

Strategic Plan for the Elimination of

Childhood Lead Poisoning

*In Maine
2010 Update*

Childhood Lead Poisoning Prevention Program

Environmental and Occupational Health Programs

Maine CDC

Maine Department of Human Services

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A. Introduction.....	3
B. Background on Lead Poisoning	4
Childhood blood lead screening rates	4
Elevated Blood Lead Levels	7
Characteristics of Environmental Inspections	9
Assessment of Risk Factors for Lead Poisoning Among Children Tested for Blood Lead Levels	13
Background on Occupational Blood Lead Poisonings	15
C. Existing state infrastructure	19
Lead Poisoning Prevention Fund	20
Childhood Lead Poisoning Prevention Program	25
Lead Hazard Prevention Program (DEP)	27
Lead Hazard Control Programs (Maine State Housing Authority, City of Portland, Cities of Lewiston/Auburn)	28
Occupational Disease Reporting System	30
Other State Partners	30
D. Comprehensive Goals, Objectives and Activities Models	32
Primary Prevention (Activities associated with preventing children from becoming poisoned).....	34
Secondary Prevention (Activities associated with identifying lead poisoned children and mitigating the hazards which have poisoned them).....	39
Surveillance (Evaluation and interpretation of data on childhood lead poisonings)	42
E. Childhood Lead Poisoning Prevention Program Work Plan.....	43
Program Management Activities.....	44
Screening Plan.....	47
Surveillance Plan.....	49
Strategic Partnerships Plan	51
Primary Prevention Plan.....	54
Case Management Plan	56
New Mainers Lead Poisoning Prevention Plan	59
Healthy Homes Transition Plan	61
F. Conclusions	62
Background on lead poisoning in Maine	62
Existing state infrastructure	63
Comprehensive Goals, Objectives and Activities.....	63
Childhood Lead Poisoning Prevention Program Work Plan	64
APPENDICES:.....	64

A. Introduction

In its 2003 program announcement, CDC issued a requirement that each state and jurisdiction-funded Childhood Lead Poisoning Prevention Program design a strategic plan for the elimination of childhood lead poisoning by the year 2010. In response the Maine Childhood Lead Poisoning Prevention Program (MCLPPP) convened an advisory group of committed stakeholders (LEAd-ME) and completed the elimination plan in 2004. The elimination plan helped identify priorities and directions for the coming years. It was this first elimination plan, in part, which helped provide the impetus to develop and pass the legislation creating the Lead Poisoning Prevention Fund, a 25 cent fee per gallon on paint sold in the state that is directed to lead poisoning prevention activities. The establishment of this fund resulted in a significant shift in resources and capabilities for lead poisoning prevention in the state. In recognition of that change, the advisory council reconvened with some new members in the fall of 2009 to re-evaluate the elimination plan and modify it based on the new realities within the state.

The LEAd-ME Advisory Council met from September of 2009 to July of 2010 to evaluate and discuss activities associated with lead poisoning prevention and intervention and to translate those actions into an elimination plan. As is often the case, the process was as, or more valuable than the final document. The LEAd-ME meetings provided a forum for parties associated with lead poisoning prevention goals within the state to meet, network, educate each other on our activities and plan further collaboration. This process identified gaps in intervention where increased collaboration could further the groups goals. The MCLPPP is grateful to the members of the LEAd-ME Advisory Council for their ideas, commitment, enthusiasm, patience and passion over the past year as we developed an updated elimination plan.

The following elimination plan is organized into four parts. It begins with background on what lead poisoning (predominantly child, but also adult) currently looks like in the state. It identifies the rates of lead poisoning, how is it distributed across the state, and how individuals are being screened for lead poisoning. The second part of the report discusses the major players within the state who are working to prevent and manage lead poisoning in Maine. This section is followed with an “activities plan” which at an upper level, lays out the activities of these various groups and how they relate and interact. This process helps identify gaps and coordinate activities. Finally, narrowing focus into MCLPPP, the final section describes a logic model specifying the activities for the MCLPPP which will act as a workplan for the coming years.

B. Background on Lead Poisoning

The first step in determining the key strategies and resources necessary to achieve the elimination of childhood and adult lead poisoning is to define the existing problem in Maine. We are fortunate in that significant data clean up and evaluation of childhood blood lead data has occurred over the last several years. Data sources available for this analysis includes: blood lead screening rates and elevated blood lead levels for 2003 through 2007, data from Environmental Inspections on housing of lead poisoned children, and a small survey of parents whose children had received a blood lead test.. Additionally, an existing Occupational Disease Reporting System captures data on adult lead poisoning within the state.

Childhood blood lead screening rates

Testing children's blood for lead is the traditional biomonitoring method to determine rates of lead poisonings. , These screening rates provide the data that are used to evaluate progress toward the goal of eliminating childhood lead poisoning. Random national blood lead data from the National Health and Nutrition Examination Survey (NHANES) III suggests that one and two year old children are at the most vulnerable ages for lead poisoning. For that reason, the general recommendation from the National CDC to their state programs has been to test 1 and 2 year olds if they are at risk. Risk is determined by a "Lead risk assessment questionnaire" a screen used by medical professionals to determine the applicability of blood lead testing.

Lead risk assessment questionnaire

1. Does your child spend more than 10 hours per week, in any house built before 1950?
2. Does your child spend more than 10 hours per week in any house built before 1978 that was renovated or remodeled within the last 6 months?
3. Does your child spend time with an adult whose job exposes him or her to lead? (Examples: painting, construction, metal workers including metal recyclers)
4. Is your child enrolled in MaineCare?

If a child's parent answered "yes," or "does not know", to one or more of these questions, the child should be given a [blood lead test](#).

Currently, there is very little evaluation or formative research on how this risk assessment questionnaire is being used in the state.

Because lower income levels are a risk factor for lead poisoning, Maine and Federal laws currently require that all children enrolled in MaineCare have a blood lead test at 1 year of age and at 2 years of age. Maine law also requires that children who are not enrolled in MaineCare should have a blood lead test at ages 1 and 2 unless a health care provider determines it is not needed. Since 2003, the percent of 1 year olds who have had a screening blood lead test has remained stable at 50%. Similarly, screening rates for 2 year olds has remained stable at 25% (Figure 1). If the screening rate is defined as children having at least one blood test before the age of 3, the rate is much higher – 67% statewide.

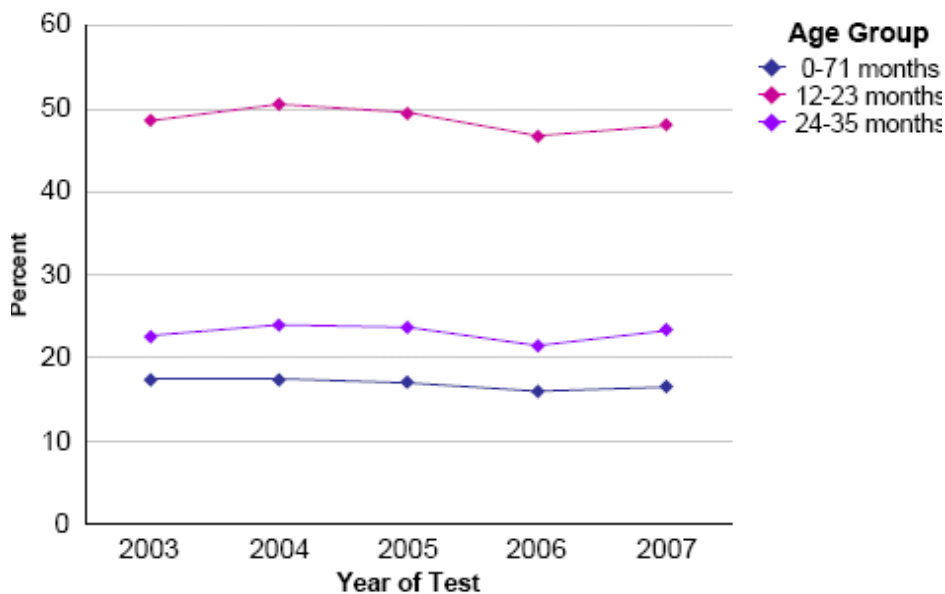


Figure 1: Statewide Blood Lead Screening Rates by Age Group

As might be expected, the screening rates also vary geographically. Figure 2 shows the rates of blood lead screening by public health district for the dates 2003-2007 for the age group of 12-23 months (as an example)¹.

¹ Public health districts act as Maine’s public health infrastructure. See <http://www.maine.gov/dhhs/boh/olph/lphd/index.shtml> for more information.

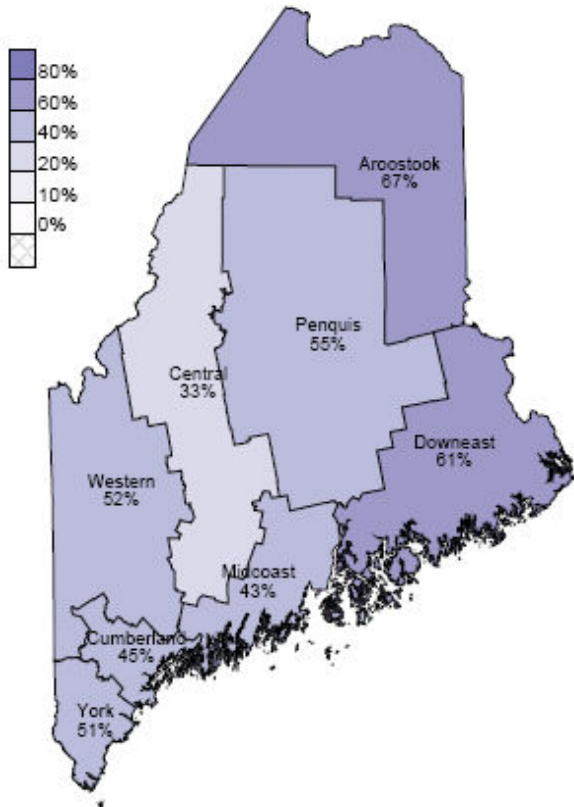


Figure 2: Blood Lead Screening Rates by Public Health District for children under 3

The data shows that there are certain regions (such as Aroostook County) that have relatively high rates of screening (above the state average of 48.7%) vs. other regions (such as the Central District) which fall below the state average. At this point, it is unclear why there are these differences in screening rates. Some factors to evaluate may include different percentages on MaineCare or differing risk factors as defined by the risk assessment questionnaire, or, most likely, an interaction between these factors. For example, figure 3 shows the percent of pre-1950 housing by public health district.

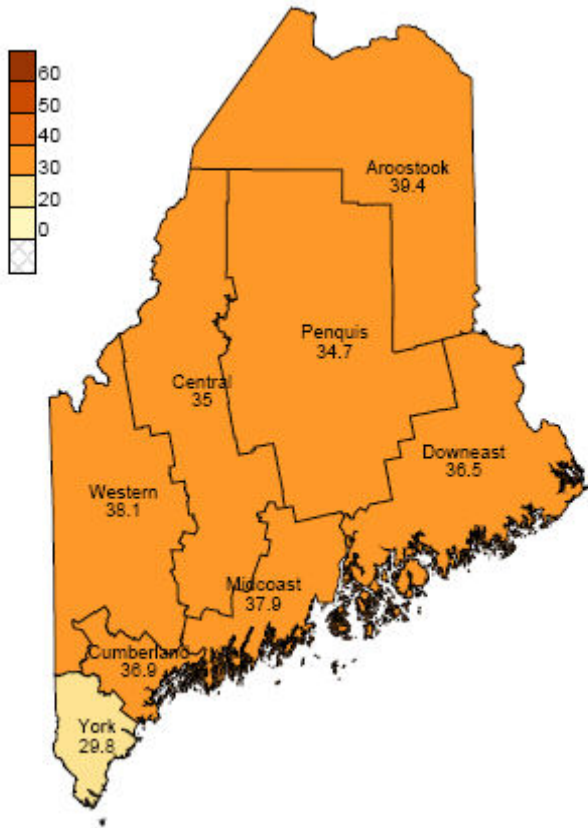


Figure 3 Percent of pre-1950 housing by Public Health District as of the 2000 census.

Elevated Blood Lead Levels

There is no “safe” level of lead in blood for children. Currently, a blood lead level of 10 ug/dl and above is considered an Elevated Blood Lead Level (EBLL) for children and triggers public health action by CDC. Although we recognize that BLLs above 0 could be unsafe, at blood lead levels <10, studies have found that interventions are not likely to be successful in lowering blood lead levels.

While the blood lead screening rates have been stable, the number of children with elevated blood lead levels has steadily declined. Figure 4 shows the total number of newly identified children with an EBLL.

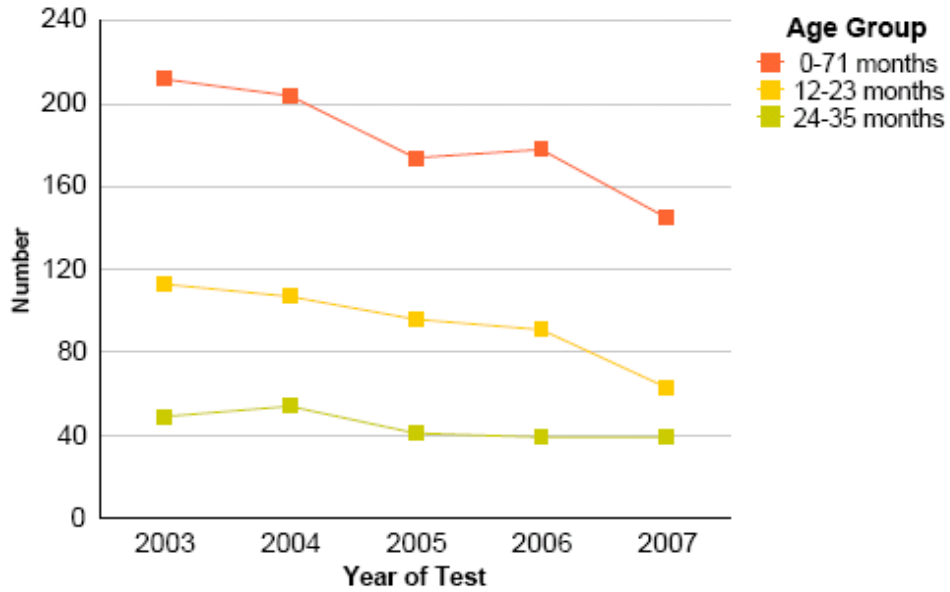


Figure 4: The number, for various age groups of newly identified children with an EBLL

Additionally, this decrease in newly identified children is also seen when looking at the percent of children screened – suggesting that the decrease is not a function of changes in screening rates (Figure 5).

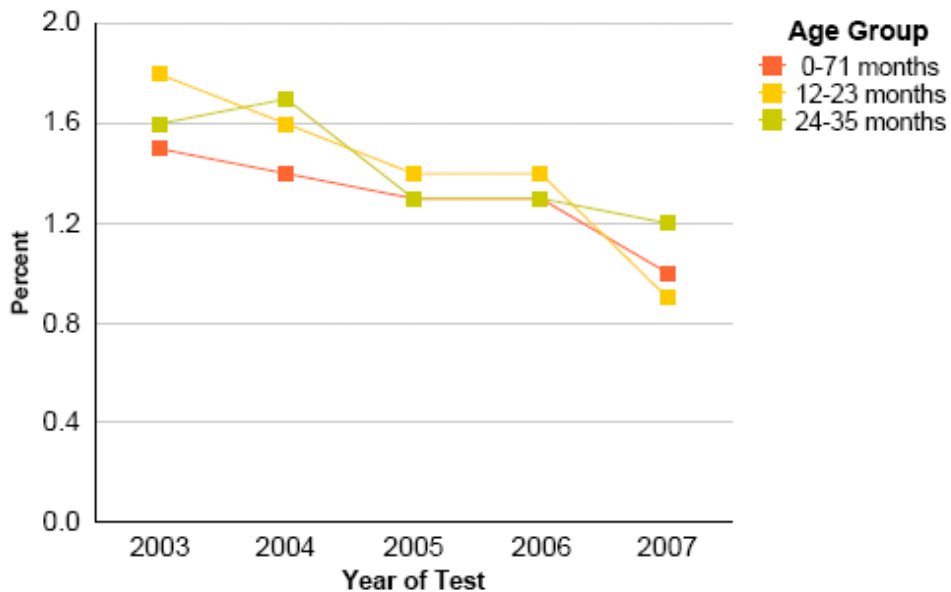


Figure 5: Percent of children (who have been screened) in different age groups with EBLL by year

Additionally, the distribution of elevated blood levels in children in Maine is not geographically homogenous. Figure 6 maps the EBLs by town, where the orange dots mark the

center of each town with an EBLL child or children. The size of the dot indicates the number of children in the town found to have EBLs (see legend). Of the 913 cases from 2003 to 2007, 348 (38%) occurred in the five areas of Sanford, Biddeford/Saco, Auburn/Lewiston, Portland/Westbrook, and Bangor. Conversely, while roughly 40% of our elevated blood leads occur in these 5 regions, a majority (60%) do not.

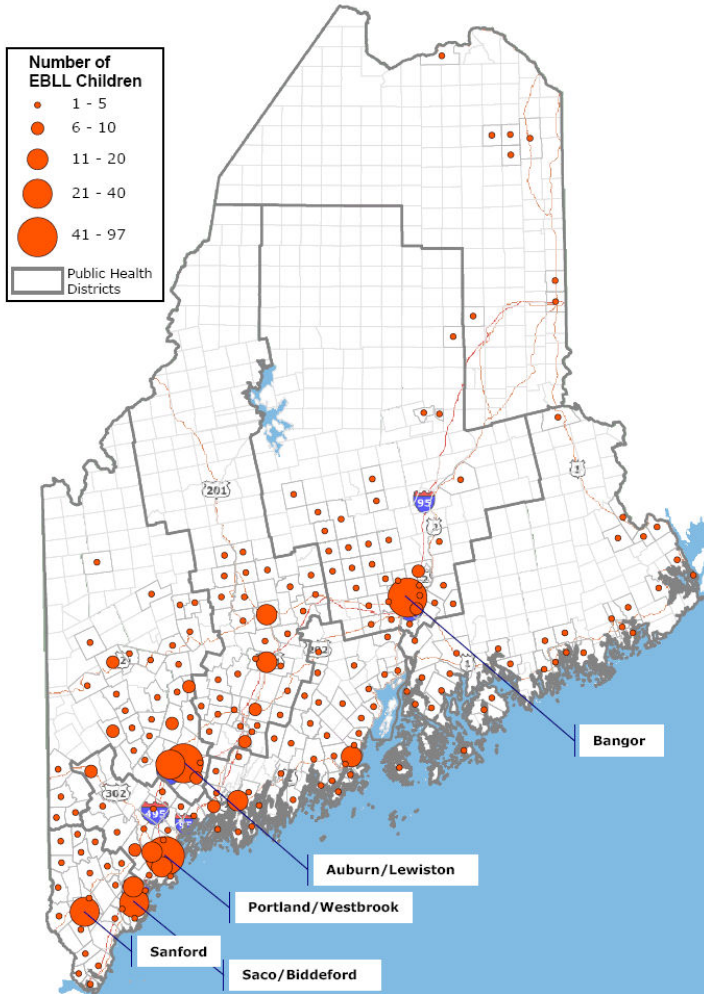


Figure 6: Number of newly identified children under 6 years of age with an elevated blood lead level, by town for the years 2003- 2007

Characteristics of Environmental Inspections

Once a child is found through blood lead screening to have an EBL, the MCLPPP (Maine Lead Poisoning Prevention Program) has the authority to order an Environmental Inspection if the location is a rental property. If the location is a private home, the family can opt

for an inspection (it is not required). Generally speaking, families in private homes opt for an inspection (Figure 7).

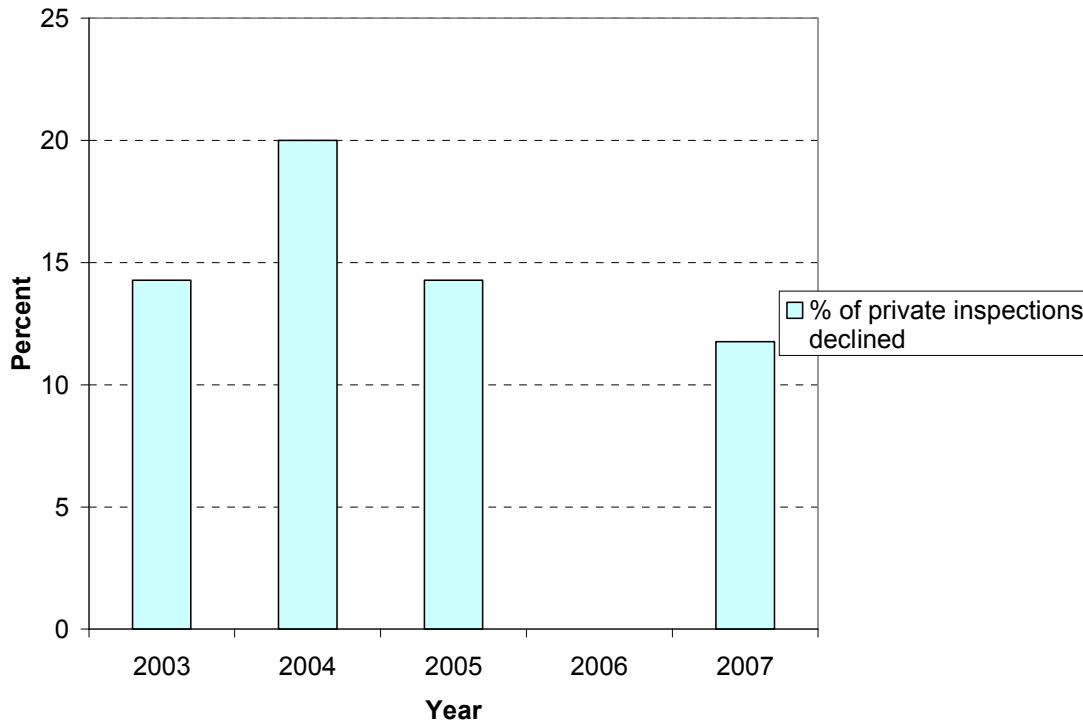


Figure 7: Percent of Environmental Inspections (EIs) declined by private homeowners by year. In 2006, no one declined the offer of an EI.

Data obtained from Environmental Inspections (EI) can also be used to compare the characteristics of the housing where EIs have occurred. Figure 8 compares the percent of completed Environmental Inspections that have occurred from 2003 to 2008 where the home was a private residence vs. a rental property. The final column represents October 2007 to September 2008 because the blood lead level that triggered inspections decreased from 20 ug/dL to 15 ug/dL October 1, 2007.

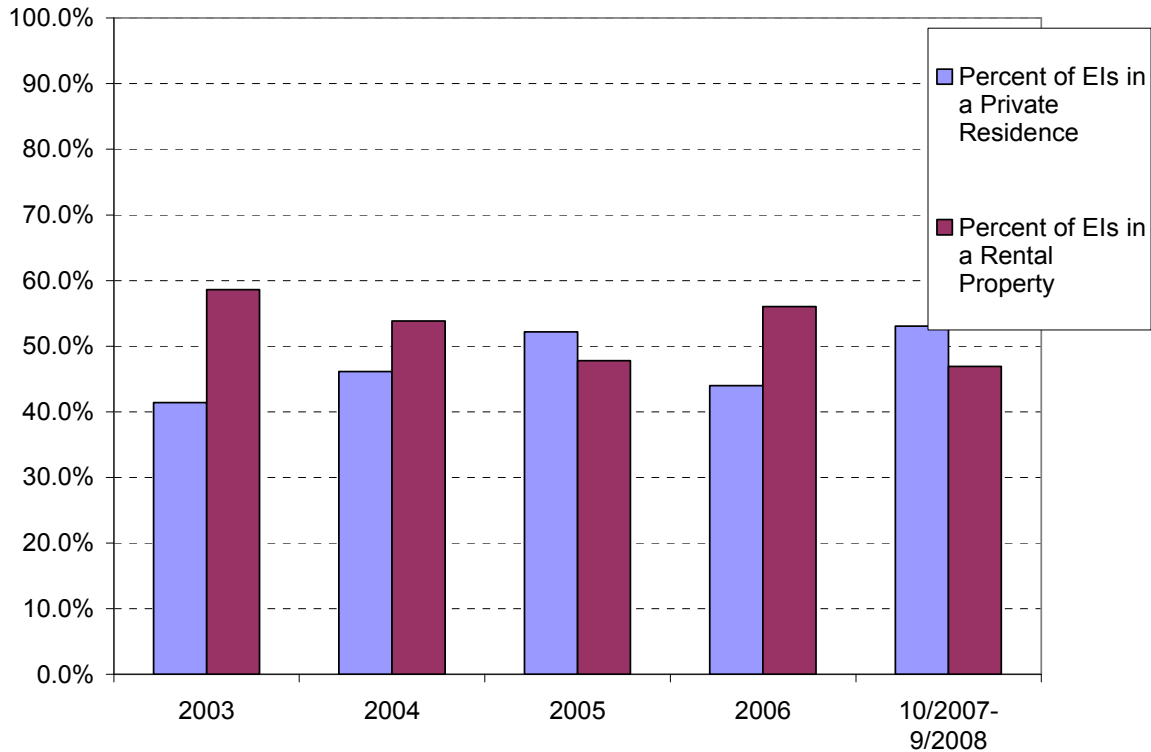


Figure 8: Percent of Environmental Inspections in Rental vs. Private Dwellings by Year

The data show that from a statewide perspective, roughly 50% of the lead poisonings are in rental properties vs. private properties. This is in contrast to the 5 high density areas identified in Figure 6. Overall, in the high density regions (Sanford, Biddeford/Saco, Auburn/Lewiston, Portland/Westbrook, and Bangor) over 80% of the children with EBLs reside in rental housing.

Figure 9 shows the percent of completed Environmental Investigations where no apparent housing hazard had been identified during the time period. Note the large increase in cases in the October 2007 to September 2008 time period. This increase was in part, due to an increase number of cases identified due to “take home lead”, where a parent’s exposure to lead dust resulted in a child’s EBL.

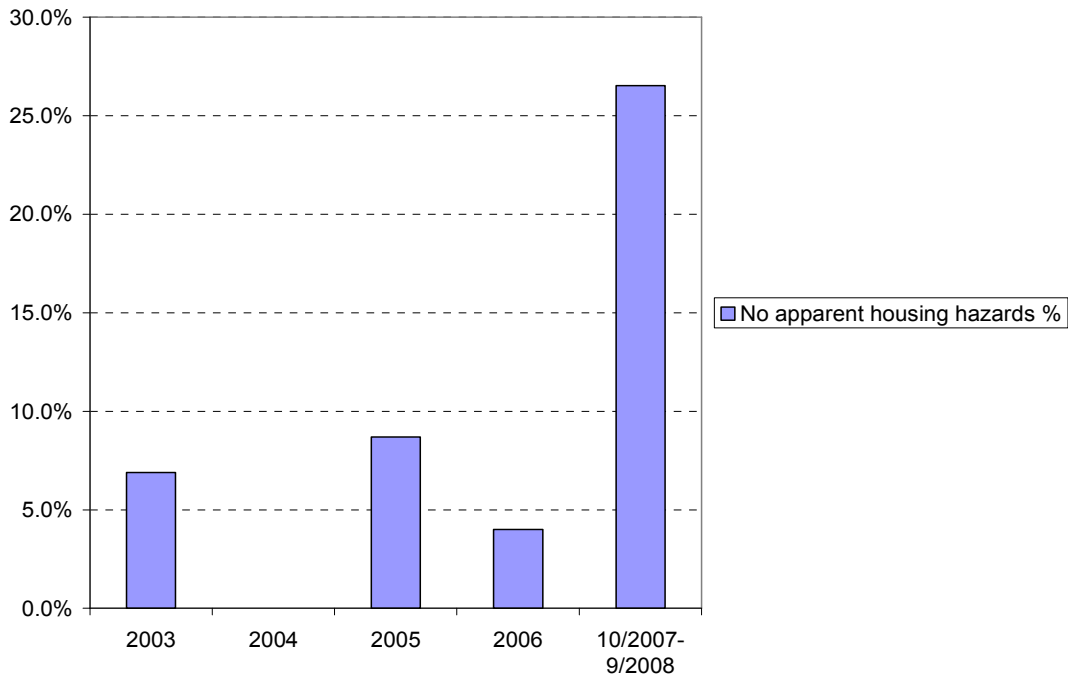


Figure 9: Percent , by year, of EIs where no apparent housing hazards were found

Figure 10 shows the percent of completed Environmental Investigations from 2003 to 2008 where renovations happened in the 6 month period prior to the child being identified with a BLL requiring an Environmental Investigation. As can be seen, renovations are a significant risk factor for a childhood EBLL, with more than 35% of the cases where Environmental Inspections had occurred happened in locations where a recent renovation had happened. Additionally, renovations performed by building owners (including homeowners and landlords) or occupants are associated with more EBLs than renovations performed by a contractor. Renovations increase the likelihood of childhood lead exposure occurring in both private homes and rental dwellings.



Figure 10: Percent of EIs where renovations caused lead dust hazards

Assessment of Risk Factors for Lead Poisoning Among Children Tested for Blood Lead Levels

In 2006 to 2007 a small web based survey was performed by the Childhood Lead Poisoning Prevention Program to improve targeted screening and prevention activities and to understand risk factors associated with blood lead levels below 20 ug/dl. The study is limited by a poor response rate – approximately 20% (739 out of 3626 contacted). For that reason, the total number of individuals in different categories (with the exception of low blood lead levels) tended to be small. Even so, however, some conclusions can be drawn from the study, especially if they are confirmed by other data sources.

For example, Figure 11 shows the distribution of blood lead levels according to risk of the parent’s exposure to lead from their occupation or hobby. Low risk occupations with potential lead exposures that were found to have a low correlation with children with BLLs greater than 5 ug/dL are car repair, gardening, making pottery, painting pictures, reloading ammunition, soldering pipes. Occupations with a high risk of correlation with children with BLLs greater than 5 ug/dL included auto radiator repair, bridge painting or blasting, boat painting, sanding or repair, carpentry, construction, furniture refinishing, home remodeling or repair, painting houses, painting furniture, refinishing car bodies, or scrap metal recycling. Note that the percent of individuals with BLL greater or equal to 5 ug/dl are higher for both the highest risk occupations and the lowest risk occupations compared to those with a BLL < 5 ug/dl.

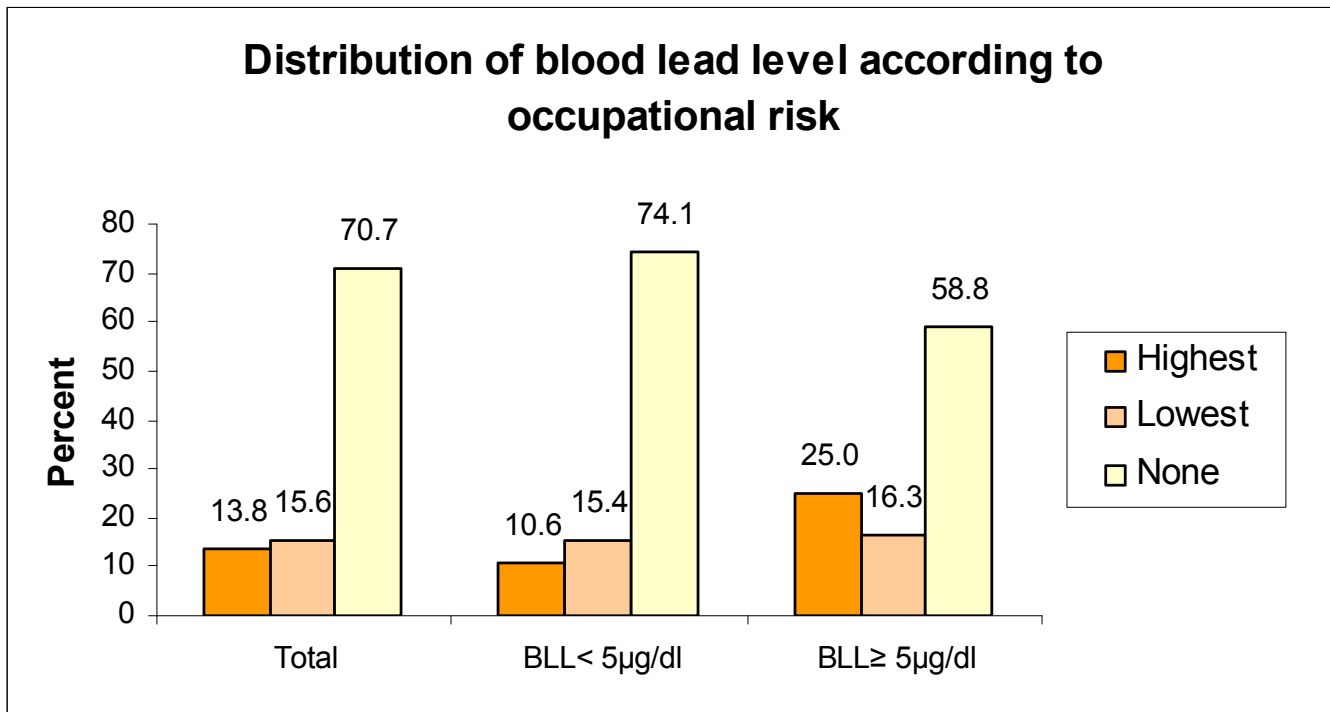


Figure 11: Percent of those surveyed by BLL and occupational risk

Other risk factors identified in the survey include:

- Children living in pre-1950 housing are more likely to have BLL>5 compared to post 1950 housing categories.
- In pre-1950 housing, painted windows and/or hard to open windows and painted floors and/or gaps in floors were significant risk factors.
- There is a protective effect seen from time spent in daycare as opposed to pre-1950 housing; i.e. for children who lived in pre-1950 housing, those who spent time in day care had significantly lower BLL than those who did not.

Background on Occupational Blood Lead Poisonings

The Occupational Disease Reporting System also collects information about occupational exposures to lead. Like childhood blood lead poisonings, NHANES shows significant decreases in adult blood lead levels nationwide over time. Figure 12 from Muntner et al. 2005² shows the decrease in the geometric mean concentration of blood lead in adults.

² Muntner et al. 2005. Continued Decline in Blood Lead Levels Among Adults in the United States. Arch Inter Med 165(Oct 10): 2155-2161

Geometric Mean Blood Lead Level Muntner et al, 2005

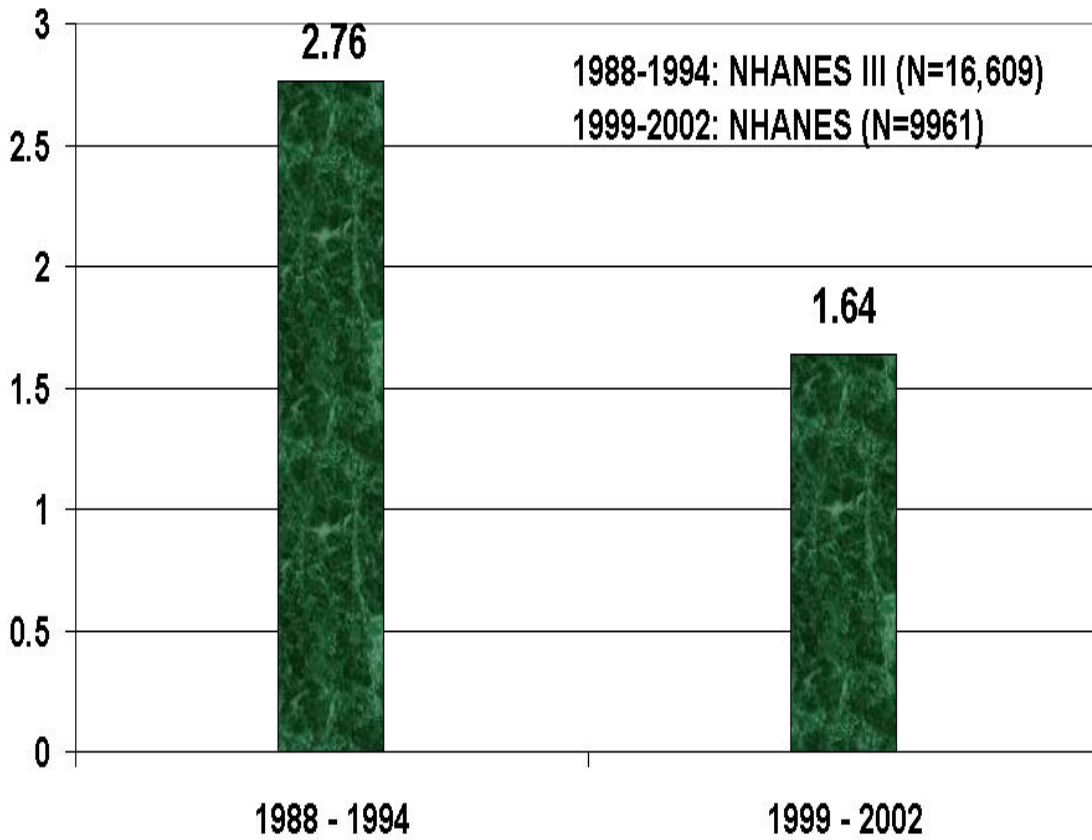


Figure 12: National Geometric Mean Blood Lead Levels

Figure 13 shows the prevalence rates of lead poisoning in the United States from 1994 to 2007 per 100,000 adults aged ≥ 16 years for states that have reported that data. Note the benchmarks are the occupational benchmarks (25 ug/dL and 40 ug/dL) not the childhood lead poisoning benchmarks (10 ug/dL).

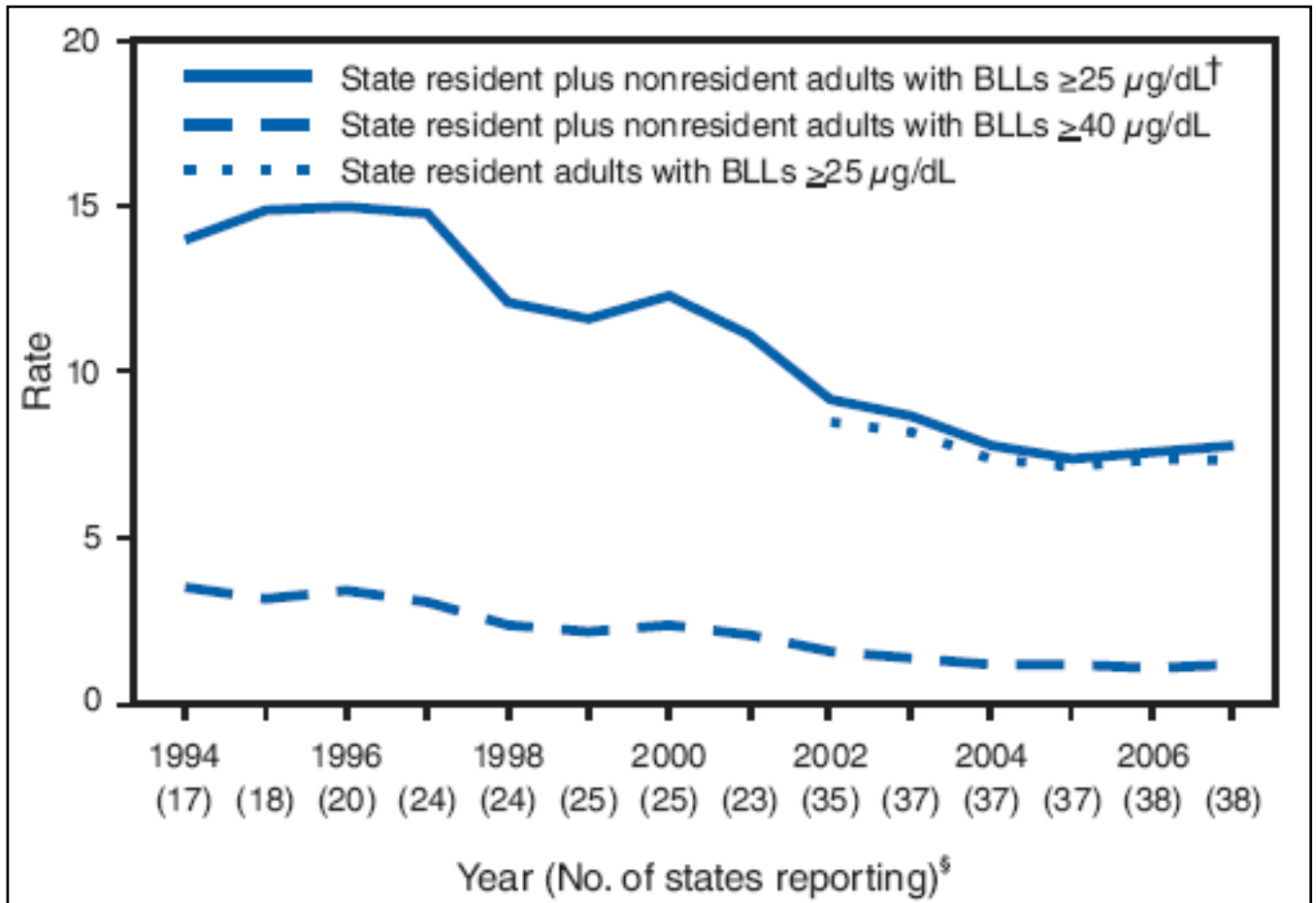


Figure 13: National Prevalence of Blood Lead Poisonings

Rates in Maine, from 2002 to 2009 have seen a similar decrease. Figure 14 shows number of cases by year since 2002 of elevated (greater than or equal to 25 ug/dL.. In 2001 Maine joined the Adult Blood Lead Surveillance System a NIOSH funded state-based surveillance program of laboratory-reported adult blood lead levels.

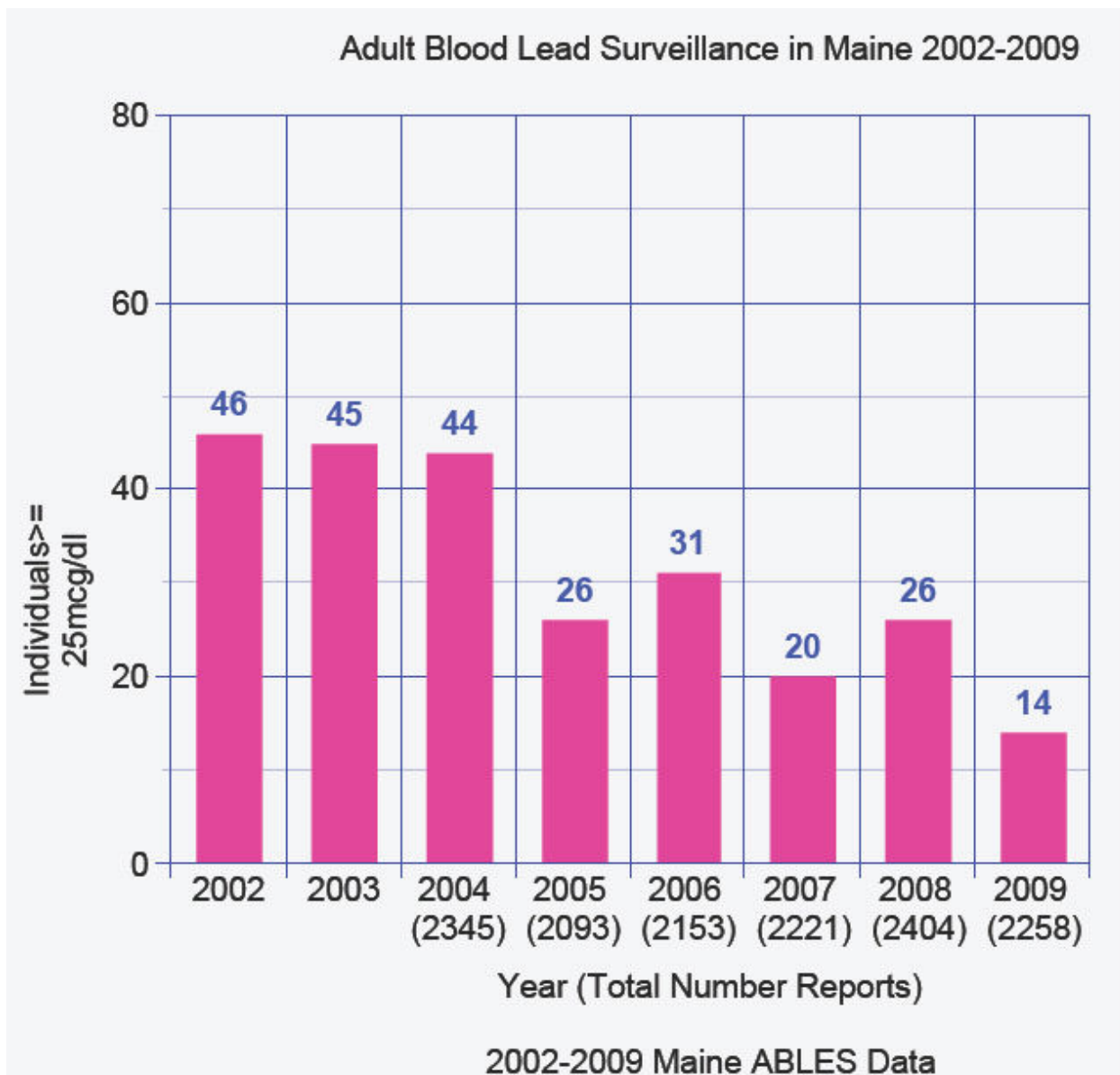
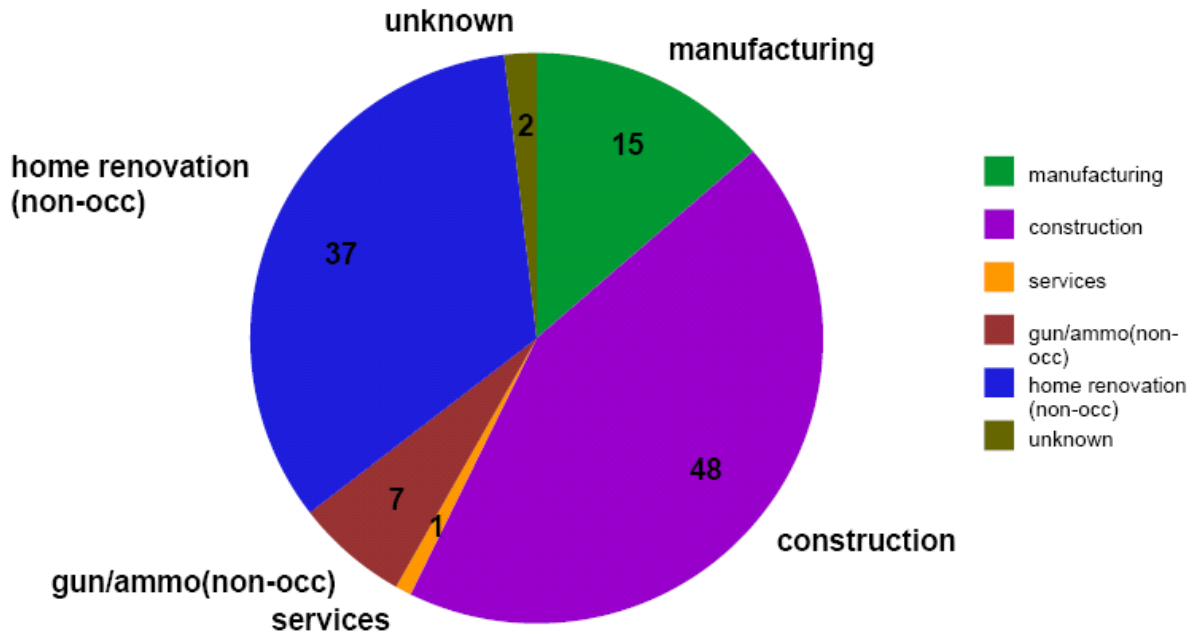


Figure 14: Numbers of Elevated Adult Blood Lead Levels in Maine

In Maine, key industries with the highest potential for lead exposure include painting contractors, bridge workers (both preparation and painting) and manufacturing (ship building, lantern fabrication). In contrast nationally, industries with high risk of lead exposures also include manufacture of storage batteries, mining of lead ores, and smelting (of which there are presumably not significant industries of this type in Maine). Non occupational exposures in Maine are dominated by home renovation and shooting and reloading as a hobby. Figure 15 identifies the breakdown of industries with high risk of lead exposures within the state of Maine.

Source of Lead Exposure in Adults with Elevated Blood Leads



2005-2009 Maine ABLES Data

Figure 15: Occupations associated with Elevated BLL Reports in Maine

C. Existing state infrastructure

In assessing the extent of the childhood and adult lead poisoning problem in Maine, it is necessary to understand the statewide infrastructure that already exists to address both primary and secondary prevention efforts. Understanding this foundation helps to develop realistic strategies and activities for the elimination plan. There are a host of governmental agencies with primary responsibility for lead poisoning prevention and management, as well as a series of secondary state agencies, and community partners. Program activities have either a primary prevention or secondary prevention focus. In public health terminology, primary prevention activities are designed to prevent lead poisonings. Secondary prevention consists of efforts to reduce the progression of a public health problem after it has occurred. Applied to childhood lead poisoning, secondary prevention involves the early identification and treatment of lead poisoning to minimize the long-term physiological and cognitive damage. The following identifies the

various agencies, partners and resources, and the roles they play in both primary and secondary prevention.

Lead Poisoning Prevention Fund

In 2005, the 122nd Maine Legislature established the Lead Poisoning Prevention Fund (LPPF or 22 MRSA c.252 §1322-E). Revenue for the LPPF is obtained from a 25 cent per gallon fee imposed on manufacturers or wholesalers of paint sold in Maine. The LPPF was established to provide resources to support lead poisoning prevention education, outreach and training programs (primary prevention). The legislation creating the LPPF specified seven prevention actions that the Fund should pursue:

- Contracts for funding community and worker educational outreach programs;
- An ongoing major media campaign;
- Measures to prevent children's exposure to lead, including targeted educational mailings to families with children;
- Measures to prevent occupational exposures to lead for private and public employees;
- Funding an assessment of current uses of lead;
- Funding of educational programs and information for rental property owners; and
- Implementation of the lead safe housing registry.

The legislation authorized the Maine CDC to administer the funds with the review and advice of an advisory board and specified that preference should be given to programs that reach high risk or underserved populations. The legislation allows for the contracting of professional services to carry out the actions listed above.

A summary of the status of LPPF activities as of Fall 2009 are:

1. Contracts for funding community and worker educational outreach programs;

The Community Contracts are formulated and designed to engage each Healthy Maine Partnership (HMP) at the local and district levels and in high risk areas. Lead hazards and lead

poisonings are seen state wide, but there are areas of Maine that have a greater burden of children with elevated blood lead levels (eBLLs) and have higher percentages of children with eBLLs among those screened. These communities are referred to as having a “high density” of children with eBLLs. Municipalities where the number of eBLLs cases do not reach the level of “high density” but are still significant are identified as “second tier” areas.

Contracts with the communities are in their second year. Community contracts are broken into different categories depending on prevalence of poisoned children within a region, etc. At this point, there are community contracts with the 5 high density areas, the individual Healthy Maine Partnerships within the public health districts, and the individual public health districts as a whole. At this point, some of the major activities of the grantees have included:

- Identifying a point of contact for lead poisoning prevention outreach who can work with LPPF staff to distribute lead poisoning prevention information through existing programs and networks.
- Compiling a list of existing programs and networks that can be vehicles for delivering lead poisoning prevention education and outreach to parents of young children, health care providers, housing service providers and landlords working with young families. Helping distribute through existing channels targeted marketing materials and training information developed by the Lead Poisoning Prevention Fund.
- Holding a minimum of three (3) education programs or outreach events developed in response to a prioritized action plan.
- Participating in three (3) Maine CDC trainings/contractee forums over the course of the contract period.
- Maintaining and promoting a system for identifying and working with owners and tenants of rental properties within the target area. This includes holding educational events.
- Developing a program for the lead dust testing of 50 apartments within the high density areas.

2. An ongoing major media campaign;

Much of the effort to date has been associated with setting the foundation for an ongoing major media campaign. That has included developing supplementary material, redesigning the website and potentially hiring a public health educator for the LPPF.

In June of 2009 a new lead website was launched. The new website is more interactive, colorful and designed to take better advantage of the internet. Overall the site has had a 49% increase in traffic for the first 8 months of 2009 compared to the last 8 months of 2008. Feedback from community partners has been very positive.

In 2009, the LPPF developed and produced a series of pieces designed for easy distribution and printing. These “tipsheets” are single page fact sheets that address issues of screening for lead, cleaning to reduce lead dust, sources of lead, etc. These pieces were developed using easy to read techniques, and can be produced in both black and white or color. Since these pieces have been produced they were downloaded from the website over 700 times from June through September 2009.

The LPPF has worked extensively with the University of New England Health Literacy Institute to develop and produce a brochure offering lead poisoning prevention information and a free lead dust test kit. We conducted interviews with Maine professionals working in lead poisoning prevention as well as parents who had had a lead poisoned child. With this formative research, we developed a mailing for parents of one-and two-year olds (the highest risk ages of lead exposure) focused on renovation-related hazards. The mailer was focus group tested across Maine with both rural and urban young families. The material also included or provided direction to the tools and resources they need to assess their child’s risk for lead poisoning and to protect their child from it. Our goal with the mailer is to provide immediately actionable steps and to drive traffic to the Childhood Lead Poisoning Prevention website. This mailer is to be used for the targeted mailing required by the legislation (see point 3).

3. Measures to prevent children's exposure to lead, including targeted educational mailings to families with children;

The major effort associated with this activity is the distribution of the mailer described above. The mailer is being produced in two iterations, one offering a free lead dust test kit and one offering information only. Two iterations are being produced, in part, to evaluate the cost of and demand for the free lead dust test kits. Currently, LPPF has budgeted for 1000 free lead dust test kits. Distribution will be targeted to parents of 1 and 2 year olds via direct mail. Geographically, distribution will initially focus on the high density areas and possibly one or two public health districts. The mailer will also be made available to LPPF community contractors to distribute via their channels. Much of the spring and summer of 2009 was spent developing the materials and data transfer protocols between the lab and MCLPPP. The protocols were subject to a limited alpha test, with a beta test to 500 members of the central district in the fall of 2009.

4. Measures to prevent occupational exposures to lead for private and public employees;

Most contractors, property managers and landlords are required to take lead safe training under EPA's new Renovation, Repair and Painting Rule (RRP) which came fully into effect in April 2010. Using LPPF funds, DEP offers lead training at a discounted rate to landlords and property managers. Additionally, contractors who will need only a refresher course will be offered a discounted rate, supported in part by a one-time grant from the U.S. Environmental Protection Agency (USEPA).

5. Funding an assessment of current uses of lead;

Subsequent to the establishment of the Lead Poisoning Prevention Fund, there have been actions at both the state and federal level that have resulted in the reduction and elimination of the use of lead in products. In August 2008, the Consumer Product Safety Commission clarified that the Consumer Product Safety Improvement Act requires that manufacturers and importers of products intended for children under 12 demonstrate that the lead content in their products does not exceed mandatory standards. Additionally, the 123rd Maine State Legislature enacted Public

Law 604, *An Act to Ensure that Children’s Toys and Products are Free of Lead*. This law further reduces the likelihood that childhood lead poisonings will be caused by exposure to lead in products.

This assessment has not yet been identified as a priority for expenditure of the limited monies available from the LPPF, as products containing lead have not been found as a primary or prevalent cause of childhood lead poisonings in Maine.

6. Funding of educational programs and information for rental property owners;

Utilizing LPPF monies, DEP is providing “Essential Maintenance Practices” courses in the 5 high density regions targeted for use by landlords, as well as Lead Dust Sampling Technician courses in Sanford, Saco/Biddeford, Portland, Lewiston/Auburn and Bangor in 2010. Additionally, options for web based training and a renovations course specifically for homeowners are being explored.

7. Implementation of the lead safe housing registry.

DEP is in the process of developing a lead safe housing registry. The registry is planned to be an online searchable database which property owners can use to list their lead-safe rental properties. Properties will be listed that meet various criteria and rated as follows:

CRITERIA	Silver	Gold	Platinum
Lead-Hazard Screen at turnover to identify: deteriorated paint, accessible bare soil, plus dust wipes from entry floor, two other floors, and two window sills.	R	R	
Documentation that potential lead hazards addressed as a result of lead-hazard screen	R	R	
Landlord (or maintenance staff) is trained in Essential Maintenance Practices or Lead-Safe Renovation	R	R	
Landlord provides tenant with notice/form to report deteriorated paint	R	R	
Lead inspection performed and report available (identifies location of lead-based paint)		R	

Lead inspection performed; no lead paint found – or- built after 1977			R
R=Required			

Childhood Lead Poisoning Prevention Program

The Childhood Lead Poisoning Prevention Program (CLPPP), funded by the U.S. Centers for Disease Control and Prevention (CDC), has existed as a program in the Maine CDC (formerly Bureau of Health) since 1992. The ultimate goal of the program, as stated in the Healthy Maine 2010 objectives, is the elimination of childhood lead poisoning by the year 2010 by preventing lead exposures to young children. Hence the role of the MCLPPP includes both primary and secondary prevention.

Much of the MCLPPP program primary prevention activities are tied into the LPPF activities (materials development, website, etc). Two areas, however, are not directly tied to LPPF activities – they are collaborations with Public Health Nursing (PHN) and simplification of the real estate disclosure.

PHN is an important partner with the lead program – its staff interact with parents of young children directly in their homes and have been able to intervene to prevent a lead poisoning or prevent a lead poisoning issue from becoming worse. MCLPPP is currently working with PHN in several areas.

PHN is developing a healthy housing module for home visits. The lead program has been providing feedback and making materials available for distribution to clients. The lead program also collaborates with PHN through quarterly conference calls with their Public Health Nursing liaisons. These conference calls serve to keep PHN apprised of activities within MCLPPP that may be important in their work. Finally, MCLPPP is developing a “leadcheckTM” kit to make available to PHN. This will allow the PHN to easily test deteriorated paint for the presence of lead during home visits. and direct parent education to preventing possible lead exposure

Currently there are both state and federal laws that require disclosures about the known or suspected presence of lead paint during real estate transaction (both purchase and rental). While a disclosure is intended to notify potential owners or tenants that lead paint may or does exist, this paperwork is only helpful if it is understandable and if it is recognized. Current practice is the distribution of both state and federal disclosure forms. Combining those forms into one form that is “easy to read” would improve the ability of the currently separate pieces to serve their function and simplify compliance for landlords and real estate agents.

The Maine CLPPP has developed an effective secondary prevention system in partnership with public, private and state agencies. The strength of this system begins with the Maine Lead Poisoning Control Act.

Enacted in 1992, the Maine Lead Poisoning Control Act provides the Department of Health and Human Services, under which MCLPPP is housed, with the authority to monitor blood lead testing results, conduct inspections in homes and child care facilities where the “presence of lead-based substances” is suspected, and order the removal of lead hazards.

Maine statute mandates that all children receive a blood lead screening test at one-and-two years of age unless the healthcare provider can demonstrate, via a risk assessment questionnaire that the child is not at risk for lead exposure. The law also reiterates the federal mandate to screen every Medicaid-enrolled one-and-two year old, regardless of risk status. Primary pediatric healthcare providers are required to conduct all of the lead screening on all Maine children. Blood lead specimens must, under Maine law, be submitted to the Maine State Health and Environmental Laboratory for analysis. Under an agreement with MCLPPP, the state public health laboratory electronically sends all blood lead test results to MCLPPP, thereby ensuring MCLPPP access to all lead screening results for Maine children.

Upon notification of an elevated blood lead result, the MCLPPP initiates comprehensive case management services. MCLPPP’s health coordinator manages the referrals to public and community health nurses throughout the state for all children with confirmed blood lead levels of 15+ µg/dl. Public and Community Health Nurses provide case management services for lead poisoned children in every town and community in Maine. Twelve Public Health/ Community Health nurses are designated as “childhood lead poisoning specialists”. These 12 nurses provide consultation and resource information to their colleagues. MCLPPP coordinates quarterly

conference calls for the lead poisoning nurse specialists, to share information and updates, and for mutual problem sharing. For blood lead levels between 10 and 14 ug/dL, MCLPPP monitors blood lead levels and offers information and free lead dust testing.

Licensed lead inspectors are contracted by the MCLPPP to conduct environmental investigations in homes where children are identified with confirmed blood lead levels of 15+ µg/dl. An MCLPPP environmental coordinator manages the referrals for environmental investigations, provides quality oversight, and works with property owners to ensure that the required remediation is completed. Many of the environmental investigations are contracted to Community Action Agencies (CAA). CAA's are also the administrators of Maine State Housing Authority (MSHA)'s Lead Hazard Control Grant (LHCG) program. Thus the lead inspectors are in a position to offer property owners applications for the LHCG funds if lead hazards are identified on the property. The cities of Portland, Lewiston and Auburn have independent LHCG funds that are offered to property owners in those communities.

With the availability of abatement monies, the majority of property owners in Maine comply with orders to abate. The few recalcitrant landlords that adamantly refuse to comply with the state law are referred to the state attorney general's office. The Maine Attorney General has the statutory authority to pursue court action in order to force the clean up of lead hazards. While few cases have been brought to court, they have been effective in the implementing the abatement process in identified properties.

Lead Hazard Prevention Program (DEP)

The Department of Environmental Protection's Lead Hazard Prevention Program assists in the elimination of childhood lead poisoning with programs aimed at preventing the release of lead to the environment. Through regulation, DEP sets the standards for lead training courses as well as work practice standards for lead inspection (including testing for lead-based paint) and lead abatement. DEP also enforces Maine's law which requires anyone engaged in renovation, remodeling, maintenance or repair to take reasonable precautions to prevent the release of lead to the environment. Along with the explicit authority for these activities (see 38 MRSA §1291 et seq.), DEP has general authority to pursue enforcement with penalties of \$100 to \$10,000 per day per violation.

DEP's primary prevention activities include technical assistance to contractors, building owners, maintenance workers and parents on how to do lead-safe maintenance and renovation. DEP also provides presentations on lead poisoning and how to recognize and prevent lead hazards in housing to trade and professional organizations for codes enforcement officers (CEOs), realtors, property managers, architects, and others. As previously mentioned, in accordance with the requirements of the Lead Poisoning Prevention Fund, DEP is responsible for developing and maintaining Maine's Lead-Safe Rental Housing Registry.

Maine law mandates that all lead industry workers – inspectors, risk assessors, design specialists, contractors and workers – be trained and licensed. The Maine Department of Environmental Protection (DEP), Lead & Asbestos Unit, is the state agency responsible for implementing this law. Through its Lead Hazard Prevention Program, the DEP sets and enforces standards to ensure a competent and qualified lead workforce. DEP staff present a module on state lead programs at all initial training courses for lead professionals.

Maine communities and counties which receive U.S. Dept. of Housing and Urban Development funds and use them for renovation or rehabilitation have been required to use Lead Smart contractors, and beginning April 22, 2010 EPA "RRP" certified contractors. Contracts are awarded after verification that a contractor has participated in LSR/RRP training and there is a DEP or EPA record of that participation.

Lead Hazard Control Programs (Maine State Housing Authority, City of Portland, Cities of Lewiston/Auburn)

Lead Hazard Control Programs are the primary program targeted to mitigating lead hazards in housing. Funded by the US Department of Housing and Urban Development, the grant typically provides low or no interest loans to eligible recipients to abate lead hazards. These funds are offered to both homes that have already been identified as a lead hazard by the finding of a lead poisoned child, as well as homes that qualify financially, house children of the target age and have lead paint (but have yet to poison a child). Currently (2009-2010) the Maine State Housing Authority, the City of Portland and the Cities of Lewiston and Auburn are LHCP Grant recipients.

Lead Hazard Control Grant programs target rental housing that is occupied by residents who meet income eligibility requirements, and are located in high risk “target areas”. A property that is owner occupied is eligible if the unit contains a child under the age of six, and has lead paint present. This acts as primary prevention in that it identifies and removes potential lead paint hazards before there is a poisoned child. Additionally the programs serve to abate houses where lead poisoned children have been identified. This serves the purpose of environmental case management (secondary prevention). The programs include lead awareness, and increased screening efforts through local partnerships.

The Maine State Housing Authority (a.k.a. “MaineHousing”) was awarded its fourth HUD Lead Hazard Reduction Grant in October 2008. With the required matching funds, a total of \$4,377,000 has been allocated to be used from October 2008 through September 2010. These monies are targeted to perform lead abatement (complete removal of lead paint and lead contaminated soil, or permanent enclosure of lead-painted surfaces) in low-income residences of lead-poisoned children and children with elevated blood lead levels, except for those communities or counties who receive direct HUD Lead Grant funding. MaineHousing’s Lead Hazard Control Program provides 0% deferred, forgivable loans (interest free with no monthly payments).

The program provides up to \$16,000 to eligible homeowners, and up to \$100,000 to eligible landlords of lower-income tenants for lead safety improvements. The entire amount of the loan is forgiven after 3 years, provided the property isn’t refinanced or sold during that time, and, in the case of rental property, rental units are kept affordable. Making homes lead safe may involve paint removal or stabilization, and window and door replacement. MaineHousing has completed lead hazard reduction work in 746 residences with its first three grants, and expects to complete 280 more units over the next three years with the most recently awarded HUD funds. MSHA also delivers *Lead Safe Renovator Training* as part of the LHCP and has trained over 500 contractors, landlords, and others in lead safe renovation practices or in proper lead sampling techniques.

Likewise, the cities of Portland, Lewiston and Auburn have been awarded HUD Lead Hazard Control Program (LHCP) grants. Portland is in its third round of funding. The cities of

Lewiston and Auburn partnered to successfully compete for their first round of LHCP funds in 2001 and the second round in 2009.

Occupational Disease Reporting System

Within the Environmental and Occupational Health Programs of the Maine CDC is the Occupational Disease Reporting System (ODRS). The program is structured similar to the MCLPPP program in that it focuses on primary prevention activities, and secondary prevention activities based on screening and surveillance. In this case, the screening is for adults for occupational purposes. All adult blood lead results get reported to ODRS. Those above 25 ug/dL are followed up with a questionnaire and intervention, if necessary. ODRS coordinates with the State Bureau of Labor as well as NIOSH and OSHA.

Other State Partners

Several state agencies and other groups act as partners with the above agencies to ensure the goals of eliminating childhood lead poisoning are met. Some of these groups include:

- Health and Environmental Testing Laboratory – state law requires all blood lead tests to be performed at the Maine State Health and Environmental Testing Laboratory. This provides MCLPPP with all their surveillance data that is used identify risk factors for lead poisoning and spot trends in lead poisonings. Additionally this data is used for prompt and appropriate case follow up by MCLPPP staff.
- MaineCare – As all MaineCare recipients are currently required to get a blood lead test at ages 1 and 2, MaineCare is an important partner for ensuring that occurs. MaineCare works with MCLPPP in sharing data to evaluate the rate blood lead testing, improving outreach to MaineCare clients, and potentially identifying screening rates on a practice by practice basis to identify areas where screening rates could be improved.
- The Medical Community – both nurses and physicians act as trusted sources of information, decision makers about the need for screenings, and active partners in lead poisoning prevention.

- Public Health Nursing (PHN) - Public Health Nursing acts as a vital partner both for preventing lead poisoning and for managing poisoned children. Because public health nurses are often in the housing of concern, they can identify and prevent practices that increase the risk of lead poisoning, can identify deteriorated paint, and once a child is poisoned, act as trusted liaisons between the MCLPPP and the families. Public health nurses also provide a conduit for information to Community Health Nurses – contractees who cover parts of the state not covered by Public Health Nursing.
- Women Infants and Children (WIC) currently asks every parent they interact with if their child has had a blood lead test. WIC also provides nutrition education and healthy food sources for low income families and children. As such, they provide a link to one group at risk of lead poisoning. Hence, collaboration with WIC is an important part of primary prevention. Additionally, a collaboration with WIC and the medical community is currently underway and may provide an opportunity to streamline blood lead testing for their members.
- HeadStart – is a comprehensive early childhood development program that serves low-income children and their families. Early Head Start in particular provides a medium to increase screening in our target population.

Other private groups or non-state agencies also act as partners in the effort to eliminate childhood lead poisoning. Some of these groups include:

- Lead Poisoning Prevention Fund Contractees: The Lead Poisoning Prevention Fund (LPPF) supports community outreach programs to enable the public to identify lead hazards and take precautionary action to prevent exposure to lead. The LPPF provided funds to allow grassroots community-based organizations with direct ties to the at-risk communities (i.e. landlords and renters, special target populations like refugee and immigrant groups) to directly engage in the outreach strategy, building widespread support for action as well as a sustainable local infrastructure. The Community Partners promote a system that supports local involvement of families, landlords, home inspectors, health care providers and many others critical to implementing and incorporating lead poisoning prevention practices in their communities and help eliminate lead poisoning for Maine families.

- Landlords, landlord associations, property owners and local housing authorities: The MCLPPP has considerable authority to intervene when lead poisonings occur in rental property. Additionally approximately one-half of the lead poisoned children occur in rental property. Given that, collaboration with the rental community to change how lead and property maintenance is perceived will be important in eliminating childhood lead poisoning. Working with landlord associations, such as the Maine Apartment Owners and Managers Association (MAOMA), is critical to ensure support for mutual goals. Additionally, local housing authorities who administer low income housing are an important partner.
- Immigrant Advocacy Groups – such as United Somali Women: It is well recognized that some immigrant groups are at greater risk of lead poisoning. Additionally, working with these groups include significant additional cultural and language barriers that are difficult to overcome. Grassroots organizations, such as United Somali Women are important in helping identify immigrant specific lead exposure routes, as well as present information in a manner that is relevant to their community.
- Realtors: Both Maine and Federal law requires that sale of a residential property built before 1978 requires that the owner provide the potential buyer with a lead disclosure. Given this requirement, targeted intervention at this opportunity could identify potential lead hazards to new home owners.

All the previous organizations act in some way in promoting the goal of preventing childhood lead poisoning, and the list is not and cannot be comprehensive. However, all these organizations interact in ways to further our mutual goals.

D. Comprehensive Goals, Objectives and Activities Models

During the Winter and Spring of 2009/2010, the LEAdMe advisory council evaluated the activities associated with the prevention of childhood and adult lead poisoning in Maine. These activities were cataloged in a series of objectives similar to Logic Models (with Visions rather than Objectives – to reflect a higher level evaluation of the activities rather than a managerial level). To distinguish these from Logic Models, they are referred to as Activities Models and

they are included in Appendix C. Logic models for the MCLPPP program for the specific activities are presented in Section 4. Other logic models representing the various programs activities (other than MCLPPP) may or may not be developed by those programs.

The LEAdMe Advisory Council identified the following Comprehensive Goals for the activities surrounding prevention of lead poisoning. They are:

1. Reduce to zero the number of lead poisoned children less than 6 years old with blood lead levels above 10 ug/dL.

While the comprehensive goal is to eliminate lead poisoning in children under 6 it is currently the case that this would not be measurable given that screening is only required for children under 2. Additionally, the decision level of 10 ug/dL is based on CDC's definition of "lead poisoned" while recognizing that there may be effects on childhood development below 10 ug/dL.

2. Reduce the number of children less than 6 years old with detectable blood lead levels.

The purpose of this comprehensive goal is to recognize that while the action level for lead poisoning is 10 ug/dL (no intervention currently occurs at levels less than the action level) there is evidence that concentrations below 10 ug/dL can cause effects in the developing brain. Additionally, not setting a numeric goal recognizes that there is no way to measure or evaluate this goal. It is expected that concrete actions associated with comprehensive goal 1 will additionally support comprehensive goal 2.

3. Reduce the number of children over 6 years old and adults who are exposed to lead.

Lead also has potential negative impacts on children older than 6 and for adults. Again, with the exception of targeted screening through OSHA for occupational exposure, this population is not regularly screened or tracked. This is especially an issue for those children older than 6 (who are not followed by MCLPPP) and younger than 16 (who are not followed by Occupational

Health). Again it is expected that activities associated with the previous goals will have an impact on this population as well.

4. Reduce the number of adults exposed to lead through jobs and hobbies.

Jobs and hobbies involving lead are an exposure route that is defined and conceptually one where one could intervene.

Furthermore, to achieve these comprehensive goals, the LEAdMe Advisory Council divided the activities into Primary Prevention (prevention of poisonings), Secondary Prevention (management of poisonings and abatement) and Surveillance. Within each of those categories, activities associated with the major stakeholders for lead poisoning prevention were identified and cataloged. In this way gaps and areas of potential cooperation were identified. As this exercise was designed to capture current activities rather than develop a forward looking Logic Model, the “Objectives” have more in common with a “vision” rather than being “SMART” objectives. Those objectives will be developed when true Logic Models are developed to support activities within each work area.

Primary Prevention (Activities associated with preventing children from becoming poisoned).

Objective 1: Sources of lead exposure to young children will be identified and reduced.

Objective 2: People who live in rental housing with lead paint will learn how to live safely in and around them.

Objective 3: People who own buildings with lead paint will learn how to safely maintain them.

Objective 4: People who professionally and nonprofessionally work with lead will use safe work practices.

State agencies and partners who currently have activities associated with these objectives and some of their activities supporting these objectives are described below. Additionally, the intermediate and long term objectives associated with these activities are also identified.

The Maine Lead Poisoning Prevention Fund (LPPF)

The LPPF funds community partners to help with outreach through the LPPF. This is a major use of the funding and it allows for those organizations who know their community best to help identify stakeholders, gatekeepers, effective messaging and effective targeting of messaging. The LPPF is also required to do a direct mailing of lead information to parents of 1 and 2 year olds and distribution of these materials to OB/GYNs and CNMs for distribution to newly pregnant patients. There are approximately 15,000 new births per year in Maine. The LPPF is also required to develop a brochure and poster for display in retail locations that sell paint removal tools. The LPPF also partners with the Department of Environmental Protection Lead Hazard Prevention Program to provide trainings on lead safe work practices and to develop a Lead Safe Housing Registry. Finally the LPPF is also in the process of developing resources such as trainings for housing partners (such as Code Enforcement Officers and Local Health Officers) who enter the home. These trainings can be used by these individuals to identify potential lead paint concerns and to direct individuals to more resources. Additionally, by working with our community partners, the LPPF is hoping to develop culturally appropriate intervention materials for recent immigrants who are at higher risk of lead poisonings (such as the Somali community).

For the intermediate term, (1 to 5 years) it is expected that these activities will increase the awareness of hazards in Maine, and reduce the rates of lead poisonings in the High Density areas in particular, reduce rates of lead poisonings in immigrant communities in particular. It is also expected that the awareness will include screening for lead hazards and addressing those hazards before poisonings occur. Activities around trainings to partners (e.g., home visitors) are expected to decrease renovation related poisonings. Finally resources to the Maine DEP are expected to result in a well populated Lead Safe Housing Registry and an increase in the trained workers (e.g., lead dust technicians and renovators).

For the long term, it is expected that the number of lead poisoned children will decrease and that there will be increased awareness of lead hazards and renovation techniques to prevent

the production of lead hazards. Finally, it is expected that the Lead Safe Housing Registry will be well populated and used.

Recipient of HUD's Lead Hazard Control Grants (LHCG)

Recipients of HUD's Lead Hazard Control Grants are an important partner for primary prevention in that these funds help identify and abate housing with lead based paint – usually before a child becomes poisoned. These programs actively market these services additionally identifying and abating these potential problems proactively. Collaborating with the MCLPPP program and LPPF Community Partners also ensures locations are being abated.

Intermediate activities associated with these activities include abating at-risk properties before children get poisoned and an overall decrease in the number of hazardous homes. Similarly these will have the long term impacts of decreasing the number of poisoned children and decreasing the at risk housing stock.

The Maine Childhood Lead Poisoning Prevention Program (MCLPPP)

While many of the MCLPPP primary prevention activities fall under the funding umbrella of the LPPF, some activities do not. The MCLPPP is very active in collaborating with programs that supply home visitors – including Public Health Nursing, but also Head Start, Home Inspectors, DHHS Case Managers, and others. This is extremely important when focusing on high risk immigrant populations (such as the Somali community in Lewiston/Auburn) as these home visitors often have the resources and experience to communicate effectively with these populations. Another project for the MCLPPP program is to work with the Real Estate community to simplify the lead disclosure forms. Currently there are several forms being used to meet state and federal requirements and it is unclear if they are serving their purpose effectively.

These activities are expected to help identify lead hazards by home visitors and at point of purchase before a child gets poisoned. Long term outcomes will be a decrease in lead poisoned children and a decrease in the stock of hazardous homes.

The Maine Department of Environmental Protections Lead Hazard Prevention Program

The Maine DEP's primary prevention activities include implementation of the Chapter 425 *Lead Management Regulations*, providing technical assistance to the general public, development of the Lead Safe Housing Registry, and the enforcement of Maine's Emergency – provision requiring the use of lead-safe work practices. Maine DEP also provides presentations on lead regulatory requirements and lead-safe work practices to professional groups, including real estate agents, Codes Enforcement Officers, contractors and building supply retailers.

The Lead Safe Housing Registry is expected to provide parents with the ability to find lead safe rental properties, and landlords with a place to tell prospective renters of their lead-safe rental units. Lead abatement projects are expected to eliminate lead hazards and cause no lead exposure. Rental housing on the lead safe housing registry will be routinely screened for deteriorated paint and lead dust, and identified issues mitigated. Workers will use lead-safe work practices.

These activities will also promote worker safety in that workers will have the opportunity (and required with RRP) to be trained in lead safe work practices. Additionally during enforcement of emergency provisions, workers practicing unsafe work practices can be identified and educated.

It is expected that in the long term this will help decrease the number of lead poisoned children, decrease the stock of lead hazards in homes and decrease the number of occupational lead poisonings.

The Maine State Housing Authority

The Maine State Housing Authority, in addition to being a Lead Hazard Control Grant recipient, also funds weatherization and rehab activities. These activities provide an opportunity to provide education to both the groups doing the work and the homeowners. Additionally,

appropriate training prevents the development of lead dust hazards while performing rehab or weatherization projects.

These activities are expected to prevent the production of lead hazards during renovation activities as well as identify lead hazards during standard rehab or weatherization activities or during energy audits. The ultimate goal is to not create lead hazards during MSHA activities, and to decrease the number of workers occupationally exposed to lead.

Section 8 and Tennant Based Rental Assistance Programs

These programs typically provide a visual screening of properties to identify potential lead hazards. This has the potential to identify lead hazards proactively at its simplest, but has been expanded (using LPPF community contractees) to include in the city of Sanford, lead dust testing of all properties before rental assistance programs are offered to an individual.

It is expected that these activities will result in increased awareness for both the landlord and the tenant about lead paint in housing. This will then result in actions to decrease exposure to lead by maintaining that lead paint in good condition.

Landlords and Real Estate Professionals

Landlords and Real Estate professionals are an important stakeholder as almost all of our lead poisonings in the high density areas occur in apartment buildings. Similarly Real Estate professionals have had requirements for disclosure of lead hazards and are in a unique position to educate potential buyers on the hazards of lead. Landlord associations, such as MAOMA (Maine Apartment Owners and Managers Association) are playing an important role in communicating the lead poisoning prevention message to their membership.

Activities in this area will result in increased knowledge about lead in housing – both during home purchases and in rentals. Increased knowledge, with the appropriate follow up will result in changes in behavior around lead paint to prevent exposure to lead. These activities will

then support the long term objectives of decreasing the number of lead poisoned children and not creating lead hazards.

Child Care Facilities

As a location where children spend a significant amount of time, childcare facilities are also an important location to prevent lead poisoning. This has been recognized for some time, and in Maine all licensed childcare facilities are required to be lead safe. DHHS Child Care Licensing staff screen each child care facility for potential lead hazards as part of their annual site visits. This activity prevents licensed childcare facilities from becoming a source of lead poisoning for children.

The Maine Occupational Disease Reporting System

The Maine Occupational Disease Reporting System typically focuses on occupational and adult lead poisonings (among other things). However, they play an important role in that intervention at the occupational and adult levels can prevent incidence of take home lead (where children are poisoned by their parents occupation) as well as reduce lead hazards produced by renovation related activities. These activities are expected to result in fewer occupational adult lead poisonings as well as reduce the number of cases of take home lead.

Secondary Prevention (Activities associated with identifying lead poisoned children and mitigating the hazards which have poisoned them).

Objective 5: All MaineCare children will have a blood test by ages 1 and 2.

Objective 6: The Lead Risk Assessment will be used on all children under the age of 6.

Objective 7: Blood lead testing rates for children at risk will be 100%

Objective 8: Employers implement required medical monitoring for lead.

Objective 9: Self employed adults and hobbyists who work with lead will get screened.

State agencies and partners who currently have activities associated with these objectives and some of their activities supporting these objectives include:

The Maine Childhood Lead Poisoning Prevention Program (MCLPPP)

The Maine CLPPP program has major activities associated with secondary prevention. Those activities include case management once a child is poisoned as well as efforts to promote screening. The MCLPPP screening plan (<http://www.maine.gov/dhhs/eohp/lead/documents/ScreeningPlan.pdf>) spells out many of those activities in detail. Some of those activities include outreach to medical providers on blood lead testing (with special effort associated with those which service immigrant communities), development and distribution of the lead risk assessment questionnaire, and outreach to individuals, including new immigrants to promote screening. A major effort includes the transfer of blood lead testing data into the State's immunization program, IMPACT 2. This will allow medical providers to see blood lead data in patients in real time and also allow for evaluation of screening rates among various providers. These activities are expected to increase screening rates, result in the appropriate use of the risk assessment questionnaire, especially among high risk individuals (immigrants, MaineCare recipients), and ensure the appropriate children get tested.

Recipient of HUD's Lead Hazard Control Grants (LHCG)

The Cities of Lewiston and Auburn have a Lead Hazard Control Grant, in which the grant includes activities associated with screening. In Lewiston/Auburn, any child under 6 who lives in units being abated using lead hazard control grant funds is screened. Additionally, the cities of Lewiston and Auburn are organizing screening clinics for both the general public and for HeadStart. These activities are intended to increase the screening rates in these locations.

MaineCare

The Medicaid Program in Maine (MaineCare) works closely with the MCLPPP program to share data around surveillance, as well as to promote screening. Outreach activities associated with the MaineCare program includes distribution of materials to promote screening in MaineCare's periodicity mailings to individuals at risk (1 and 2 year olds), and availability of MCLPPP materials at MaineCare service centers. The objectives associated with these activities include identifying screening rates of MaineCare recipients, designing interventions and increasing screening rates for this population, and ultimately, that the appropriate children (those at risk) get screened for lead poisoning.

Medical Community

The medical community is an important partner in secondary prevention both in case management but also to promote screening. A new effort is to coordinate WIC blood anemia screenings with blood lead screenings and well child visits. This would have several advantages, including reducing the number of times a child gets blood drawn, increasing the ability to evaluate screening rates on a practice by practice basis, and increasing screening rates.

The Maine Occupational Disease Reporting System

The Occupational Disease Reporting System helps insure that children at risk get a blood lead test by coordinating with the MCLPPP to develop recommendations for screening of children whose parents work with lead. Currently the Risk Assessment Questionnaire includes questions about parental occupation, and will be modified to include information about adult hobby activities. Additionally in their work with lead poisoned adults, recommendations can be made for testing of children. This program also does follow up for elevated blood lead levels for occupationally exposed adults and can do outreach with businesses, the medical community to recognize adult lead poisoning and promote adult blood lead screenings. Additionally, they are partnering with the EPA in using the RRP trainings as a method for outreach to promote blood lead screening. The objectives associated with these activities are that blood lead testing rates for children at risk will increase and there will be a decrease in both occupational lead exposure to both adults and the children of those adults.

The Maine Department of Environmental Protections Lead Hazard Prevention Program

The Lead Hazard Prevention Program implements the training and standards for lead inspections, risk assessment, and lead abatement of Chapter 425, the *Lead Management Regulations*. In addition, Maine DEP offers technical assistance when doing field inspections. For example, should the program evaluate a construction site, and should medical monitoring be required (or recommended) this program provides an important venue for education. Additionally, the Lead Hazard Prevention Program educates workers and distributes materials associated with preventing “take home lead”. The outcomes associated with these activities include increased awareness of the need for medical monitoring among those occupationally exposed to lead and, reduced occupational poisonings.

Recipient of HUD’s Lead Hazard Control Grants (LHCG)

Recipients of the Lead Hazard Control Grants also have an opportunity to provide education and intervention when working with their contractors. The outcomes associated with these activities include increased awareness of the need for medical monitoring among those occupationally exposed to lead and, reduced occupational poisonings.

The Maine Lead Poisoning Prevention Fund (LPPF)

The Lead Poisoning Prevention Program develops and distributes (with their community partners) primary prevention materials associated with lead poisoning. These materials include information on take home lead, which promotes blood lead screening for the adults who may be exposed. This is particularly important for those self employed adults and hobbyists who may not get captured by OSHA required screening.

Surveillance (Evaluation and interpretation of data on childhood lead poisonings)

Objective 10: Provide data for case follow up.

Objective 11: Provide data to improve targeted intervention.

Objective 12: Provide data to partners.

State agencies and partners who currently have activities associated with these objectives and some of their activities supporting these objectives include:

The Maine Childhood Lead Poisoning Prevention Program (MCLPPP)

The epidemiology staff associated with the Childhood Lead Poisoning Prevention Program, with support and cooperation with the Environmental Public Health Tracking Program evaluates data on blood lead levels and screening rates in the state. This data is critical for supporting secondary prevention services (case management and promotion of screening) activities, but also serves to help identify lead poisoning risks and develop messages for primary prevention. These data are also evaluated as it relates to immigrant communities. Another outcome of these activities is making this data available to the public and to community partners through the Public Health Tracking Site, allowing for more precise targeted intervention to both increase screening rates of those at risk and, as already mentioned, to develop appropriate primary prevention messages.

The Maine Occupational Disease Reporting System

The Occupational Disease Reporting System, with support from the Environmental and Occupational Health Program's Epidemiology Program evaluates data on adult blood lead levels. This effort provides data for case follow up, targeted intervention, data reporting requirements (ABLES, CSTE, and the Occupational Health Indicators Project). Finally this data is planned to be cleaned and uploaded into the Environmental Public Health Tracking Portal in the future. These activities support secondary prevention services, are used to develop appropriate primary prevention messages and support primary prevention activities.

E. Childhood Lead Poisoning Prevention Program Work Plan

The previous section describes and displays the current activities of existing state programs as developed by the advisory council. The following section builds upon that work by using logic models to describe the program work plan for the MCLPPP. The narrative associated with the logic model tables describes how the work supports the goals identified by the advisory council. The comprehensive goals of the LeadMe Advisory Council are:

1. Reduce to zero the number of lead poisoned children less than 6 years old with blood lead levels above 10 ug/dl.
2. Reduce the number of children less than 6 years old with detectable blood lead levels.
3. Reduce the number of children over 6 years old and adults who are exposed to lead.
4. Reduce the number of adults exposed to lead through jobs and hobbies.

Logic models were used to develop work plans and activities for the following areas: Program Management, Screening, Surveillance, Strategic Partnerships, Primary Prevention, Case Management, New Mainers (recent immigrants), and transition into a healthy homes program. Each of these areas will be discussed below with their appropriate logic models attached.

Program Management Activities

The activities from a program management perspective that are relevant include the development of plans that identify directions for future work. Any plan that is developed needs an evaluation component and yearly review to revise and update as evaluation occurs and as conditions change. The major objectives for this category include developing and revising plans for screening, outreach, surveillance, case management and a plan addressing lead exposures of New Mainers (primary or secondary immigrants).

The Screening Plan has been completed for 2011 (attached as Appendix D) and is in the process of being implemented and evaluated. The outcomes associated with this plan include improved screening rates, especially in the high density areas and among the immigrant

community, better targeting of screening, better transmission of data to the medical community, and ultimately, an overall increase in screening rates.

The outreach plan is in the process of being written. The goal of an outreach plan is ultimately to identify the best strategy for reaching your target audience. Doing so involves formative research to identify what we know about the audience, identification of the proper media for reaching the audience, a mechanism for message development and testing, and finally an evaluation component of the outreach. Like all plans, yearly evaluation of the plan will ensure the objectives are being met, and that the activities are modified as circumstances change. Outcomes associated with the activity of developing an outreach plan include improved outreach activities, more focused outreach for the appropriate target audience and ultimately, increases in screening rates, decreases in lead poisonings and decreases in lead poisonings in immigrant communities in particular.

The surveillance plan is also in the process of being written and should be completed by the end of summer 2010. The goal of the surveillance plan is twofold. One is to document surveillance activities to ensure data can be provided on an ongoing basis. The second goal is to document ongoing data needs, their timeline for production and any barriers for producing that data. The outcomes of these activities include evaluation of the previous years' data and availability of that data in time for production of reports, etc. Ultimately, the outcome will be the identification of trends in the target populations that can be used to drive outreach and intervention and decreases in the numbers of lead poisonings.

The case management plan is in the process of being updated. Steps include reviewing the existing draft, modifying as needed, implementing, yearly reviewing and revising as required. Outcomes associated with this include improved case management activities, a documented plan, and an improved ability to track and evaluate case management.

Finally, considerable interest exists in coordinating our efforts around the immigrant/refugee community in Lewiston regarding lead poisoning prevention and case management. It is thought that documenting these efforts will have benefits that impact all immigrant communities and other potential high risk ethnicities. While the structure of the plan is consistent with other plans, the development of the plan will need strong participation of

stakeholders and community members to appropriately address community concerns. Additionally, activities surrounding this issue are identified in their own logic model.

Outcomes of developing the plan include improved intervention among the immigrant community, increased screening among the immigrant community and reduced lead poisonings in the immigrant community. While the current structure is focused on the Somali community (acknowledging that the Somali community itself is not one community), it is hoped that the structures developed will be applicable to other high risk communities.

It is expected that all these activities will support the comprehensive goals of the LEAdMe Advisory Council. Specifically, goals 1 and 2 will be supported by all the efforts identified, while goals 3 and 4 will be supported by some of the activities – in particular as we collaborate with the Occupational Disease Registry Program.

Objectives	Activities	Intermediate Outcomes (1-5 yrs)	Long Term Outcomes (5+ years)
1. Develop and yearly evaluate statewide screening plan	1. Screening Plan: a. Evaluate screening rates / tie into surveillance plan and schedule b. Review and Revise RA Questionnaire / tie into outreach plan c. Collaborate w/ WIC for anemia screenings d. Download BL data into IMMFACT e. Targeted outreach to provider of high risk children	Improve screening rates, especially in HD areas and among immigrant community.	Increases in screening rates
2. Develop by 2011 and yearly evaluate an outreach plan.		Better targeting of screening.	
3. Develop by 2011 and yearly evaluate a surveillance plan.		Better transmission of data to medical community.	
4. Develop by 2011 and yearly evaluate a case management plan			
5. Develop by 2011 and yearly evaluate an EJ plan	2. Outreach Plan a. Catalog scope b. Develop model c. Formative research, etc. d. evaluate	Improved outreach activities	Increases in screening rates
		More focused outreach for target audiences	Decreases in lead poisonings
	3. Surveillance Plan a. Draft from KD b. Revise and edit c. Develop schedule d. Implement and evaluate	Quicker evaluation of previous years data	Decreases in lead poisonings in immigrant communities.
		Availability of data in time for evaluation and program needs.	Identification of changes in target populations
	4. Case Management	Improved case	Decrease in lead poisonings
			Improved case management

	Plan a. Review existing state b. Develop draft plan c. Review and Revise	management activities Documented plan Improved ability to track and evaluate	activities
	5. EJ Plan a. Develop working notes b. ID potential partners and schedule summit c. Develop plan d. Implement and evaluate	Improved intervention among immigrant community Increased screening in immigrant community Reduced lead poisonings in immigrant communities	Improved intervention among immigrant community Increased screening in immigrant community Reduced lead poisonings in immigrant communities

Screening Plan

The objectives associated with the Screening Logic model include the development and review of the statewide screening plan, review and revision of the risk assessment questionnaire, collaboration with WIC to combine lead and anemia screenings, collaboration with MaineCare to promote screenings in that population, download blood lead data into the IMMPACT2 immunization registry, targeted outreach to providers of high risk individuals, and outreach to service providers such as CDS, WIC, HeadStart, etc.

The screening plan is included in Appendix X and was briefly discussed in the prior section. Other objectives include reviewing and revising the risk assessment questionnaire by 2012, where the outcomes will be to understand how the questionnaire is currently being used and based on revisions, increase the screening rates for those children who are at risk. Objective 3 is to collaborate with WIC to combine anemia and blood lead screenings to make screening more convenient, and increase screening rates.

Objective 4 is to collaborate with MaineCare to promote screening in the MaineCare population. MCLPPP is currently distributing materials via MaineCare to their population and we are sharing data to evaluate screening rates within that population. The outcomes of these activities are to improve screening rates for the MaineCare population and to modify our outreach activities based on the measures of screening rates in that population.

Objective 5 is to develop systems to download blood lead data into the state's immunization program. This would allow medical providers real time information on the status

of blood lead data for their patients and improve the ability to identify screening rates on a practice specific level.

Objective 6 is to provide targeted outreach to providers who serve high risk individuals. There are areas in the state where the rates of lead poisoning are higher than surrounding areas and the state average. Often those locations are served by a limited number of providers for whom direct and intensive outreach is practical. It is expected that this will increase screening rates in the high risk areas and possibly improve screening rates (if they need to be improved). Objective 7 is to increase outreach to service providers who interact with our high risk populations (such as MaineCare, WIC, etc.).

Comprehensive goals 1 and 2 will clearly be supported by activities around screening. Comprehensive goals 3 and 4 will be support by some of these activities – in particular as they increase awareness of lead poisoning risks and identify children exposed by occupational exposure to lead.

Objectives	Activities	Intermediate Outcomes (1-5 yrs)	Long Term Outcomes (5+ years)
1. Develop and review statewide screening plan 2. Review and Revise RA Questionnaire by 2012	1. Screening Plan: a. Evaluate screening rates b. Develop surveillance plan and schedule. c. Review and adjust as data suggests	Improve screening rates, especially in HD areas and among immigrant community. Better targeting of screening.	Increases in screening rates
3. Collaborate w/ WIC for anemia screenings 4. Collaborate with MaineCare to promote screenings. 5. Download BL data into IMMPACT 6. Targeted outreach to providers who serve high risk individuals	Review and Revise RA Questionnaire 2a. Gather formative research and background on RA questionnaire. 2b. Work with med comm to modify message. 2c. Tie into outreach plan to medical community. 2d. Distribute and evaluate new questionnaire	Information on use of RA questionnaire Use of RA questionnaire Increased screening of children at risk	Increased screening of children at risk
7. Outreach to	3. Collaborate with WIC for anemia	Improved screening rates for BL.	Increased screening rates

Service Providers in Maine	screenings	Less loss of patients when traveling from doc to lab.	
	4. Collaborate with MaineCare to promote Screening 4a. Distribute materials through Maine b. Mailing of screening tipsheet to MaineCare members c. Share screening data.	Improved screening rates for MaineCare recipients. Modifications to plan based on data feedback.	Increased screening rates
	5. Download BL data into IMMPACT a. Review materials from OIT	Docs gain ability to view BL data. Ability to ID screening rates at providers	Increased screening rates
	6. Targeted outreach to providers serving high risk clients a. ID providers b. Schedule lunch seminars (or other outreach) c. Develop curriculum d. Present e. Evaluate and repeat.	Increased screening rates in high risk areas. Increased screening rates for low performing providers.	Increased screening rates
	7. Outreach to Service Providers a. ID partners, CDS, WIC, HS, etc. b. Schedule meeting times c. Develop curriculum d. Present e. evaluate and repeat.	Increased screening rates for high risk individuals	Increased screening rates

Surveillance Plan

The goal of the surveillance plan is to identify current data analysis practices, methodologies and direction for new research. The surveillance logic model is currently driven by four objectives. The first objective has already been discussed – and is the development of a

surveillance plan for the state. The plan will be reviewed on a yearly basis and modified based on data and activities. The outcomes will be the evaluation of previous year’s data, and availability of the data for reports and activities.

The second major objective of the surveillance logic model is to provide data and data analysis for the lead program and the Environmental Public Health Tracking data portal (<https://tracking.publichealth.maine.gov/>). The outcomes of this activity will be the production of analyzed data for both the MCLPPP program and for the users of the data portal. Ultimately this will be used to identify changes in our target populations and decreases in lead poisonings. The 3rd objective is to respond to public requests for data. This is an ongoing service and activity to help individuals find data for their use that is not currently evaluated and available on the data portal. Finally, and most importantly, objective 4 is to explore the feasibility of new data measures – measures which are currently not being tracked but which may provide information of use for future activities. This will include identifying potential barriers to evaluating these data (for example, they don’t exist), and if needed, developing strategies for overcoming these barriers (for example, figuring out ways to collect the data). Obviously, if preliminary analysis suggests that the type of information available is not useful, then the activities will not be pursued.

Examples of these types of analyses include exploring the data to learn about the characteristics of the individuals with blood lead levels between 5 and 9 ug/dl, kids between 7 and 16 years old (who are currently not tracked), and exploring the case management database and the EBLLs within those who are in MaineCare (not those who have an EBLL as it relates to their MaineCare status as is currently done).

Surveillance activities will clearly support goals 1 and 2 in that by evaluating data on screening rates and poisoning we identify strategies and interventions for primary prevention. Additionally, these surveillance activities are expected to support goals 3 and 4, in particular as there are plans to evaluate the data for poisonings that occur between the age range defined by the Childhood Lead Poisoning Prevention Program (up to age 6) and the Occupational Disease Registry Program (>17 years).

Objectives	Activities	Intermediate Outcomes (1-5 yrs)	Long Term Outcomes (5+ years)
1. Develop and	1. Surveillance Plan:	Quicker evaluation of	Identification of changes in target

review statewide surveillance plan 2. Provide data for lead program and data portal 3. Respond to public requests for data 4. Evaluate feasibility for new data analysis	a. Develop surveillance plan and schedule. b. Review and adjust as data suggests	previous years data Availability of data in time for reports. Completed Surveillance plan	populations Decrease in lead poisonings
	Provide data for MCLPPP and portal 2a. Data Prep 2b. Medicaid Match and geocode 2c. Data Analysis 2d. Dissemination	Quicker evaluation of previous years data Availability of data in time for reports.	Identification of changes in target populations Decrease in lead poisonings
	3. Respond to public data requests.	Data available to public and partners	
	4. Evaluate feasibility of new data analysis 4a. Explore data around BLLs from 5-9 ug/dl 4b. Explore data in “Alldata” files for EBLLs for kids between 7 and 16 years old. 4c. Explore case management data. 4d. Explore EBLLs by MaineCare	Identification of new opportunities and risk factors.	More efficient targeting of resources to eliminate lead poisoning.

Strategic Partnerships Plan

The Strategic Partnerships logic model describes partners with whom the MCLPPP program is working to further mutual goals. Partners include the Department of Environmental Protection, MaineCare, the Maine State Housing Authority and other Lead Hazard Control Grant recipients, WIC, Home Visiting Programs, Head Start and the Healthy Homes Collaborative. Not all programs are included in this effort – there are some, such as the Maine Emergency Management Association where coordination occurs when needed, but at a much smaller scale. The Department of Environmental Protection is a significant partner with the MCLPPP program. Not only are certain primary prevention activities developed by DEP and partially supported with LPPF funds, but the DEP has an important role in maintaining professional standards and work practices related to lead hazard identification and safe abatement practices. With

MaineCare, as stated previously, the objective is to work with MaineCare to improve screening rates in the MaineCare population. This will serve to ensure those children at risk are appropriately screened as well as monitor the impact of those efforts and any changes in risk factors. Collaboration with MSHA and LHCG recipients will serve to ensure timely and effective abatement of units – especially those where children are poisoned, with the long term objective of a total decrease in the number of hazardous homes.

Collaboration with WIC will result in combined anemia and blood lead testing and uploading of blood lead data into the state’s immunization database. Collaboration with home visiting programs will be used to develop trainings and curricula to incorporate lead awareness and prevention to home visiting activities. HeadStart collaboration focuses on data sharing, with the objective being to improve HeadStart’s abilities to identify the need for blood lead testing amongst their incoming enrollees. Finally, the MCLPPP program is continuing to collaborate with the Healthy Homes Collaborative – with the objective of ensuring lead is appropriately represented in any healthy homes activities initiated by other state programs.

It is expected that these collaborations will support the LEAdMe goals of 1 and 2 in particular. Goals 3 and 4 will also be supported by collaborations with DEP, MSHA/LCHG recipients, in particular in that it will support worker education of lead safe work practices. The collaboration with the Occupational Disease Registry Program will clearly support goals 3 and 4.

Objectives	Activities	Intermediate Outcomes (1-5 yrs)	Long Term Outcomes (5+ years)
<p>1. Continue to collaborate with DEP on LPPF funded activities and abatement activities.</p> <p>2. Partner with MaineCare to improve screening rates in the MaineCare population.</p> <p>3. Work with MSHA and LHCG Recipients to ensure timely and effective abatement of units.</p>	<p>1. DEP</p> <p>1a. Continue to fund and support Lead Safe Housing Registry.</p> <p>1b Continue to fund and support trainings.</p> <p>1c. Continue to collaborate on reporting of non-lead safe work practices (Emergency Provisions)</p> <p>1d. Work with DEP in EPA enforcement activities.</p> <p>1e Develop procedure for notifying DEP of abatement orders for</p>	<p>Development of a Lead Safe Housing Registry</p> <p>Safe work practices</p> <p>Enforcement</p> <p>Prioritized oversight of abatements</p>	<p>Decrease in lead poisonings through primary prevention.</p> <p>Decrease in number of hazardous homes</p>

<p>4. Partner with WIC on combined Anemia/Blood lead testing and IMMPACT</p> <p>5. Collaborate with Home Visiting Programs to incorporate lead and other issues to home visits</p> <p>6. Work with HeadStart programs to make sure entering HS children have blood lead tests.</p>	<p>oversight.</p> <p>2. MaineCare 2a. MCLPPP participate in EPSTD meetings 2b. Develop MOU/DSA with MaineCare. 2c. Work with WIC and MaineCare on reimbursements 2d. Sharing of data with MCLPPP to improve screening rates 2e. Coordinated outreach to improve screening rates</p>	<p>MaineCare screening rates will be identified and interventions designed.</p> <p>MaineCare screening rates will be increased.</p>	<p>Increased screening rates</p>
<p>7. Continue to participate in Healthy Homes Collaborative</p>	<p>3. MSHA/LHCG Recipients 3a. Continued meetings at LEadME 3b. Continue to meet w/ MSHA on status of abatements. 3c. Continued contact with other LHCG Recipients on status of projects</p>	<p>Abatement of houses where children poisoned occurs safely</p>	<p>Decrease in # of hazardous homes</p>
	<p>4. WIC 4a. Continued outreach with WIC to ensure blood lead screening for WIC recipients. 4b. Partner with WIC on combining blood lead and anemia testing. 4c. Partner with WIC on getting anemia and blood lead data into IMMPACT.</p>	<p>Increased screening rates</p>	<p>Increased screening rates</p>
	<p>5. Home Visiting Programs 5a. Identify potential home visiting partners. 5b. Develop appropriate curricula and catalog of trainings.</p>	<p>Increased awareness of lead hazards and other hazards in housing;</p> <p>Increased screening for lead hazards; addressing hazards before children poisoned;</p>	<p>Decrease in lead poisoned children; Increased awareness of lead and other hazards</p>

	5c. Provide trainings. 5d. Evaluate and modify.		
	6. HeadStart 6a. Expand data sharing with other HeadStart programs. 6b. Develop data sharing agreement	Screening rates among early HeadStart will increase.	Screening rates will increase.
	7. Healthy Homes Collaborative 7a. Continue to collaborate.	Develop strong relationships in HH subjects. Continue to develop and think about collaborative efforts around HH	Strong collaborative HH program in the state of Maine Coordinated outreach and messaging around HH issues.
	8. Occupational Disease Registry Program 8a. Coordinate on cases involving take home lead exposure. 8b. Continue to coordinate primary prevention messages where appropriate.	Coordinated messaging around risks of occupational exposure to lead and childhood lead poisoning. Coordinated management of risks in cases involving take home lead exposure.	Decrease in number of children poisoned by take home lead exposure.

Primary Prevention Plan

In the category of Primary Prevention (preventing children from becoming exposed to lead) there are a total of 7 objectives currently identified by the logic model, many of which are specified by the Lead Poisoning Prevention Fund. These objectives include continuing to fund and evaluate the community partners programs, which includes the activities of managing the lead dust testing program in apartments, providing and distributing MCLPPP materials, provide trainings and participate in the evaluation plan. The results of these activities will be increased awareness of lead hazards, reduced rates of lead poisonings, increased screenings for lead hazards, and a decrease in lead poisoned children.

The second objective is to maintain the distribution of the brochure on lead risks to pregnant women and parents of 1 and 2 year olds. The outcomes of this activity include the same outcomes as discussed in the first objective. The 3rd objective is posting a brochure and poster in retailers who sell paint removal supplies. This objective will have the outcomes of preventing home renovation related poisonings and identification of lead hazards before a child

gets poisoned. Objectives 4 and 5 involve supporting DEP in their development of the lead safe housing registry and on trainings to support lead safe work practices.

The objectives associated with these will include easier identification of lead safe rental properties and prevention of work practices that produce lead hazards. Objective 6 is to develop a mechanism to allow home visitors to intervene on lead issues. This objective overlaps with the strategic partnership logic model and will have the objectives of decreasing the number of lead poisoned children and decrease the number of hazardous homes.

Finally objective 7 is to develop and maintain outreach mechanisms to the immigrant community. This objective is discussed in greater detail in the New Mainers logic model and will have the outcomes of improving outreach in the immigrant community, better coordination of primary prevention and decreasing lead poisonings in the immigrant community.

Most of these primary prevention objectives and activities will directly support the LEAdMe Comprehensive Goals.

Objectives	Activities	Intermediate Outcomes (1-5 yrs)	Long Term Outcomes (5+ years)
1. Continue to fund and evaluate the Community Partners Programs (LPPF)	1. Community Grants Program a. Manage Dust Testing of Apts b. Provide materials for community outreach events c. Distribution of Materials d. Provide trainings e. Guidance on Eval. Plan	Increased awareness of lead hazards in Maine; Reduced rates of lead poisonings in HD areas.	Decrease in lead poisoned children; Increased awareness of lead hazards and renovation techniques;
2. Maintain the distribution of the brochure/flyer on lead risks to pregnant women and parents of 1 and 2 year olds (LPPF)		Increased screening for lead hazards; addressing hazards before children poisoned;	
3. Post a brochure and poster in retailers who sell paint removal supplies (LPPF).	2. Targeted Mailing a. To parents of 1 and 2 yr olds b. to OB/GYN for distribution	Increased awareness of lead hazards in Maine; Reduced rates of lead poisonings in HD areas.	Decrease in lead poisoned children; Increased awareness of lead hazards and renovation techniques;
4. Support DEP in the development of a Lead Safe Housing Registry (LPPF/DEP)		Increased screening for lead hazards; addressing hazards before children poisoned;	
5. Support DEP in the trainings on lead safe	3. Posting in retailers who sell paint removal supplies a. Pilot in Augusta b. Evaluate	Prevention of home renovation related poisonings. ID of lead hazards before a	Decrease in lead poisoned children; Increased awareness of lead hazards and renovation

work practices (LPPF/DEP)	c. Modify if needed d. Expand to rest of state.	child gets poisoned	techniques;
6. Develop a mechanism to allow to home visitors to intervene on lead issues (CLPPP/LPPF)	4. Lead Safe Housing Registry a. Develop b. Promote	Easier identification of lead safe rental properties	
7. Develop and maintain outreach mechanisms to the Immigrant Community (CLPPP/LPPF)	5. Trainings on lead safe work practices	Activities associated with weatherization do not produce lead hazards Lead paint are identified during weatherization activities	Decrease in hazardous homes Decrease in occupational lead poisonings
	6. Outreach to home visitors a. Identification of potential partners b. Development of training programs. c. Ongoing trainings d. evaluation and revision		Decrease in lead poisoned children; Decrease in hazardous homes
	7. Outreach to Immigrant Communities 7a. Through summit catalog activities that are currently occurring. 7b. Identify gaps in outreach messages and techniques. 7c. Implement and evaluate.	Improved outreach among immigrant community Better coordination of primary prevention Decreased lead poisonings in immigrant community	Decreased lead poisonings in immigrant community

Case Management Plan

There are 4 major objectives of the case management logic model, updating the case management plan, providing case management to children less than 6 years old with blood lead levels ≥ 15 ug/dL, providing case management to children less than 6 years old with blood lead levels between 10 and 14 ug/dL, and to develop an evaluation plan to measure the effectiveness of case management activities.

Like many of the focus areas, the goal of the case management plan is to have a document which identifies strategies and directions for the case management activities. This will

be reviewed on a yearly basis to evaluate activities and outcomes. Appropriate changes will be made at that time.

A major goal of case management activities is to provide services to children who have been poisoned. Due to limited funds, those children with levels above 14 ug/dL are offered complete environmental testing, and nursing case management whereas, those with blood lead levels between 10 and 14 ug/dL have limited environmental services. The literature suggests there are impacts on children’s neurodevelopment at levels below 10 ug/dL but that environmental interventions may not be effective. As discussed in the surveillance logic model, evaluating the data for blood lead levels below 10 ug/dL and for children between 6 and 16 is an objective.

The outcomes of these activities are focused on providing high quality care to lead poisoned children and their families, to reducing the number of hazardous houses by abating those where children become poisoned, and insuring blood lead levels of those children who have lead levels in the 10 to 14 ug/dL range decrease at an appropriate rate rather than stay stable or increase.

One final goal is to develop a formal evaluation plan for the activities surrounding case management. While there have been informal evaluation measures in the past, a more formal evaluation of all activities, especially given the number of new initiatives would be very helpful.

Activities and objectives in the case management area are expected strongly support comprehensive goals 1 and 2 as identified by the LEAdMe Advisory Council. Goals 3 and 4 will be partially supported – in particular though the identification of children poisoned by “take home lead” activities and the subsequent coordination with the Occupational Disease Registry Program.

Objectives	Activities	Intermediate Outcomes (1-5 yrs)	Long Term Outcomes (5+ years)
1. Develop/Update Case Management Plan	1. Case Management Plan a. Review existing state b. Develop draft plan c. Review and Revise	Documented and consistent protocols for dealing with EBLLS	Consistent case management for clients.
2. Provide Case Mgmt Services for children <6 years old with EBLLS >= 15 ug/dL			
	Provide Case Mgmt >=15 ug/dl a. Nursing Services	Children get high quality services when lead poisoned.	Children get high quality services when lead poisoned.

3. Provide case mgmt

<p>services for children <6 years old with EBLLS >=10 - 14</p> <p>4. Design Evaluation Plan for Case Management Services</p>	<p>b. Coordination w/ Med Provider c. Environmental Referral d. monitoring blood leads e. develop capacity for identifying availability of medical intervention expertise for very high eblls f. Improve immigrant/ESL interventions. g. Provide reports + Interp and tech assistance for families and nurses. h. Issue abatement orders to LLs i. Follow through with compliance j. Relocation if needed.</p>	<p>Houses where children poisoned get abated and are no longer hazardous.</p>	<p>Houses where children poisoned get abated and are no longer hazardous.</p>
	<p>3. Case Mgmt >=10 - 14 ug/dl a. Mailing to parent b. Referring nursing services c. Lead Dust Testing Kit d. Improve immigrant/ESL interventions e. technical assistance with test results f. Partial inspections for persistent "B"s + owner Education g. Monitoring persistent B's</p>	<p>No "B" cases become "persistent" B cases.</p> <p>No " B" cases turn into "A" cases.</p> <p>Homeowners ID lead hazards and learn how to manage them.</p>	<p>Less "A" cases.</p> <p>Homes with lead hazards less common.</p>
	<p>4. Evaluation Plan a. Evaluate effectiveness of nursing referrals b. evaluate effectiveness of mailings and LDT Kits to B cases c. Track BLLs on Cases</p>	<p>Understanding of barriers to providing quality case management.</p> <p>Addressing and overcoming those barriers.</p>	

	d. ID data elements that we cannot currently evaluate for inclusion into HHLPPS e. Evaluate effectiveness of partial inspections. f. Evaluate full inspections.		
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New Mainers Lead Poisoning Prevention Plan

A continuing concern amongst the MCLPPP program has been providing appropriate primary and secondary prevention services to immigrant communities in Maine. New surveillance suggests increasing rates of blood lead poisoning. For that reason, the MCLPPP program has developed a separate initiative to evaluate and improve outreach to new Mainers – immigrants who may not speak English as a second language.

The objectives of this initiative includes developing effective primary prevention activities to the immigrant community, maintaining effective case management activities, continued surveillance of trends in these communities, maintaining the ability to identify new trends in poisonings, and monitoring and increasing blood lead screening rates in these communities.

The objective of improving primary prevention activities include local community members and stakeholders catalog activities, identify gaps, fill those gaps and implement and evaluate. The outcomes of those activities will include improved outreach, better coordination, and a decrease in lead poisoning in the new Mainer community.

Improving case management activities is important as information about causes of lead poisoning will influence the primary prevention message. The approach will need to be similar, but outcomes will be that poisoned immigrant children will get effective intervention and that lead poisonings in the immigrant community will decrease.

The objective of continued surveillance of trends in the immigrant community will serve to measure effectiveness of our primary prevention and secondary prevention activities ultimately resulting in a decrease it the lead poisonings in this community. Additionally, this objective is tied into continuing surveillance objectives in the Surveillance Logic Model.

Finally, there are activities planned or ongoing that are designed to increase screening rates amongst the immigrant community. This objective will involve collaboration with community members and stakeholders to both identify screening rates and identify appropriate methods to improve screening rates.

While the LEAdMe Advisory Council’s comprehensive goals to not specifically address immigrant populations, efforts around this effort identified below will certainly support comprehensive goals 1 through 4.

Objectives	Activities	Intermediate Outcomes (1-5 yrs)	Long Term Outcomes (5+ years)
1. Develop effective primary prevention activities among the immigrant community. 2. Maintain effective case management activities among the immigrant community. 3. Continued surveillance of trends among immigrant community. 4. Ensure we maintain the capability to ID EJ issues through surveillance program 5. Monitor and increase screening rates among immigrant communities.	Primary Prevention 1a. Through summit catalog activities that are currently occurring. 1b. Identify gaps in outreach messages and techniques through a collaborative approach with the community. 1c. Implement and evaluate.	Improved outreach among immigrant community Better coordination of primary prevention Decreased lead poisonings in immigrant community	Decreased lead poisonings in immigrant community
	2. Effective case management activities 2a. Catalog current state 2b. Work with 1 to ID approaches 2c. ID mystery sources.	Poisoned immigrant children get effective intervention.	Decreased lead poisonings in immigrant community
	3. Surveillance 3a. Incorporate EJ into surveillance plan. 3b.	Information to feed back into items 1 and 2. Improved activities for 1 and 2	Decreased lead poisonings in immigrant community
	4. Ability to ID EJ issues a. Develop surveillance plan and schedule.	Capture of additionally EJ issues	
	5. Screening Rates a. ID current screening rates	Improve screening rates amongst immigrant populations.	Increased screening rates

	b. Outreach to providers to encourage screening c. Incorporate screening message into primary prevention activities d. Revise and evaluate		
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Healthy Homes Transition Plan

The National CDC is in the process of transitioning funded lead programs into Healthy Homes programs. Hence a logic model has been developed to plan for that transition. Objectives within that logic model include continued participation and collaboration with the Healthy Homes Collaborative, transition the LEAd-Me advisory council to the Healthy Homes advisory council, apply for healthy homes funding and to continue the ongoing integration efforts with in the CDC Environmental Health Division around radon, well water safety, carbon monoxide and lead.

This transition and the activities surrounding it will partially support the comprehensive goals identified above. While the comprehensive goals are specific to lead, lead will be a significant portion of any healthy homes activities.

Objectives	Activities	Intermediate Outcomes (1-5 yrs)	Long Term Outcomes (5+ years)
1. Continue to participate and collaborate with Healthy Homes Collaborative	1. Healthy Homes Collaborative a. Continue to participate in meetings b. Coordinate shows c. Planning	Stronger collaboration among participants in HH subject areas. Increased awareness of healthy homes issues among public.	change in behavior that focus on healthy homes subjects
2. Transition LEAd-Me to Healthy Homes Advisory Council	2. Transition LeadME to a Healthy Homes Advisory Council a. Recruit members b. Develop scope of work c. Develop activities plan d. Develop logic models for specific	Coherent documented plan for addressing Healthy Homes' issues. Educated advisory council that can intervene on multiple healthy homes issues.	Development of a strong Healthy Homes program.
3. Apply for CDC funding for Healthy Homes			
4. Continue integration w/ well water, lead, CO and			

radon	activities		
	3. Apply for CDC Funding a. Develop needs assmt b. formative research c. develop proposal	Funded Healthy Homes program.	Development of a strong Healthy Homes program.
	4. EOHP Integration a. Extend lead model to other HH issues b. continue to develop good quality materials with a HH branding c. formative research on HH issues d. integration of well water, CO and radon into a HH strategic plan.	Understanding of the scope and nature of barriers to a healthy homes message. Strategies to address those barriers.	Development of a strong Healthy Homes program.

F. Conclusions

Background on lead poisoning in Maine

The data shows that while screening rates for children are relatively stable, rates of EBLL have been decreasing over time. It is also the case that certain areas of Maine have very high screening rates, but low rates of EBLL (e.g., Aroostook Public Health District). Spatially, lead poisoned children are not randomly distributed across the state. There are locations that have higher rates of lead poisoned children than others. Those locations also have different characteristics, such as being more likely to be rental properties. That said, on a statewide level, approximately 50% of the cases where an Environmental Inspection occurs happens in a rental vs. homeowner occupied dwelling. Renovations, especially by landlords, homeowners or occupants appear to be a significant risk factor for EBLL. While very few children have been found to have EBLL as a result of renovations performed by contractors, the number of children identified with lead poisoning caused by “take home lead” from a household member’s job is increasing. Other risk factors include living in a pre-1950 house, occupation, or, if living in a pre-1950 house, having painted and/or hard to open windows and painted floors and/or gaps in floors. Risk factors for adult lead poisoning includes occupations in painting and contracting,

bridge painting and preparation, and manufacturing or non-occupational exposures through renovations and hobbies such as reloading.

Existing state infrastructure

There are a number of government and nongovernmental agencies that work together to address lead poisoning prevention and management for both adults and children. Some of those agencies include the Lead Poisoning Prevention Fund which is part of the MCLPPP and addresses primary prevention activities, and MCLPPP which focuses primarily on secondary prevention activities both of which reside in the Maine CDC. The Lead Hazard Prevention Program resides in the Department of Environmental Protection and has programs aimed at prevention of release of lead to the environment, training, technical assistance, educational outreach, and management and licensing of lead industry workers.

HUD funded Lead Hazard Control Programs are targeted to mitigating lead hazards in housing. Currently the cities of Portland and Lewiston/Auburn and the State of Maine (through the Maine State Housing Authority) have HUD grants. Also within the Maine CDC is the Occupational Disease Reporting System – a program structured to address primary prevention and management of adult lead poisonings.

There are also a number of agencies that are partners with lead poisoning prevention and management but for whom lead is not their main objective. Some of these groups act as partners to get the lead poisoning prevention message out, others help with intervention once lead poisoned children are identified. These include the Health and Environmental Testing Laboratory, MaineCare, the medical community, Public Health Nursing, WIC, and HeadStart. Other organizations that also partner with the various lead programs include the Lead Poisoning Prevention Fund Contractees (Healthy Maine Partnerships), landlords, property owners and local housing authorities, immigrant advocacy groups, realtors and others.

Comprehensive Goals, Objectives and Activities

In developing the Elimination Plan the LEAd-ME advisory council identified comprehensive goals for the activities surrounding the prevention of lead poisoning. They include:

Reduce to zero the number of lead poisoned children less than 6 years old with blood lead levels above 10 ug/dL.

Reduce the number of children less than 6 years old with blood lead levels less than 10 ug/dL.

Reduce the number of children over 6 years old and adults who are exposed to lead.

Reduce the number of adults exposed to lead through jobs and hobbies.

The advisory council then developed specific objectives to support these goals and developed activities models to identify, of the various stakeholders identified above, how their activities support the above goals.

Childhood Lead Poisoning Prevention Program Work Plan

Increasing the focus towards workplans, the MCLPPP then developed logic models to specifically identify current and future activities which support the goals and objectives identified in the previous section. These logic models will act as a workplan for the coming years. Logic models were developed for program management, surveillance, strategic partnerships, primary prevention, case management, New Mainers (or immigrant/high risk communities), and a logic model to being the transition of the MCLPPP into a healthy homes program.

It is expected that the elimination plan and the associated logic and activities models will act as a plan for future work in lead poisoning prevention. Additionally, this process and model will likely be used in developing a similar plan for healthy homes interventions.

APPENDICES:

- A. LEAd-ME Members**
- B. LLRA – List of Lead Related Acronyms**
- C. Activities Models**
- D. Screening Plan**