

*Strategic Plan for the Elimination of
Childhood Lead Poisoning
In Maine*

Childhood Lead Poisoning Prevention Program

Environmental Health Unit

Bureau of Health

Maine Department of Human Services

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Introduction

The State of Maine is fully committed to the elimination of lead poisoning in its young children. This commitment was strong enough to get written into state law in 1992. MSRA, Title 22, Chapter 252, § 1314-A states, “The goal of the State in the area of lead poisoning is to eradicate childhood lead poisoning by the year 2010 through the elimination of potential sources of environmental lead.” This goal is emphatically echoed in the Healthy Maine 2010 Environmental Lead goal 8-1, “Eliminate elevated blood lead levels in children.” Supportive HM2010 goals include: Increase lead inspections and abatement in pre-1960 housing, increase blood lead testing especially in Medicaid-enrolled children, and decrease the proportion of children with blood lead levels $\geq 20 \mu\text{g}/\text{dl}$ and the proportion of children with blood lead levels $\geq 10 \mu\text{g}/\text{dl}$. With collaborative partnerships, acquisition of adequate resources, and deliberate application of its strategic plan, Maine intends to meet its goal of eliminating childhood lead poisoning.

We believe that, given sufficient resources and stakeholder resolve, the elimination of childhood lead poisoning is an achievable goal. We have already seen a decline in elevated blood lead levels in Maine children over the past 10 years, at a time when our blood lead screening rates have increased, particularly in the most vulnerable population group of one-and-two year olds. Maine will use its blood lead testing and surveillance data to monitor the incidence and prevalence of childhood lead poisoning, assess for exposure risks in young children, and track progress towards our goal.

The MCLPPP is grateful to the members of its Advisory Council for their ideas, commitment, enthusiasm, patience and passion in developing a Maine strategic plan to eliminate childhood lead poisoning. With such a diverse group of stakeholders, it has been gratifying to

witness their dedication, respect for one another and unique ability to reach agreement on the multitude of details contained in this plan. We look forward to continuing our work with and through the Advisory Council to achieve our mutual goals.

A. Maine's Strategic Plan for the Elimination of Childhood Lead Poisoning

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. The importance of developing the plan is:

The development of a strategic plan to eliminate childhood lead poisoning as a public health problem is an important tool:

- To help communities focus efforts and resources towards a common goal
- To gauge progress and
- To help leaders to determine when and if they should change activities and refocus resources

The elimination plan, to be completed by August 1, 2004, must be developed with an advisory work group of committed stakeholders. CDC guidance states, "The applicant must establish an advisory workgroup or committee (or expand the scope of its current advisory group) to develop and implement a jurisdiction-wide childhood lead poisoning elimination plan." The group should also "serve to monitor the progress of the elimination plan, and to leverage resources and enhance cooperative efforts towards this goal" (CDC, Program Announcement, 2003).

Maine's response to the CDC mandate

The first step in developing Maine's strategic plan for eliminating childhood lead poisoning was to expand and strengthen our existing Advisory Council. In the summer of 2003, the Maine Childhood Lead Poisoning Prevention Program (MCLPPP) solicited commitments from existing members to work with us on the elimination plan. A few members retired from the Council, others renewed their commitment. We then recruited new members from key organizations both

private and public, as well as parents affected by lead exposures. Our 20-member Advisory Council now consists of representatives from:

- Maine Department of Environmental Protection
- Maine State Housing Authority
- Environmental Advocacy Groups
- Public Health Nursing
- WIC
- Headstart
- Local Public Health Departments
- Local Lead Hazard Control Programs
- Parents of lead-poisoned children
- Maine Childhood Lead Poisoning Prevention Program staff

See Appendix for list of Advisory Council members

The first meeting of the reconstituted Advisory Council was held in September 2003. Stirling Kendall, a professional facilitator, was recruited from the University of Southern Maine, Muskie School to facilitate the meetings. Information was initially presented to the Advisory Council on current screening and prevalence rates, housing data, and the existing state infrastructure for addressing lead poisoning and lead hazard issues.

In developing the strategic plan, the consensus of the group was to develop a logic model to diagram the overall elimination plan. Goals and objectives would be determined from the logic models. Dr. Brenda Joly, a logic model expert was enlisted from the Maine Center for Public Health to guide the Council in its development of the logic model.

The Logic Model is used to describe the sequence of events that will lead to the achievement of long-term goals. The Logic Model addresses the elimination plan as a whole and focuses on interim and long-term outcomes. The impact of activities on the elimination plan is clearly indicated by describing the expected causes and effects of each strategy. The Logic Model also describes collaborative activities and how partners work together to reach their mutual goals. The Logic Model is useful as a graphic, visual model for partners and stakeholders to examine periodically as we collectively re-evaluate our progress towards our elimination goal.

The Council members agreed on four specific areas of focus: Health, Housing, Other Exposure Sources, and Community Mobilization. Four work groups were established, consisting of members of the Council with a special interest in the component area. Each work group was assigned to draft the details for their component. An Advisory Council Listserve was set up to facilitate communication among members between meetings.

Components of the Strategic Plan

In its guidance document, CDC advises that, at a minimum the elimination plan should contain:

- a. A Mission Statement
- b. A Statement of Purpose
- c. Background on the jurisdiction's childhood lead poisoning problem.
- d. A detailed assessment of the lead poisoning problem that is specific to the jurisdiction.

This assessment should be based upon all available data sources (e.g. blood lead surveillance, housing, Medicaid, tax assessor, census, etc.) that may assist the committee in determining the approximate number of children under six who have elevated blood

lead levels. This estimate will help to measure the change in the number of children at risk as the applicant moves towards elimination.

Mission Statement

Maine's Advisory Council deliberated on the wording of a mission statement.

Discussions centered on the applicability of the Mission Statement. Was it a statement of the overall state mission or was it to be a statement of the Advisory Council's mission? The Council members finally agreed on the following statement to define the mission of the Advisory Council with regard to the elimination plan.

Our (the Lead Advisory Council's) mission is to provide guidance to the State of Maine to eliminate childhood lead poisoning.

Statement of Purpose

Likewise, the Advisory Council determined that the statement of purpose should reflect the perceived purpose of the Advisory Council with regard to the elimination plan. Council members agreed on the following Statement of Purpose.

The purpose of this Advisory Council is to use our knowledge of lead exposure sources and vulnerable populations to design strategies and identify resources that will eradicate lead poisoning in Maine children.

B. Background on the Jurisdiction's Lead Poisoning Problem

Defining the problem: examination of baseline data

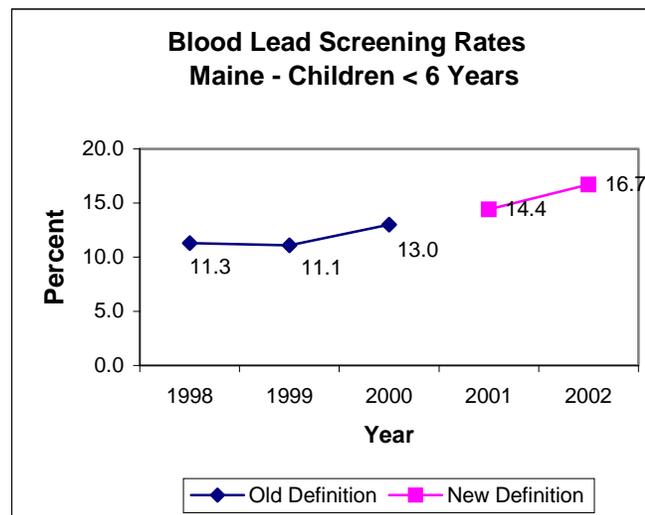
The first step in determining the key strategies and resources necessary to achieve the elimination of childhood lead poisoning is to define the existing problem in Maine. This was

done by examining blood lead screening rates and elevated blood lead levels, geographic distribution, and risk factors unique to lead exposure in Maine.

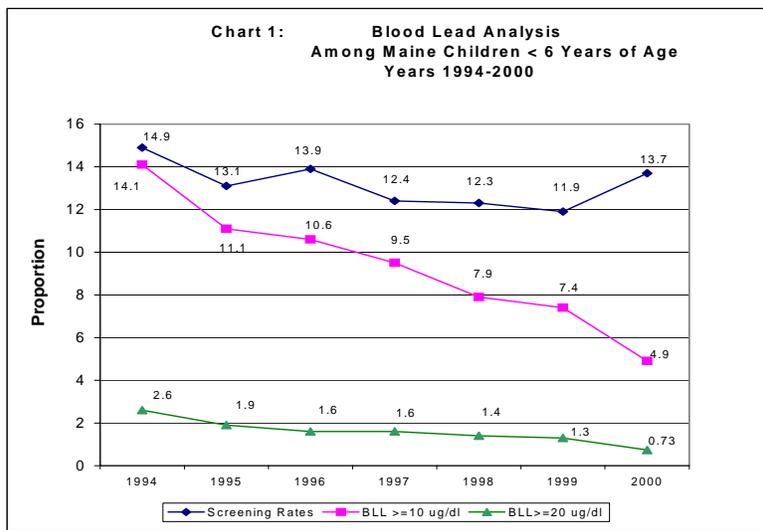
Blood lead screening rates and elevated blood lead levels

Maine's blood lead screening rates in children less than 6 years of age have increased in the past few years, giving us a more accurate picture of childhood lead poisoning in Maine. Comparing screening rates is somewhat complicated by a change in the definition of screening in 2001. Since 2001, Maine has adopted the new CDC Surveillance Branch definition of a screening test. Although the discrepancies are small and do not substantially affect the overall rates, they must be noted.

In 1998, Maine screened 11.3% of all children less than 6 years of age. By 2002, the screening rate had risen to 16.7%.



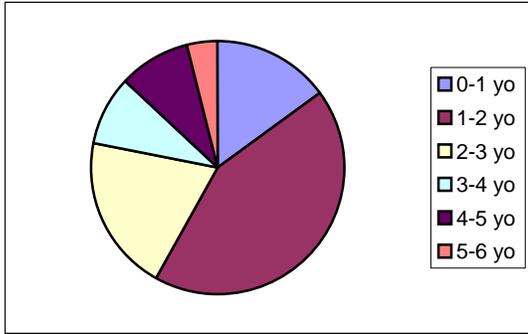
While the blood lead screening rates have been increasing, the proportion of children with elevated blood lead levels has steadily declined. In 1994, 14.1% of all children less than 6 years of age who received a blood lead screening test had a lead level that was $\geq 10 \mu\text{g}/\text{dl}$. In 2002, this proportion was down to 3.9%, almost one-fourth of the 1994 rate.



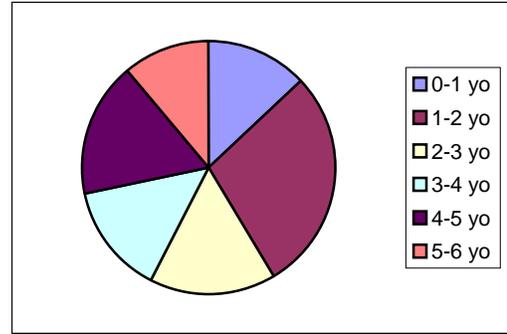
*Population estimates for 1999 are preliminary. 1999 Population estimates used for year 2000 analysis.
Source: Population estimates – ODRVS, Maine Bureau of Health 1990 Census Lead data – HETL, Maine Bureau of Health

The significance of these changes becomes even more striking when we turn our attention to the one-and-two year old population. According the National Health and Nutrition Examination Survey (NHANES) III, one-and-two year old children are the most vulnerable ages for lead poisoning. In Maine, a study of 1994-1999 lead screening data revealed that one-and-two year old children in Maine were also more likely to have elevated blood lead levels (*Childhood Lead Exposure in Maine 1994-1999*, Maine Medical Assessment Foundation, 2000).

In 1997, based on NHANES III data, CDC recommended, targeted screening for all one-and-two year old children. Since 2000, screening guidelines for Maine health care providers have emphasized routine assessment of the risk of lead exposure for all Maine children at the ages of one- and- two years old. Accordingly, health care providers have shifted the focus of their screening efforts to one-and-two year olds. The proportion of one-and-two year olds screened a part of the total number of children screened was 63% in 2002, compared to 43% in 1994.



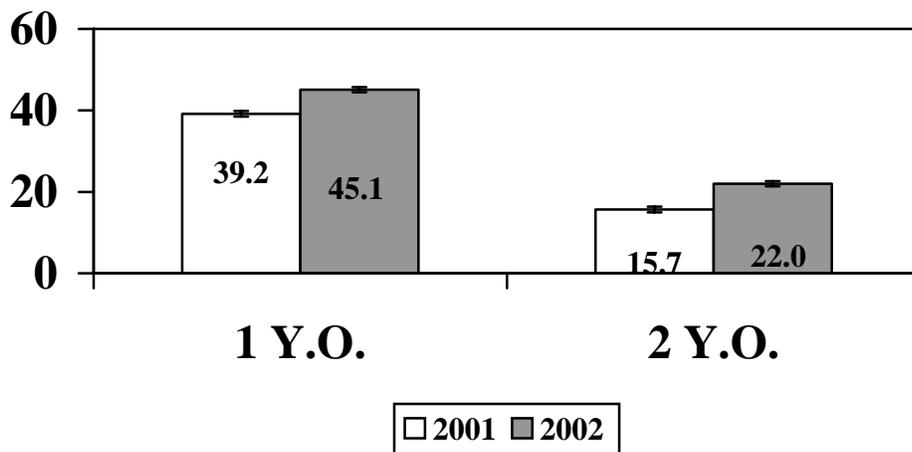
2002 Distribution of Screening Tests by Age



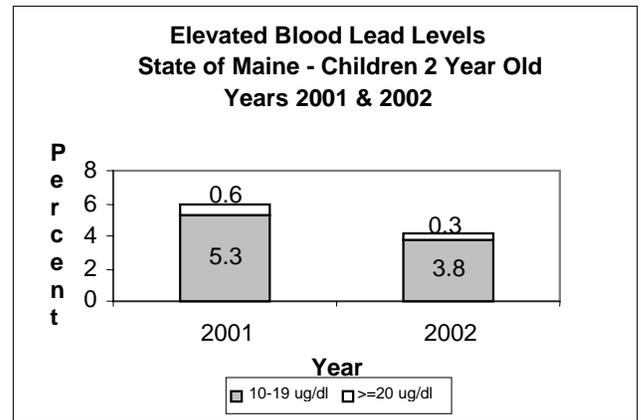
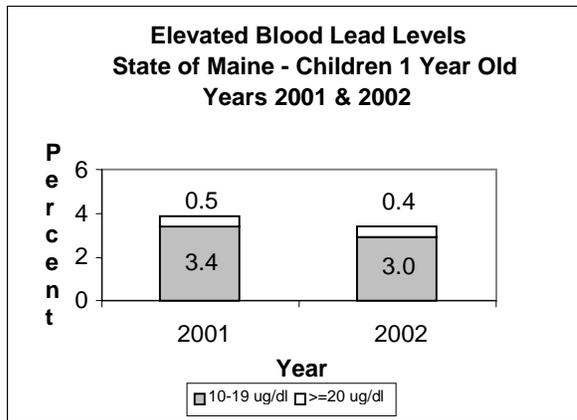
1994 Distribution of Screening Tests by Age

In 2001, the state law was changed to require blood lead screening of all one and two year old children enrolled in Medicaid, reiterating the federal mandate. The law also now requires a blood lead screening test for all non-Medicaid-enrolled one and two year olds, unless their healthcare provider can demonstrate via risk assessment questionnaire that the child is not at risk for lead exposure.

In 2001, Maine screened 39.2% of its one-year-olds and 15.7% of its two-year-olds, with a blood lead screening test. By 2002, these percentages had risen to 45.1% of one-year-olds and 22.0% of two-year-olds.



Since focusing our efforts on one-and-two year olds, Maine is now seeing a decrease in lead poisoning one-and-two year old children. In 2001, 3.9% of the one-year olds tested and 5.9% of the two-year-olds tested had elevated blood lead levels; by 2002, 3.4% of the one-year-olds and 4.1% of the two-year-olds had elevated blood lead levels.



Defining high risk for lead exposure in Maine

In addition to looking at age differences, the NHANES III report defined high risk factors for childhood lead exposure as: residence in pre-1949 housing, poverty, and black or Hispanic race. The convergence of any of these factors increased the risk of exposure exponentially. As a large, essentially rural state, the challenge in Maine is to identify the risk factors that apply to rural states in general, and to Maine children specifically.

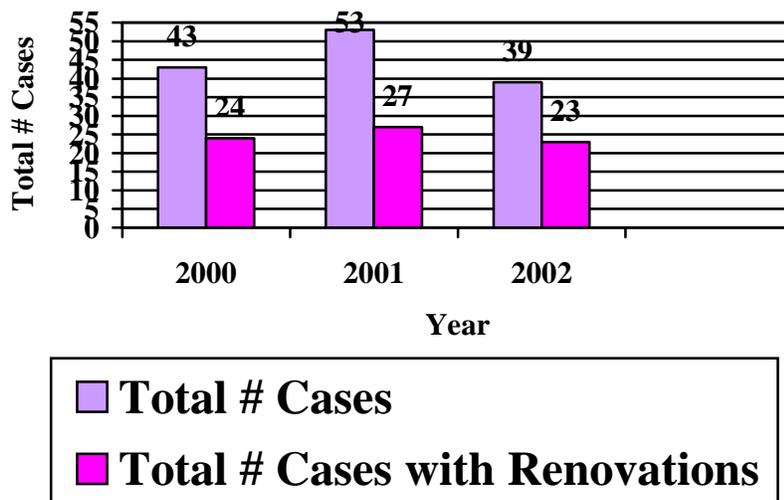
By examining data collected during environmental investigations for lead poisoned children between 2000 and 2002, the MCLPPP identified factors that appear common in lead poisoned children in Maine. Eighty-seven percent (87%) of these children were living in homes constructed prior to 1950. The primary lead hazards identified were lead-based paint and lead

contaminated dust. The next most common exposures appeared to be from lead-contaminated soil and old furniture with lead-based paint.

**Environmental Investigations (≥ 20 ug/dl)
Years 2001 & 2002**

Description	Number of cases
Total inspections offered	89
# No inspections	9
# Inspections performed	80
Lead paint building component hazards	59
Interior only	2
Exterior only	1
Both interior & exterior	56
Non-lead paint hazards	63
Dust	53
Soil	24
Furniture	3
Water	3
Dishes	2
Miniblind	1
No lead hazard found	13

Notably, 65% (3-year average) of these homes had reported recent or ongoing renovations or remodeling activity. Uncontrolled renovation, re-painting or remodeling work can release high levels of toxic lead-contaminated dust into the home environment.



Maine is known to have one of the highest home ownership rates in the country. It could be that a high proportion of young Maine families are purchasing old “fixer-upper” homes, proceeding to do the work themselves without knowledge of the proper precautions, and unknowingly exposing their young children to toxic levels of lead-contaminated dust particles.

Additional data collection

According to the 2000 census, Maine’s race and ethnicity composition is 96.5% white, making it the state with largest white population rate in the country. Nonetheless, Maine has a growing immigrant and refugee population, particularly in its larger cities of Portland, Lewiston, Auburn, and Bangor. To date, the MCLPPP has not had the capability of collecting race and ethnicity data on the children screened for lead exposure. Maine hospitals, laboratories and physicians are not in the habit of reporting on race and ethnicity. In partnership with the state public health laboratory, the MCLPPP is developing a plan to encourage and support race and ethnicity reporting in the medical community.

Ongoing data analysis efforts

In order to prioritize efforts and direct resources to areas of highest need, the MCLPPP is working to identify potential high-risk regions in Maine. Using census tract-level data from the US Census Bureau, we have mapped the separate distributions of pre-1950 housing and of children less than 6 years of age. We have also mapped the product of the pre-1950 housing proportion and the number of children <6, giving a rough estimate of the number of children living in pre-1950 housing, assuming that this age group is evenly distributed among the housing stock. A separate spatial analysis at the larger census unit of Public Use Microdata Areas (PUMAs) indicates a generally inverse relation between pre-1950 housing and the density of one and two year old children actually living in older housing stock. The PUMA analysis has the

benefit of enumerating actual numbers of children living in pre-1950 housing, but the geographic units are too large to use for effective targeting of resources, or for reliable prediction at a smaller scale. Indeed, we suspect the heterogeneous nature of Maine's rural population could render either assessment invalid, at least for some areas of the state. Additional investigation is needed to determine if either set of distributions is predictive of observed lead poisoning cases and lead exposures. *See Appendix for maps.*

Risk Assessment Validation Study

Maine has launched a validation study of its risk assessment questionnaire. The questions used today by Maine pediatric healthcare providers to determine the risk of lead exposure are based on national standard questions. This research study is designed to assess the accuracy of individual questions, or a set of questions, in identifying children at risk for lead exposure and subsequent lead poisoning. Useful questions for Maine children may or may not include the national standard questions, and may also include questions on risk factors unique to Maine children. This study is being conducted between 2003-2004 in a random sampling of pediatric health care provider offices throughout Maine. In addition to compiling a useful Maine-specific risk assessment questionnaire for use by healthcare providers, the study will also afford the researchers another opportunity to identify geographic areas of high risk based on non-ecological data.

Existing state infrastructure

In assessing the extent of the childhood lead poisoning problem in Maine, it was necessary for the Advisory Council members to also understand the statewide infrastructure that already exists to address both primary and secondary prevention efforts. Understanding this foundation also helps to develop realistic strategies and activities for the elimination plan.

Secondary Prevention

In public health terminology, secondary prevention refers to efforts to reduce the progression of a public health problem after it has occurred. Applied to childhood lead poisoning, this means the early identification and treatment of lead poisoning to minimize the long-term physiological and cognitive damage. 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 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 state public health 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 nursing care coordinator manages the referrals to public and community health nurses throughout the state for all children with confirmed blood lead

levels of 15+ $\mu\text{g}/\text{dl}$. 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. The nurse specialists all participated in the CDC-sponsored regional training on case management and attend appropriate state and regional workshops to stay current with issues and standards of care. MCLPPP also coordinates quarterly conference calls for the lead poisoning nurse specialists, to share information and updates, and for mutual problem sharing.

Medical consultants, under contract with MCLPPP, offer consultations to all primary care providers who care for lead poisoned children on the protocols in the clinical management of lead toxicity. Every primary care provider treating a child with a confirmed blood lead level of 20+ $\mu\text{g}/\text{dl}$ receives a packet of information from the medical consultants on the current standards of practice for treating lead poisoning in young children. The medical consultants also provide training in lead poisoning treatment to pediatric residents.

Licensed lead inspectors are designated through cooperative agreements with the MCLPPP to conduct environmental investigations in homes where children are identified with confirmed blood lead levels of 20+ $\mu\text{g}/\text{dl}$. 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. Seven of these lead inspectors are employed through Community Action Agencies (CAA) while a two others are with private enterprises. CAA agencies 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 property owners 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.

Primary Prevention

“Primary prevention activities prevent children from being exposed to lead. Especially significant are actions to reduce residential lead hazards before children are born, are sufficiently mobile to be at increased risk for exposure to household lead, or before children move into a home with lead hazards” (Alliance to End Childhood Lead Poisoning, 1004). A variety of partner agencies have collaborated to identify and address primary prevention needs in Maine.

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 this provision. Through their work, the DEP ensures a competent and qualified lead workforce. Additionally, the DEP coordinates training and workshops to non-licensed personnel in an effort to promote lead-safe work practices.

The Maine State Housing Authority (MSHA) is the recipient of two rounds of HUD Lead Hazard Control Program (LHCP) grant funding. The LHCP provides \$3.37 million

from federal and state grants to alleviate lead paint hazards in homes of low-to-moderate income Maine people. Participating CAP agencies deliver the program for MSHA. The LHCP inspected 530 homes and remediated 230 homes during their first grant cycle. The LHCP received a second round of funding that will result in additional home lead inspections and remediations. 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) grant funds. 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. Since 1996 the MSHA, Portland, Lewiston and Auburn housing departments combined have brought a total of \$8.5 million into Maine for lead hazard control projects in low-to-moderate income housing.

In 1998, the MCLPPP and DEP collaborated to design a practical process to ensure that all Maine childcare facilities were inspected and rendered lead-safe prior to licensing and certification. Maine state law requires that all licensed childcare facilities be certified lead-safe. Through the facilitation of the MCLPPP and DEP lead programs; the Maine Office of Day Care Licensing initiated a lead inspection process that included preliminary visual inspections and rating of potential lead hazards. If indicated, a follow-up inspection by a licensed lead inspector is performed. In addition, the Maine Office of Day Care Licensing commits funding for the remediation of lead hazards in childcare facilities. Today, no childcare facility in Maine is licensed without lead-safe certification.

While Maine is successful in completing lead abatement in homes where lead-poisoned children are identified, the time lag averages eight (8) months, with a potential for ongoing lead-contaminated dust exposure during that period. Numerous lead inspection reports indicate that lead-contaminated dust is a major source of lead exposure for Maine children.

To address the temporary issue of lead-contaminated dust hazards, the MSHA partnered with the MCLPPP to design 3 separate programs focused on reducing levels of lead-contaminated dust. The first is a HEPA-filtered vacuum rental program. HEPA-filtered vacuums effectively trap and remove lead-contaminated dust that other household vacuum cleaners miss or emit back into the environment. HEPA-filtered vacuums, purchased by MSHA, are available for rent by parents and landlords from the MCLPPP and the cities of Portland, Lewiston and Auburn. The goal is to have rental HEPA-filtered vacuums available in all CAP agencies that administer the LHCP grants.

Secondly, a “Bucket Brigade” project was initiated to provide families and homeowners with cleaning supplies and guidance in removing lead-contaminated dust to families and homeowners. With supplies purchased by MSHA and an instruction manual designed by MCLPPP staff, Public and Community Health Nurse specialists were trained in specialized methods for cleaning lead-contaminated dust. These nurses distribute the cleaning supplies and provide in-home instruction statewide, wherever high levels of lead-contaminated dust and lead-poisoned children are identified. Finally, the MSHA authorizes professional cleaning services in homes with high lead-dust contamination and children with high lead levels, whenever the family is incapable of effectively cleaning up the leaded dust themselves.

Education Initiatives

Public education has traditionally been the cornerstone of Maine's primary prevention efforts. Much of the ongoing effective strategies have involved collaborative efforts and pooling of resources between the MCLPPP, DEP, MSHA and the City of Auburn. Brochures created by each of the agencies contain a similar prevention message. Partners in PHN, CAA agencies, WIC and Headstart programs, healthcare providers, and local public health and housing departments in Portland, Lewiston, Auburn, and Bangor distribute all agency brochures, along with national EPA and HUD brochures.

The DEP, MSHA and MCLPPP also pooled their resources to produce and air two public service announcements (PSA's) focused on reducing uncontrolled renovations in older homes with potential lead hazards. Tapes of these PSA's, aired in the spring and fall of 2001, are available to communities and organizations statewide for local airing.

The MSHA funded an extensive education project for Headstart workers. Since many of the Headstart-enrolled families live in older, poorly maintained housing units, their children are especially vulnerable to lead exposure. Headstart staff was trained, by a University of Southern Maine health education specialist to identify risky home situations, encourage lead screening, and help parents to locate resources to prevent lead exposure.

The MSHA recently purchased three sets of a "Dusty the Dog" large display on avoiding lead hazards for young children. These popular displays are located at Children's Museums in three of Maine's cities.

Finally, the MCLPPP, DEP, and MSHA each maintain a lead-specific website with links to each other and national websites.

C. A Strategic Work Plan

Maine's strategic plan is based on a response to known risk factors, builds on existing systems and infrastructure and incorporates recommendations from its Advisory Council and commitments from key partners. Goals and objectives were developed from the detailed logic models for each of our four component areas: Housing, Health, Community Mobilization, and Other Sources of Exposure.

Comprehensive Goals

Defining elimination goals the framework and the vision for the development of Maine's strategic plan. All goals, objectives and strategies must be developed with the intent of achieving the elimination goals. The first comprehensive goal developed by the Advisory Council is in keeping with the CDC elimination goal and states that we will:

- "Reduce to 0 the number of Maine children less than 6 years of age with blood lead levels \geq 10 ug/dl". Council members added two additional elimination goals to this primary goal.

The state of Maine also seeks to

- "Reduce the number of Maine children less than 6 years of age with blood lead levels between 5-10 ug/dl". This goal is established in response to recent studies suggesting a negative cognitive impact for children with blood lead levels in this range.

- "Reduce the cumulative lifetime lead exposure for Maine residents".

This recognizes that lead exposures do not end at age 6 and that cumulative lifetime exposures to lead can damage neurological and other body systems, thus diminishing the quality of life for affected persons.

Long-term goals

"Develop five-year (long-term) goals that address at a minimum, the key areas of Surveillance, targeting high-risk populations (to include Medicaid-eligible children), and Primary Prevention."

(CDC guidance)

Long-term (five-year) goals were developed for each of the primary component areas designated in the Maine strategic plan: Health, Housing, Community Mobilization, and Other Exposure Sources. They include the key areas of targeting high-risk populations and primary prevention.

Component Area: Housing

For prevention efforts to be successful, this component must receive a high degree of attention and resources, particularly an adequate funding stream. Additionally, attitudes must change to accept lead-safe housing status as the norm; and all contractors, renovators, painters, and homeowners must understand and adopt lead-safe work practices. Finally, homeowners must become aware of methods to reduce lead exposures during home renovations.

Primary Prevention goal: All Maine housing that may be occupied by families with young children will be brought to at least a lead-safe status and maintained as lead-safe using standard lead-safe work practices.

Component Area: Health

This Component Area focuses on assuring that all Maine children receive appropriate risk assessment and testing for lead exposure, that health care providers and parents understand the importance of screening, and that lead poisoned children receive adequate follow-up services.

Targeting high-risk populations goal: All Maine children at risk for lead exposure will receive appropriate and adequate risk assessments, screening tests and follow-up care. All Maine

residents will take appropriate actions based on an understanding that lead exposure poses a significant health risk.

Component Area: Community Mobilization

Communities, parents and the public must have a vested interest in the creation of lead-safe environments for other strategies to be effective. Special population groups must be included in the process, such as Maine's Native American tribes and our small but growing populations of refugees and immigrants.

Primary Prevention Goal: To develop a network to support community-based groups in their efforts to actively reduce childhood lead poisoning.

Component Area: Other exposure sources

A lead poisoning elimination plan, to be effective, must take into consideration and prevent all sources of lead exposure. This component area focuses on lead exposures in soil, water and occupational take-home lead, as well as decreasing the amount of lead released into the environment by disposal of lead-containing products, and phasing out unnecessary use of lead whenever effective and affordable alternatives are available.

Primary Prevention goal: Other sources of lead exposure to young children will be identified and reduced.

Surveillance

Surveillance goal and objectives were developed to complement the four component area goals and objectives. Surveillance results will help to guide the direction and focus of strategies in the other four component areas.

Surveillance goal: Five-year goal: Sufficient surveillance data will be available to guide prioritization, resource allocation, policy development, and assist in monitoring the progress towards the elimination goals.

Annual Objectives

CDC guidance states,

“Support each five-year goal with 12-month (annual) objectives. The objectives should be detailed sufficiently to demonstrate that they are specific, measurable, achievable, realistic and time-phased.”

Building on general agreement for goals and primary component areas, the Advisory Council work groups designed the details of a Logic Model for each component area, including strategies and activities, and the resources and inputs needed to accomplish them. Annual objectives are developed from the Logic Model design for each component area goal.

Component Area: Housing

Five-year goal: All Maine homes with young children in residence will be brought to at least a lead-safe status and maintained as lead-safe using standard lead-safe work practices.

<i>Year 1 Objectives</i>	<ul style="list-style-type: none"> By January 1, 2006, the MCLPPP and strategic partners will identify the extent and location of high-risk housing in Maine.
	<ul style="list-style-type: none"> By January 1, 2006, the MCLPPP and strategic partners will review all Maine laws that impact lead-safe housing and determine gaps in housing laws and policies.
	<ul style="list-style-type: none"> By January 1, 2007, the number of homes associated with a lead-poisoned children in which lead hazard remediation has been completed will be increased by ensuring adequate funding sources and removing barriers to resource access.

<i>Year 2 Objectives</i>	<ul style="list-style-type: none"> By January 1, 2007, the number of homeowners and parents who understand the dangers of uncontrolled renovations in old homes will increase through targeted education and collaborative efforts.
	<ul style="list-style-type: none"> By January 1, 2007, the number of community workers, including public health nurses and family outreach workers, certified to conduct dust clearance testing will increase.
<i>Year 3 Objectives</i>	<ul style="list-style-type: none"> By January 1, 2008, the number of homes NOT associated with a lead-poisoned child, in which lead hazard remediation has been completed will increase by ensuring adequate funding availability, and understanding and acceptance by homeowners and landlords.
	<ul style="list-style-type: none"> By January 1, 2008, the number of people who have completed lead-smart renovator training will increase.
	<ul style="list-style-type: none"> By January 1, 2008, the number of people aware of the dangers of exposure to household lead-based paint and dust will increase through collaborations with other housing programs such as first-time home buyer classes.
<i>Year 4 Objectives</i>	<ul style="list-style-type: none"> By January 1, 2009, all homeowners and landlords in pre-1978 housing will understand and utilize lead-safe work practices and maintain residences at a lead-safe level.
	<ul style="list-style-type: none"> By January 1, 2009, adequate laws will be in place to enforce lead safety in rental units.

Component Area: Health

Five-year goal: All Maine children at risk for lead exposure will receive appropriate and adequate risk assessments, screening tests and follow-up care.

<i>Year 1 Objectives</i>	<ul style="list-style-type: none"> By January 1, 2006, all pediatric health care providers will recognize that lead poisoning is still a problem in Maine and understand the risks of lead exposure across all income levels.
	<ul style="list-style-type: none"> By January 1, 2006, parents of preschool children will recognize that lead poisoning is still a problem in Maine and believe in the importance of lead screening.

	<ul style="list-style-type: none"> • By January 1, 2006, an MCLPPP validation study will be completed and determination will be made on appropriate risk assessment questions for Maine children.
<i>Year 2 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2007, the number of children with blood lead levels $\geq 20 \mu\text{g/dl}$ will be reduced to 0.
	<ul style="list-style-type: none"> • By January 1, 2007, the MCLPPP will determine the nature and extent of high-risk population groups and geographic areas.
	<ul style="list-style-type: none"> • By January 1, 2007, the MCLPPP and strategic partners will identify barriers to screening for both health care providers and parents.
	<ul style="list-style-type: none"> • By January 1, 2007, the MCLPPP and the Bureau of Medical Services will develop a system to identify Medicaid-enrolled children who are not receiving a blood lead screening test.
	<ul style="list-style-type: none"> • By January 1, 2007, the MCLPPP in partnership with the medical community will disseminate information on appropriate Maine lead exposure risk assessment questions to all pediatric health care providers.
<i>Year 3 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2008, the strategic partners will develop and implement a plan to reduce the barriers to screening, based on parent & health care provider surveys and focus group discussions.
	<ul style="list-style-type: none"> • By January 1, 2008, the MCLPPP and BMS will develop and implement a plan to ensure that all Medicaid-enrolled one-and-two year olds receive a blood lead screening test.
	<ul style="list-style-type: none"> • By January 1, 2008, other child provider groups will understand how to assess for lead exposure risk in young children and agree to routinely assess and encourage lead screening.
	<ul style="list-style-type: none"> • By January 1, 2009, routine risk assessments for lead exposure will be conducted by other child provider groups, such as WIC, Headstart, day care providers, Healthy Families, Child Development Services (CDS), Parents as Teachers.

<i>Year 4 Objectives</i>	<ul style="list-style-type: none"> By January 1, 2009, all pediatric health care providers will ensure appropriate and adequate lead risk assessments and screening.
	<ul style="list-style-type: none"> By January 1, 2009, all lead poisoned children will receive long-term follow-up assessments and interventions through the school system and developmental service agencies.

Component Area: Community Mobilization

Five-year goal: Community-based coalitions of diverse representation will be developed who are invested in creating lead-safe communities.

<i>Year 1 Objectives</i>	<ul style="list-style-type: none"> By January 1, 2006, strategic partners will identify ways that communities are affected by lead hazards (cost-benefits).
	<ul style="list-style-type: none"> By January 1, 2006, strategic partners will identify invested, local community partners.
<i>Year 2 Objectives</i>	<ul style="list-style-type: none"> By January 1, 2007, strategic partners will have held discussions with all potential community groups to elicit input on community coalition building.
	<ul style="list-style-type: none"> By January 1, 2007, strategic partners will develop a strategic implementation plan for community coalition groups.
<i>Year 3 Objective</i>	<ul style="list-style-type: none"> By January 1, 2008, strategic partners will develop and provide guidelines for a coalition plan, activities and existing resources.
<i>Year 4 Objective</i>	<ul style="list-style-type: none"> By January 1, 2009, strategic partners will convene a state conference of coalition representatives.

Component Area: Other Exposure Sources

Five-year goal: Other sources of lead exposure to young children will be identified and reduced.

<i>Year 1 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2006, the number of residents who understand testing and interim controls for lead-contaminated soil will increase.
	<ul style="list-style-type: none"> • By January 1, 2006, the number of residents who perform a first draw water test for lead will increase.
<i>Year 2 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2007, the number of residents who run their water before using and/ or install a water filter on systems with high lead levels will increase.
	<ul style="list-style-type: none"> • By January 1, 2007, strategic partners will review TRI data on lead emissions from boilers to identify opportunities for reductions in releases of lead to the environment.
	<ul style="list-style-type: none"> • By January 1, 2007, strategic partners will create and make available to the public consumer guide on lead other toxins in consumer products.
	<ul style="list-style-type: none"> • By January 1, 2007, the MCLPPP and strategic partners will create a system for identifying and screening children of workers with elevated blood lead levels.
<i>Year 3 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2008, Maine law will define as Universal Waste and require recycling of electronics that have a circuit board.
	<ul style="list-style-type: none"> • By January 1, 2008, strategic partners will perform alternative analyses for products that contain lead: plumbing fixtures, wiring, vinyl windows, computers cables, ammunition, solder, flashing, wheel weights, non-residential lead paint (industrial, marine, commercial)
	<ul style="list-style-type: none"> • By January 1, 2008, the availability of training for employers on OSHA lead requirements will increase.
	<ul style="list-style-type: none"> • By January 1, 2008, the number of referrals to OSHA for lead exposures will increase.
	<ul style="list-style-type: none"> • By January 1, 2009, the number of residents purchasing non-lead products will increase.

<i>Year 4 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2009, the number of employers complying with OSHA lead standards will increase.
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Component Area: Surveillance

Surveillance data is critical to the routine monitoring of the impact and success of activities and strategies. Surveillance has been used by MCLPPP to monitor day-to-day operations, to prioritize and direct resources, evaluate program effectiveness, and develop appropriate policies. Maine is fortunate to have a complete blood lead screening and testing database. State law mandates that all blood lead analyses for children less than 6 years of age be conducted only at the state public health laboratory. The blood lead testing database is child-specific and includes demographic information as well as information on residence and health care provider. Unique identifiers are assigned to each child. Additional components to Maine’s surveillance system will help to monitor lead poisoning in high-risk population groups and to track progress towards our elimination goals.

Five-year goal: Sufficient surveillance data will be available to guide prioritization, resource allocation, policy development, and assist in monitoring progress towards the elimination goals.

<i>Year 1 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2006, the MCLPPP and the Bureau of Medical Services (BMS) will create a system to match blood lead screening data with the Medicaid-enrolled database.
	<ul style="list-style-type: none"> • By January 1, 2006, the MCLPPP will identify high-risk geographic areas and population groups.
<i>Year 2 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2007, the MCLPPP will create an internal NEDSS compatible database system.
	<ul style="list-style-type: none"> • By January 1, 2007, the MCLPPP and strategic partners will review and analyze the results of case management interventions.

<i>Year 3 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2008, The MCLPPP will explore database matching with other high-risk child population groups such as WIC.
	<ul style="list-style-type: none"> • By January 1, 2008, the MCLPPP will perform a trend analysis on blood lead screening data.
<i>Year 4 Objectives</i>	<ul style="list-style-type: none"> • By January 1, 2009, the state IMPACT system for immunization registration will include blood lead screening information.
	<ul style="list-style-type: none"> • By January 1, 2009, the MCLPPP will have a database system that is capable of matching occupational lead exposures with its childhood lead screening database.

Specific strategies and activities for each of the component areas are detailed in the Logic Models, included in the appendix. The next phase for the Advisory Council will be to develop a detailed work plan, with timelines, indicators, and designated persons who will take the lead for each of the initiatives.

Annual Evaluation Plan

CDC guidance states, "Include a plan to annually evaluate progress towards elimination. This plan should specify who will conduct the evaluation, what data sources and other information will be used to assess progress and how the information will be used, a timeline for conducting and presenting annual evaluations to the work group and CDC, and how the evaluation results will be used to improve progress towards elimination." Maine will develop evaluation measures in each of its four component areas. The conclusions drawn from the evaluation will provide the basis for changes in the focus and approach of the elimination plan.

Who will conduct the evaluations

Health: For health information, MCLPPP will analyze screening and follow-up care data.

MCLPPP will coordinate with Maine's Medicaid agency, the Bureau of Medical Services, to analyze screening data for the Medicaid-enrolled population.

Housing: Housing data will be analyzed by the Maine Department of Environmental Protection (DEP), the Maine State Housing Authority and Lead Hazard Control Program grantees in Portland, Lewiston and Auburn.

Other exposure source data will be collected and analyzed by the Maine DEP.

Information on the progress of community mobilization will be collected by MCLPPP.

What data sources and other information will be used to measure progress and how the information will be used

Indicators are identified for each of the four component areas in Maine's elimination plan.

- Health Component: MCLPPP blood lead screening datasets will be used to measure screening and lead poisoning prevalence rates. In addition, periodic health care provider chart reviews, conducted by Public Health Nurses, will help us to understand the extent to which health care providers conduct periodic risk assessments and blood lead screening tests. MCLPPP will also coordinate with the Bureau of Medical Services to accurately measure the blood lead screening rate in Medicaid-enrolled children.
- Housing Component: Maine's Lead Hazard Control grant recipients: the MSHA and the cities of Portland, Lewiston and Auburn, collect data on the number and locations of housing structures that have been abated. In addition, other programs in Maine have trained their workers in lead-safe work practices; therefore, data on homes that have had remediation

through the state weatherization program and other state and federally-funded housing rehabilitation programs help to gauge the status of Maine homes.

The Maine DEP collects data on lead inspections and the attendees at lead training sessions, including lead inspectors, lead abatement contractors, lead-smart renovators, and lead sampling technicians. This helps us to understand the number and distribution of trained workers across the state.

A review of state and federal funds available for lead hazard control and maintenance of lead-safe homes helps to estimate the amount of work that can be completed.

A review of state statutes and rules is necessary to determine the amount of enforcement that is available for the maintenance of lead-safe homes.

- Other sources of exposure: Since many of the initiatives in this area are contingent on state standards and statutes, a review of state laws and regulations are the measure of progress for this component area. Surveys will be used to measure consumer awareness, access and use of lead-safe products.
- Community Mobilization: Measures in this component area will be both qualitative and quantitative. Discussions with community representatives will include their assessment of attainment of their own goals and objectives. Focus groups and key informant interviews will assist in determining the residents' perceptions and behaviors around lead hazards. Objective measures in the community will include the number of identified lead poisoned children and the number of lead-safe homes.

Timeline for conducting and presenting annual evaluations to the Advisory Council and to CDC

Quarterly lead screening and elevated blood lead level reports are compiled by MCLPPP for CDC and can be shared with the Advisory Council at their request. MCLPPP's annual surveillance report will also be shared with Advisory Council members.

Information on Maine's lead hazard reduction efforts, the number of lead-safe homes, the number of lead training programs and certified lead workers, will be collected on an annual basis and shared with Advisory Council members and the CDC. An annual review will also be conducted of changes in state housing statutes and regulations, along with annual review of funding availability.

Members of the Advisory Council will meet regularly with community coalition representatives, and prepare a progress report and a needs assessment. Surveys, focus groups and key informant interviews will be held by January 1, 2006 and again by January 1, 2008 to assess progress. A review of state statutes and policies around other sources of lead exposure will take place by January 1, 2006 and January 1, 2008.

How evaluation results will be used to improve progress towards elimination

The Advisory Council members will review the evaluation results with stakeholders at least annually. The evaluation results will be used to measure progress towards the goal of elimination by tracking the prevalence of childhood lead poisoning in Maine. Trend analyses of both screening and lead poisoning rates will allow us to determine how quickly we are advancing towards our goal. Analysis of the distribution of lead poisoned children will help us to focus our efforts in the areas or populations where lead poisoning is still a problem.

An analysis of housing data, including the amount and distribution of lead-safe housing, funding availability and parent and landlord perceptions of the importance of lead-safe housing,

will assist the council members in determining priority needs: funding, laws, incentives, increased trained workforce, etc. This is an essential step in resource re-allocation to the domains of highest need. This will also assist the Advisory Council in determining if new strategies or approaches are needed.

Eliminating lead exposures from lead-based paint and dust is an enormous step towards ending childhood lead poisoning. However, as long as lead exposure is still possible from other sources, we will never reach our goal of eliminating all lead poisoning. Therefore, a review of national literature will help to identify other sources of lead exposure that must be addressed through education and/or regulation. Workers who do not use lead-safe work practices have the potential to take home lead-contaminated dust, inadvertently exposing their children. If reports indicate an increased exposure to take-home leaded dust, efforts must be increased to ensure worker compliance with OSHA lead-in-construction standards.

Finally, community coalitions will be apprised of the results of other evaluation measures. This affords community advocates the opportunity to increase local efforts in areas of highest concern.

A table summarizing Maine's evaluation plan is included in the appendix.

Appendix

Advisory Council Member List

Map: Lead Screening Prevalence by County

Map: Average Elevated Blood Lead Levels by County

Map: % Structures Pre-1950 by County

Map: % Children Aged 1 & 2 in Pre-1950 Housing by County

Evaluation Table

Logic Models

- Housing Component

- Health Component

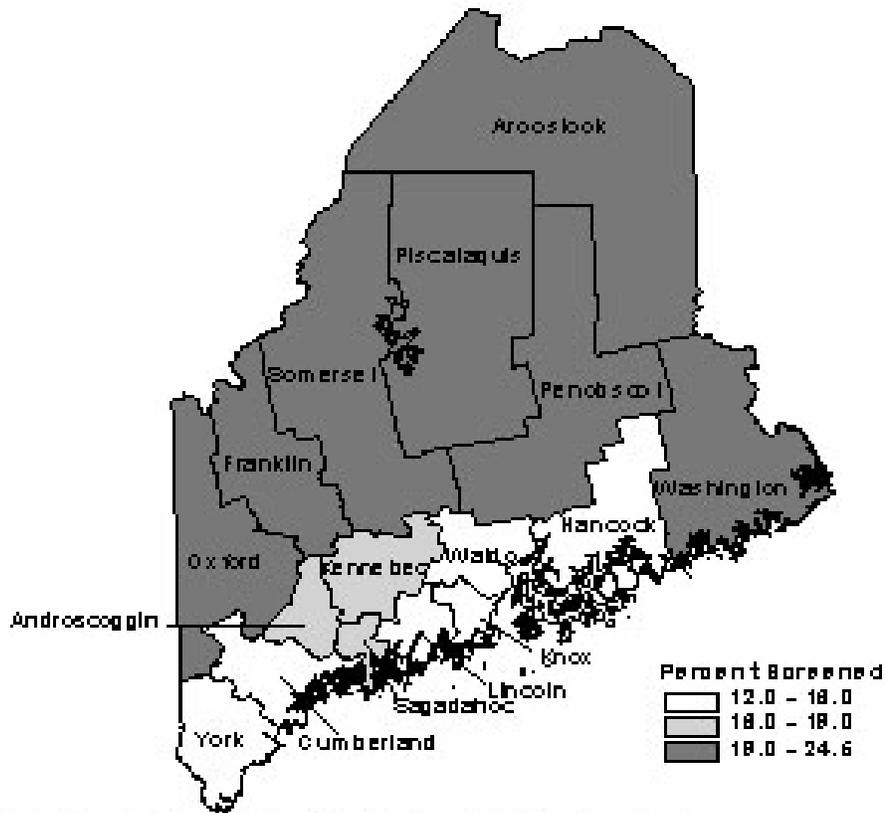
- Other Exposure Sources Component

- Community Mobilization Component

Advisory Council Member List

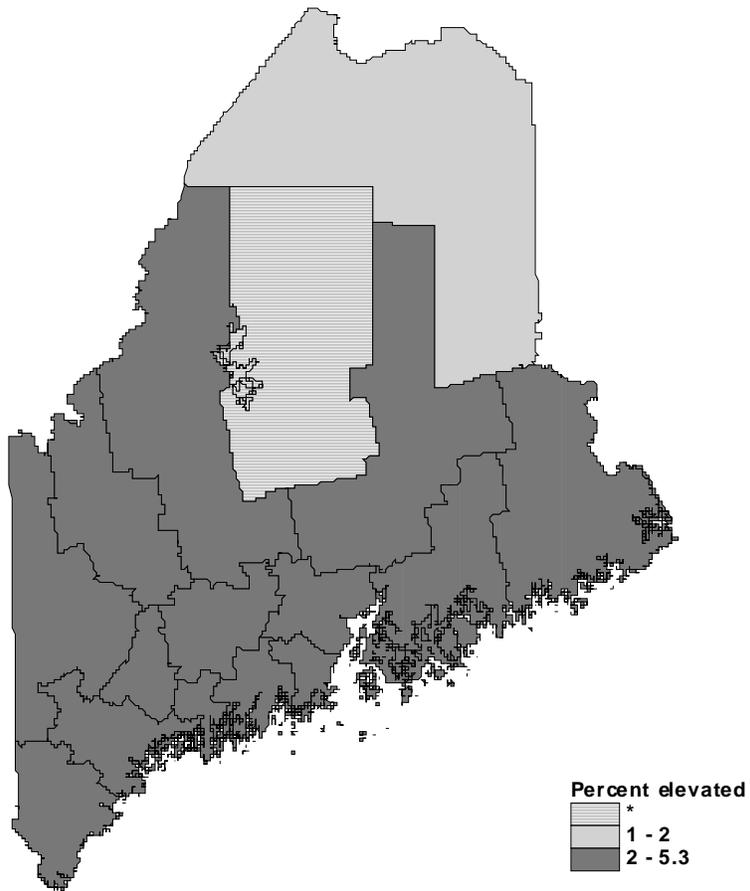
Patricia Ashland, Public Health Nurse	Public Health Nursing
Mike Belliveau, Director	Environmental Health Strategy Ctr
Tina Bernier, Environmental Specialist	Maine CLPPP Program
Yvette Bedard: Housing Director	City of Lewiston
Roger Bondeson, Housing Director	Maine State Housing Authority
Yvette Bedard: Housing Director	City of Lewiston
Carole Cifrino: Lead & Asbestos Hazard Prevention	Dept. of Environmental Protection
Loren Cole, Region 1	U.S. HUD
Val Heal, Health Coordinator	Headstart
Bill Jenkins: Director, Lead Hazard Control Program	Maine State Housing Authority
Ronda Jones, Lead Hazard Control Program	City of Portland
David Littell, Deputy Commissioner	Dept. of Environmental Protection
Gail Lombardi: Women, Infants, Children (WIC)	Bureau of Health
Dorothy Meagher: Director, Housing & Human Services	City of Auburn
Sheryl Peavey, Children's Health Coordinator	Bureau of Health
Gail Phoenix: Housing Director	City of Auburn
Alyson Stone: Lead Hazard Control Program	City of Lewiston
Kathy Tippy: Epidemiologist	Bureau of Health
Mary Beth Williams	Parent Representative

Lead Screening Prevalence by County
State of Maine - Children < 6 Years
Year 2002

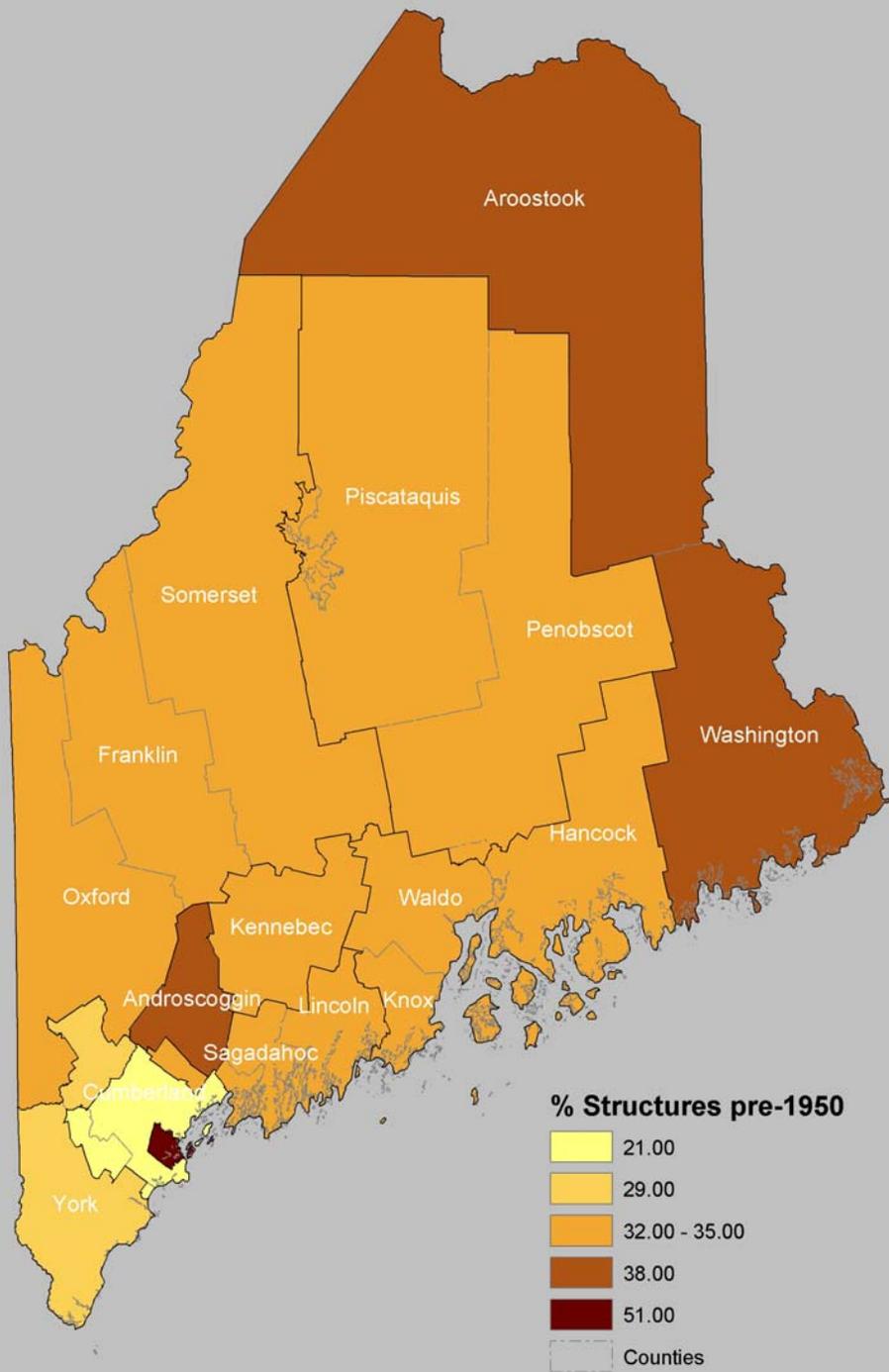


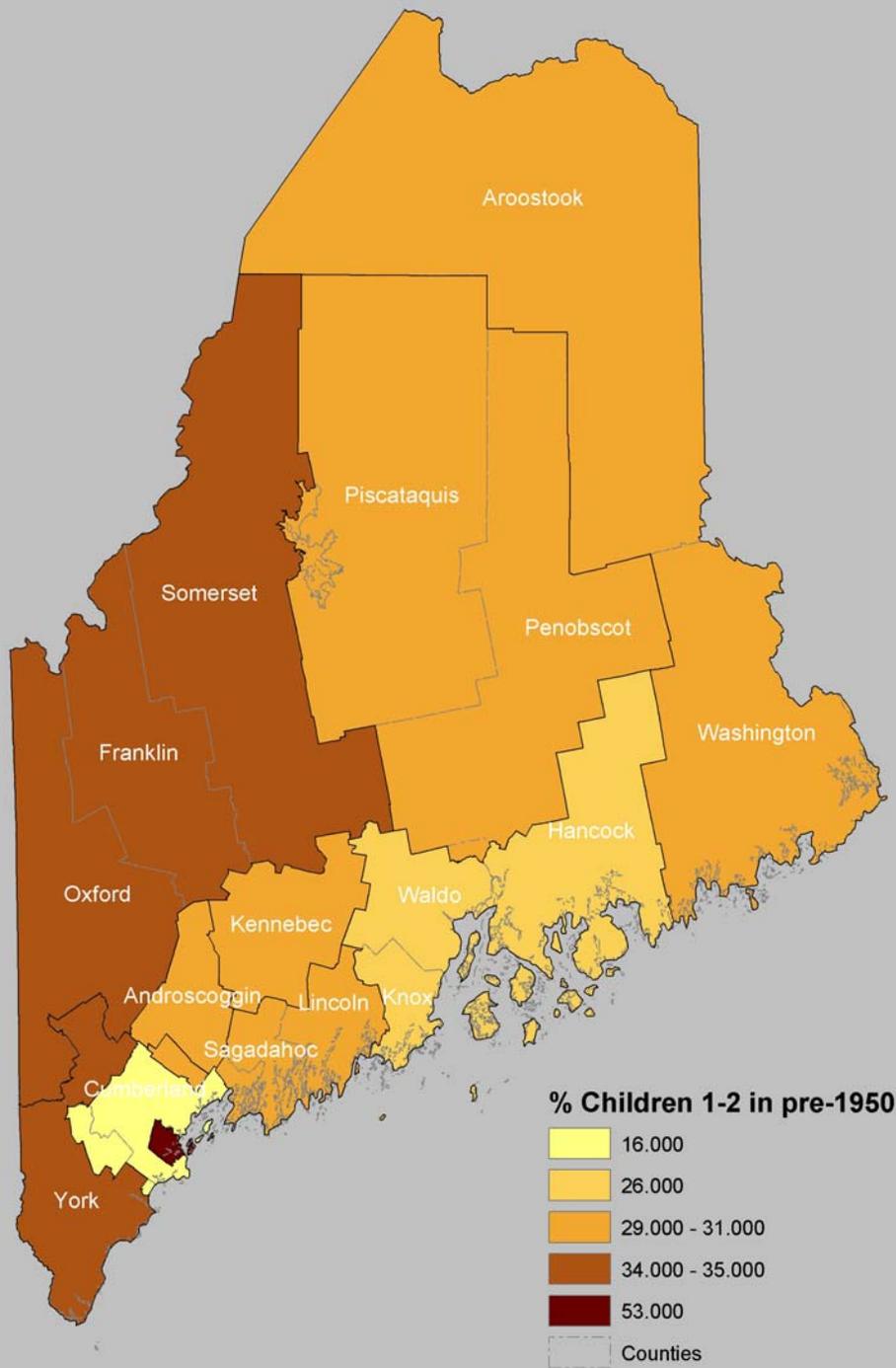
State screening prevalence 16.7% (95% CI 16.4 -17.0)

**Average Elevated Blood Lead Levels by County
State of Maine - Children < 6 Years
Years 2002 & 2002**



State average 3.8% (95% CI 3.6-4.1)





	Housing	Health	Other Exposure Sources	Community Mobilization
Who will conduct the evaluations	- DEP - MSHA - 3-city LHCP	- MCLPPP - BMS	- DEP	- MCLPPP
What data sources & other information will be used to measure progress	- # of abated homes w/LHCP - # of renovated homes w/other funding & lead-safe work - # of trained lead professionals # of Lead-Smart trained workers - Amt. of state & fed. funds available for lead - State laws, policies, regulations	- BLL results - CASA reviews - BLL-Medicaid data match	- State laws & regulations - Community surveys & focus groups - Measure # of OSHA trainings & # of OSHA referrals for non-compliance	- Discussions with community representatives - # of lead-poisoned children in the community - # of lead-safe homes in the community
How the information will be used	- To determine priority needs for the creation of lead-safe homes	- Measure progress towards the elimination goal - Determine gaps in screening & high-risk geographic pockets	- Measure progress towards the passage of consumer protection laws - Measure consumer usage of lead-safe products - Determine worker compliance with OSHA standards	- Gauge citizen perception & behavior around lead exposure - Evaluate success of community coalitions
Timeline for conducting and presenting annual evaluations to the Advisory Council and to CDC	- MSHA & DEP annual grant reports - Statute review at the end of each legislative session	- Quarterly blood lead screening reports - Annual surveillance report by Jan. 1 each year	- 1st review of laws/ regs. by Jan.1, 2006 - 2 nd review by Jan.1, 2008	- Results of community discussions, focus groups, key informant interviews by Jan.1, 2006 & Jan.1, 2008
How evaluation results will be used to improve progress towards elimination	- Determine priority needs: funding, laws, incentives workforce, etc. - Resource re-allocation - New strategy development as needed	- Focus efforts on remaining areas or populations with high prevalence of lead poisoning	- Identify and eliminate remaining sources of lead exposure	- Community members will be apprised of results of other evaluation measures - can mobilize local efforts for identified priority areas

