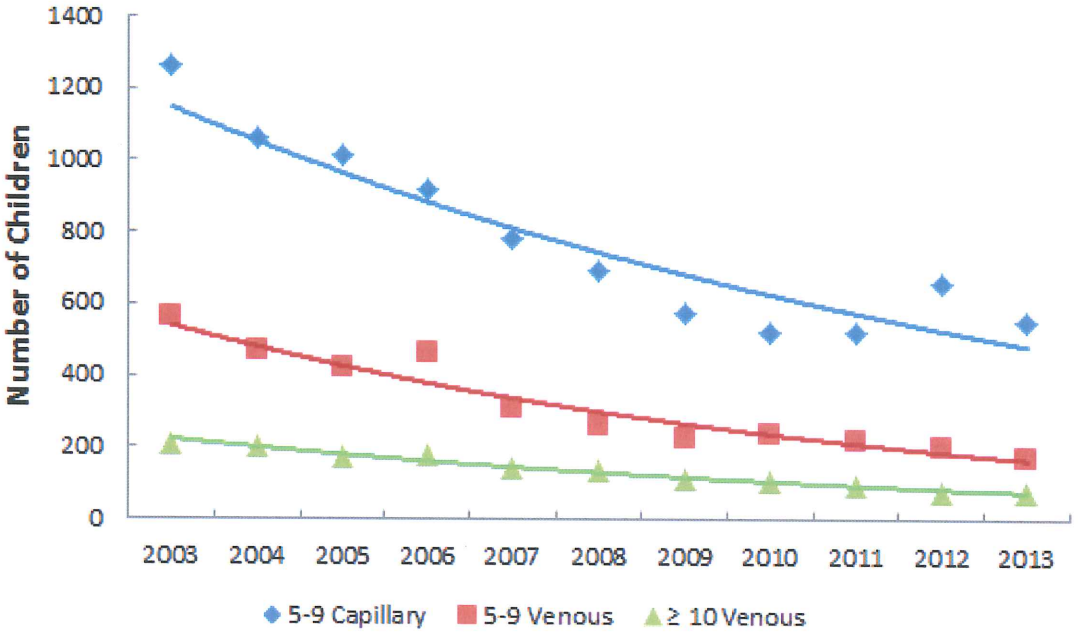


Figure 1c: Number of screened children with an unconfirmed blood lead level 5-9 µg/dL or above by town for the years 2009-2013.

In the year 2013, the most recent year of surveillance data, there were 79 newly-identified children statewide with a confirmed blood lead level ≥ 10 µg/dL. There were an additional 169 newly identified children with a confirmed blood lead level 5-9 µg/dL, and another 549 children with an unconfirmed blood lead level 5-9 µg/dL (Figure 2).[5] The trends indicate that it takes six to ten years for the number of children at each of these blood lead levels to decrease by half. While progress is clearly being made, we have yet to achieve the statutory goal of eradicating lead poisoning among Maine children (22 MRSA §1314-A).[6]

Figure 2. Trends in the number of newly identified children with a confirmed (venous) blood lead level ≥ 10 µg/dL, a confirmed (venous) blood lead level 5-9 µg/dL, or a unconfirmed (capillary) blood lead level 5-9 µg/dL.



Higher counts of children with elevated blood lead levels are to be expected for towns with higher populations. To determine whether these five communities are indeed high-risk areas, Maine CDC computes a measure that is comparable across different population sizes: the percentage of screened children with a confirmed blood lead level ≥ 10 µg/dL. This measure is

[5] A preliminary analysis conducted by Maine CDC suggests that approximately 70% of children with unconfirmed blood lead levels 5-9 µg/dL will have a confirmed (venous) blood lead level 5-9 µg/dL. The assumption of 70% is an estimate based on a small data set of 29 capillary test results 5-9 µg/dL that were confirmed with a venous draw; 73% of these 29 capillary test results were found to have a venous test result of 5 ug/dL or higher.

[6] http://legislature.maine.gov/legis/statutes/22/title22sec1314-A.html

computed by dividing the number of children with a blood lead level of ≥ 10 µg/dL by the total number of children screened for blood lead in a particular community and a specific age group. Using this measure, we previously determined that the percentage of screened children with a blood lead level ≥ 10 µg/dL was significantly higher in these five communities as compared with the rate for the rest of Maine (i.e., statewide excluding these five communities). Thus, these five communities were designated as high risk.

Table 1 presents updated estimates of the percentage of screened children who had a blood lead level ≥ 10 µg/dL for the 2009-2013 time period, as compared to our baseline years of 2003-2007. Sanford no longer appears to be a high-risk area based on its percentage; its percentage of screened children with a blood lead level ≥ 10 µg/dL is essentially the same as the rest of the State. Bangor is approaching this point; its percentage is higher, but no longer statistically different than the rest of State (0.88% vs 0.54%, p=0.06).[7] Lewiston-Auburn has seen the smallest drop in percentage of screened children with a blood lead level ≥ 10 µg/dL, and its percentage is nearly four-fold higher than the rest of the State. The communities of Lewiston-Auburn, Biddeford-Saco and Portland-Westbrook remain high-risk areas for lead poisoning. Maine CDC is continuing to designate Bangor as a high-risk area due to its higher percentage relative to the rest of the State, despite the fact that it cannot be viewed as different from the rest of the State with a high degree of statistical confidence.

Table 1. High-risk communities based on percentage of newly identified children under 6 years of age with a blood lead level (BLL) ≥ 10 µg/dL relative to the number of children screened.

Selected Area	2003-2007		2009-2013	
	Number of Children with BLL ≥ 10 µg/dL (5 year total)	Percent[(a)]	Number of Children with BLL ≥ 10 µg/dL (5 year total)	Percent[(a)]
Bangor	40	1.90%	21	0.88%
Biddeford/Saco	44	1.98%	25	0.97%
Lewiston/Auburn	119	2.86%	97	2.02%
Portland/Westbrook	110	2.14%	43	0.92%
Sanford	34	2.04%	8	0.51%
Rest of State[(b)]	563	1.04%	273	0.54%

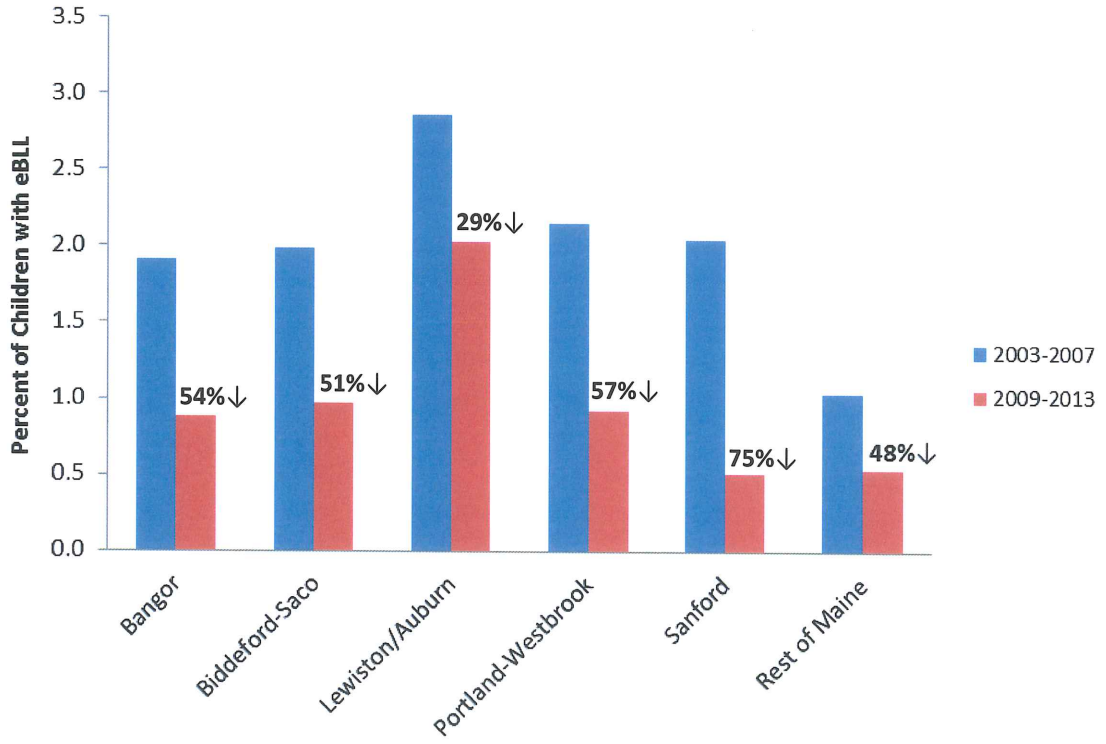
[(a)] Percent = number of children with BLL ≥ 10 µg/dL divided by number screened

[(b)] Statewide rates excluding the five high-risk areas

[7] It is common practice to use a statistical probability value (p-value) of less than or equal to 0.05 as a threshold of statistical significance (i.e., no more than a 5% probability that the observed result could occur by chance alone).

Figure 3 shows the relative change in percentage of children with a blood lead level ≥ 10 µg/dL for each of the high-risk areas for the two five-year time periods. These two time periods correspond to before and after the launch of primary prevention efforts in the high-risk areas. Four of the five high-risk areas had larger drops in the percentage of children with a blood lead level ≥ 10 µg/dL than seen for the rest of the State.

Figure 3. Changes in percent of children with a blood lead level ≥ 10 µg/dL for the five high-risk areas for childhood lead poisoning for the five-year periods before and after prevention initiatives were launched. "Rest of Maine" refers to the remainder of the state excluding the high-risk areas.



Blood Lead Screening in 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 12 to 24 months of age, and children 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 does not require universal screening in any specific area, but does require screening according to health insurance status. Maine law requires blood lead screening for 1- 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). Maine CDC consequently tracks screening rates for 1-year-olds (12-23 months) and 2-year-olds (24- 35 months), as well as whether a child is likely to have had at least one lead test by 36 months of age.[8]

Maine CDC tracks screening of children for blood lead by computing the percentage of children screened for blood lead relative to the number of children living in a given area (e.g., the state, county, town) for a particular age group. This approach makes use of the number of reported tests 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 of a particular age group and town. Since U.S. Census counts are only available every ten years, and intercensal estimates at the town level for a specific age group have proven difficult to reliably obtain, Maine CDC recently began using births as estimates for the population of 1- and 2-year-olds at the town level.[9] Because of this change, screening rates reported in this legislative report cannot be directly compared with prior reports.

Table 2 presents the percentage of children living in the high-risk areas that have received a blood lead test at age 12 to 23 months, at age 24 to 35 months, or at least one screening test by 36 months of age. With the exception of Portland-Westbrook, all high-risk areas have screening rates that are above rates for the rest of the State. Screening rates for children 24 to 35 months are generally increasing, but are lower than screening rates of 1-year-olds. For three of the high-risk areas, 79% or more of children have received at least one lead test by age 36 months. This analysis is based on children born in 2010. We expect that Lewiston-Auburn has attained this milestone for children born in 2011 and later (based on recent increased screening rates for 1- and 2-year-olds), though it will take one or more years of follow up to confirm.

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[8] These measures along with others are available on the Maine Tracking Network: https://data.mainepublichealth.gov/tracking/

[9] Actual Census counts at the town level are only available every 10 years. Intercensal estimates are uncertain and in the past have been difficult to obtain. Annual birth counts are always available, but also have uncertainty as a proxy for 1-year-olds and 2-year-olds due to emigration. Maine CDC now uses births as the most readily available and reliable denominator for computing estimates.

Table 2. Annual blood lead screening rates for 12- to 23-month-old and 24- to 35-month-old children for five high-risk communities for the calendar year 2013, and ever screened by 36 months for the 2010 birth cohort.

Selected Area	Percent 12- to 23-month-olds screened[(a)]	Percent 24- to 35-month-olds screened[(a)]	Percent < 36-month-olds screened[(b)]
Bangor	63.8%	38.0%	79.3%
Biddeford/Saco	70.2%	58.5%	81.4%
Lewiston/Auburn	76.2%	52.9%	73.9%
Portland/Westbrook	46.6%	22.0%	57.9%
Sanford	63.9%	33.6%	84.3%
Rest of State[(c)]	52.5%	29.7%	64.9%

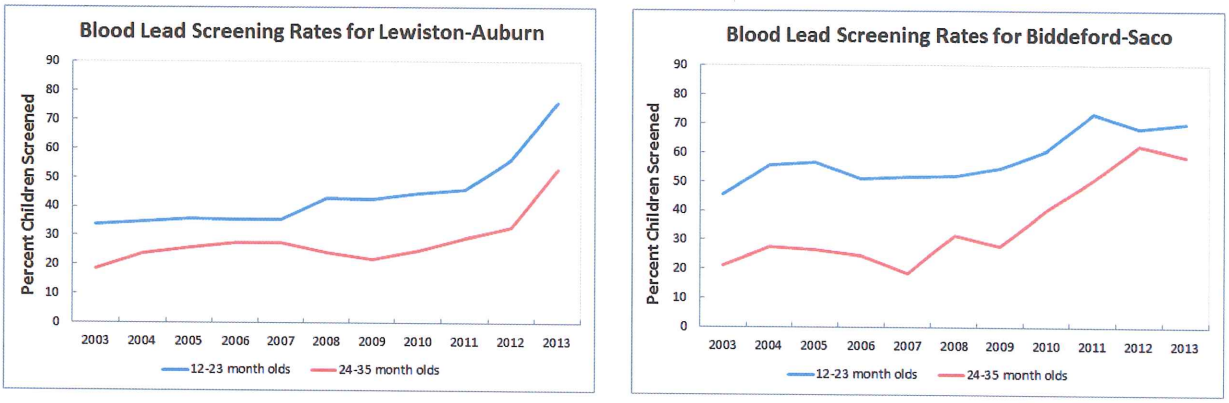
[(a)] Percent = number of children screened for blood lead divided by number of children born in that community for that age cohort

[(b)] Computed for children born in 2010

[(c)] Statewide rates excluding the five high-risk areas

Lewiston-Auburn and Biddeford-Saco have had noteworthy increases in screening rates in recent years (Figure 4). The timing of the increase for Lewiston-Auburn coincides with the introduction of in-office testing by a major pediatric provider and a strong effort by this practice and others to increase screening rates for their high-risk community. In contrast, the increase in screening rates for Biddeford-Saco between 2009 and 2012 was not associated with the introduction of in-office testing, but nonetheless represents a concerted effort by local health care providers.

Figure 4. Trends in blood lead screening of 1- and 2-year-olds for Lewiston-Auburn and Biddeford-Saco for the years 2003 to 2013.



Efforts to Promote Blood Lead Screening

Blood lead screening is being promoted by continued statewide outreach aimed at increasing awareness of the importance of blood lead screening, and is augmented by local efforts in the high-risk communities. These initiatives are largely made possible by the Lead Poisoning Prevention Fund, established by the Legislature in 2005 (22 MRSA §1322-E).[10] Additionally, health care providers can now conduct in-office analysis of blood lead, which is intended to reduce barriers to blood lead testing. Each of these efforts is briefly discussed below.

Maine CDC Statewide Efforts to Promote Screening

Maine CDC conducts an annual, statewide, targeted mailing to all families with children between the ages of 12 and 23 months 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.[11] Approximately 12,000 brochures were sent out statewide in October 2014 to all Maine families with 1-year-old children as identified through the Maine Birth Certificate Registry.

Under Public Law 2011 Chapter 183, the Lead Poisoning Control Act was amended to allow health care facilities to perform blood lead testing in their offices. Prior to this legislation, by law, all blood lead specimens were required to be submitted to the Maine CDC's Health and Environmental Testing Laboratory for analysis. In-office testing is intended to address a known barrier to blood lead screening – the need for some patients to travel to an off-site location to have a blood specimen drawn and submitted to for lead analysis. In-office testing makes use of a portable instrument that provides near real-time measurement of lead levels in a capillary blood specimen. The child and their guardians learn the result of the blood lead test during

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[10] The Lead Poisoning Prevention Fund is a non-lapsing 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.

[11] The brochure is available for viewing online: http://www.maine.gov/dhhs/mecdc/environmental-health/eohp/lead/documents/leadmailerweb.pdf

their visit. If elevated, a confirmatory blood lead specimen (i.e., a venous specimen) can be collected at that visit or a referral can be made to a laboratory capable of obtaining a venous draw from a young child.

Public Law 2011 Chapter 183 authorized Maine CDC to approve testing for blood lead level by a health care provider, health care facility, WIC clinic or Head Start facility, as long as the facility can perform in-office blood lead analyses for purposes of improving blood lead screening and the facility has demonstrated the ability to electronically submit all blood lead testing results and associated information to Maine CDC. In 2012, Maine CDC promulgated the required rules establishing an approval process for in-office testing. To date, six medical practices have requested and been granted approval for in-office testing, including one serving the Lewiston-Auburn high-risk area. In-office testing now accounts for more than 10% of all blood lead screening tests performed annually; more than 1,000 in-office blood lead tests were performed in 2013.

Local Efforts to Promote Screening in High-Risk Areas

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, support landlord and tenant education and outreach and promote blood lead screening. Approximately $30,000 or more 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:

Targeted YouTube Video PSA: The Healthy Maine Partnership in Portland developed a 15-second YouTube video public service announcement (PSA) that has been available since late 2012.[12] The PSA addresses the dangers of lead dust and encourages parents to find out more about preventing childhood lead poisoning. In total, there have been more than 17,000 views of the PSA which was geo-targeted to a 20-mile radius around the high-risk areas of Portland, South Portland and Westbrook. Within this geographic area, the PSA was targeted to women between the ages of 25-45 with an interest in children and families.

Outreach through WIC Clinics: In Bangor, Sanford and Biddeford-Saco, community partners have developed relationships with local clinics of the Women Infants and Children Nutrition Program (WIC). Clinic staff have been distributing informational

[12] The PSA may be viewed on YouTube: http://youtu.be/UJsPP4pSzKU

packets or displaying posters with lead poisoning prevention and blood lead screening information with tear-off sheets for more information. In Bangor, a poster (see Figure 5 below) is displayed in a central waiting room that serves people waiting for appointments in the WIC and Childhood Immunization programs, as well as the General Assistance Office. Additional posters are found in WIC-only waiting rooms. In Biddeford-Saco and Sanford, WIC participants receive packets of information with tipsheets promoting blood lead screening. Partners in Lewiston-Auburn will begin working with WIC sites in 2015. Working with WIC clinics is one specific outlet for promoting lead poisoning prevention and screening and is similar to outreach efforts Healthy Maine Partnerships conduct at other locations such as laundromats, childcare centers and YMCAs.

Targeted outreach to minorities/ethnic groups: The Healthy Maine Partnerships in Portland and Lewiston-Auburn are 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 visual materials. In Lewiston-Auburn, the Healthy Maine Partnership has collaborated with the City of Lewiston and the Neighborhood Housing League for the past two years to distribute a DVD with lead poisoning prevention and screening information hundreds of residences in downtown Lewiston near 82 residential building demolition sites. The DVD used in this door-to-door campaign provides information in English, Spanish, and Somali to meet the needs of the residents, many of whom are English language learners. Lewiston-Auburn is also continuing their "Neighbor to Neighbor" outreach program. In the Neighbor to Neighbor program, Somali and Somali Bantu women receive training about lead poisoning prevention and the importance of screening, either directly or through a train-the-trainer model. The women who are trained then do outreach to their friends and neighbors in their community.

Figure 5: Screen shots from the 15 second lead poisoning prevention PSA developed for the high-risk areas in and around Portland.

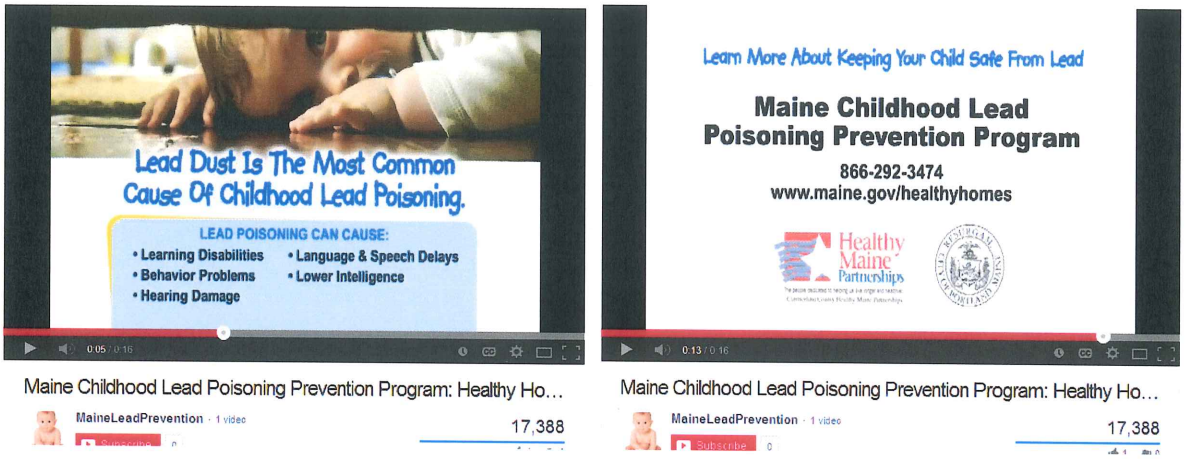
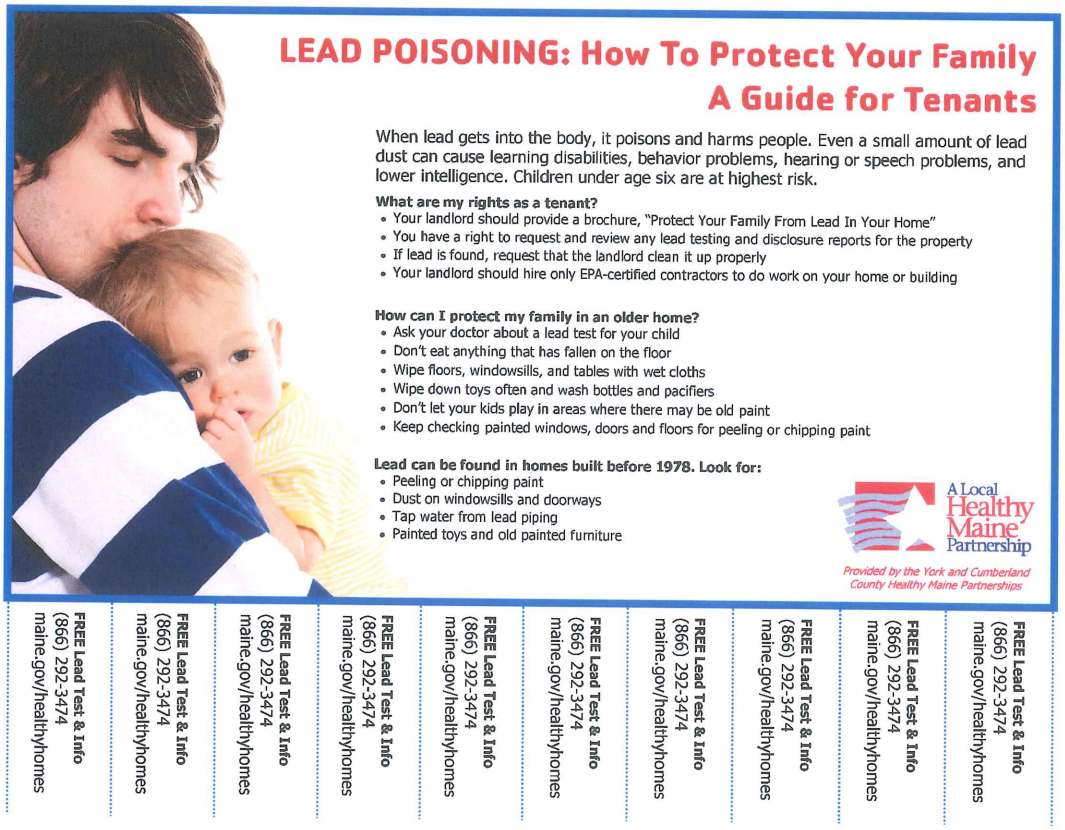


Figure 6: WIC poster with tear-off contact information



Lessons Learned and Challenges

Lessons learned: The substantial progress in blood lead screening for Lewiston-Auburn is believed to be due to the use of in-office testing and a robust effort by a pediatric office to use this new technology, along with sustained effort by other providers and the Healthy Maine Partnership serving this area. Similar progress on blood lead screening in Biddeford-Saco in the absence of in-office testing indicates that this new technology is not necessary to improve screening rates. Nonetheless, in-office testing has clearly been a catalyst for progress in Lewiston-Auburn.

Challenges: As Maine CDC has yet to develop a means to support electronic submission of in-office test results, the more than 1,000 test results now submitted annually must be hand entered into an electronic database. Maine CDC is monitoring the growth of in-office testing to determine whether the volume of submitted results warrants the significant investment to develop an informatics system that will support electronic submission of in-office test results to eliminate the need for hand entry.

The new federal blood lead reference level of 5 µg/dL used for identifying an elevated blood lead level will complicate surveillance of blood lead levels, including the identification of high-risk areas, for another year or two. Until it becomes common medical practice to confirm all blood lead screening results 5- 9 µg/dL, it will not be possible to provide a reliable estimate of children with a *confirmed* blood lead level of 5 µg/dL or above. Maine CDC expects to issue revised screening guidelines in February 2015 that will recommend all capillary test results of 5 µg/dL and higher be confirmed with a venous draw.

Recommendations

At this time, Maine CDC has no additional recommendations for attaining universal blood lead screening of children living in high-risk areas. Screening rates continue to improve in most high-risk areas, and are near, or have surpassed, achieving 80% of children tested at least once by 36 months of age. Maine CDC is continuing to support local partners in their efforts to promote awareness of lead paint hazards and the importance of blood lead screening with resources from the Lead Poisoning Prevention Fund. We will continue to promote blood lead screening statewide through a mailing to all Maine families with a 1-year-old child. Maine CDC also will continue supporting health care providers who want to perform in-office blood lead analyses.