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**MISSISSIPPI**

**CHILDHOOD LEAD POISONING  
PREVENTION  
PROGRAM**

**LEAD POISONING ELIMINATION PLAN**

August 23, 2007

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## TABLE OF CONTENTS

BACKGROUND .....	1
THE STRATEGIC PLANNING PROCESS .....	2
RESPONSIBILITIES .....	4
ELIMINATION PLAN NARRATIVE.....	7
Surveillance and Analysis.....	7
Primary Prevention Through Health Education.....	12
Primary Prevention Through Risk Reduction.....	17
Case Management.....	21
PLAN IMPLEMENTATION .....	26
EVALUATION STRATEGY .....	26
ELIMINATION PLAN ACTIVITIES.....	28
Surveillance and Analysis Activities .....	29
Primary Prevention Through Health Education Activities .....	34
Primary Prevention Through Risk Reduction Activities .....	38
Case Management Activities .....	41
REFERENCES .....	44
APPENDIX A: Lead Advisory Committee Members .....	45
APPENDIX B: Communities with more than 5,000 individuals .....	47
APPENDIX C: Responsibilities for providing services .....	48
APPENDIX D: Criteria for chart audits by EPSDT .....	52
APPENDIX E: Outcomes, indicators, and data sources.....	53

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## ACRONYMS

<b>BLL</b>	Blood Lead Level
<b>CDC</b>	U.S. Centers for Disease Control and Prevention
<b>DOM</b>	Office of the Governor, Division of Medicaid
<b>EBLL</b>	Elevated Blood Lead Level, defined in Mississippi as the CDC level of concern, or a blood lead level of greater than or equal to 10 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ )
<b>EPSDT</b>	Early Periodic Screening, Diagnosis, and Treatment
<b>GIS</b>	Geographic Information Systems
<b>HUD</b>	U.S. Department of Housing and Urban Development
<b>MAFP</b>	Mississippi Academy of Family Physicians
<b>MDEQ</b>	Mississippi Department of Environmental Quality
<b>MSDH</b>	Mississippi State Department of Health
<b>MPCC</b>	Mississippi Poison Control Center
<b>MSAAP</b>	Mississippi Chapter of American Academy of Pediatrics
<b>MSACOG</b>	Mississippi Chapter of the American College of Obstetrics and Gynecology
<b>MSCLPPAC</b>	Mississippi Childhood Lead Poisoning Prevention Advisory Committee
<b>MSCLPPP</b>	Mississippi Childhood Lead Poisoning Prevention Program
<b>MSUES</b>	Mississippi State University Extension Service
<b><math>\mu\text{g}/\text{dL}</math></b>	micrograms per deciliter

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***ACKNOWLEDGEMENTS***

The Mississippi Childhood Lead Poisoning Prevention Program (MSCLPPP) would like to thank the Lead Advisory Committee members for their continued support and hard work on the Lead Poisoning Elimination Plan for Mississippi. Each member has set aside time from his/her everyday job to help create a plan to achieve a common goal – the elimination of childhood lead poisoning in Mississippi.

MSCLPPP would also like to thank the Centers for Disease Control and Prevention for its support through Childhood Lead Poisoning Prevention Program Cooperative Agreement 1H64EH000148-01, and the technical assistance team from the National Center for Healthy Housing, Healthy Housing Solutions, and the Alliance for Healthy Homes for its ongoing support of this effort.

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## EXECUTIVE SUMMARY

The Mississippi State Department of Health’s Childhood Lead Poisoning Prevention Program (MSCLPPP) was awarded a five-year grant by the U.S. Centers for Disease Control and Prevention (CDC) in July 2006. The grant came with a mandate to develop a strategic plan to eliminate childhood lead poisoning in the state by 2010. The Mississippi Childhood Lead Poisoning Prevention Advisory Committee (MSCLPPAC), originally formed in 1998, wrote an early draft “elimination plan” in 2005, before the CDC grant was awarded. This group of stakeholders from the public and private sector, including federal, state, and local government and non-profit agencies, universities, and community-based and faith-based organizations, was reinvigorated with new members during fiscal year (FY) 2007. With technical assistance provided by a CDC-funded team from the National Center for Healthy Housing, Healthy Housing Solutions, and the Alliance for Healthy Homes, the Advisory Committee took responsibility for creating the new version of the Plan.

The Advisory Committee divided its work among five Work Groups: Surveillance and Analysis, Primary Prevention Through Risk Reduction, Primary Prevention Through Health Education, Case Management, and Evaluation. Each Work Group developed goals and activities to reach the goals, evaluation measures, and timelines. The Plan’s major components and their rationales are summarized below.

### *Surveillance and Analysis*

The Surveillance and Analysis Work Group developed activities aimed at increasing blood lead testing among high-risk children and ensuring improved collection, dissemination, and utilization of reliable blood lead data.

While blood lead testing rose steadily between 2002 and 2004, it declined slightly in 2005. In 2005, 17% of children under age 72 months statewide received blood lead tests. Of the 41,648 children tested, 390 had blood lead levels at or above the CDC level of concern. One hundred thirty had blood lead levels (BLLs) at or above 15 micrograms per deciliter ( $\mu\text{g}/\text{dL}$ ), the level that triggers individual case management in Mississippi. Another 260 children had BLLs between 10 and 14  $\mu\text{g}/\text{dL}$ , and require ongoing blood lead monitoring and prevention education from health care providers and public health agencies.

MSDH’s 2003 *Mississippi Childhood Lead Poisoning Prevention Guidance* defined populations at high-risk for elevated blood lead levels as including Medicaid-enrolled or Medicaid-eligible children, children whose parents answer “yes” or “don’t know” to questions on the CDC risk questionnaire, pregnant women, and children over age six with persistent lead elevations ( $\geq 20 \mu\text{g}/\text{dL}$ ) requiring Medical management. The Plan does not change these definitions, but future efforts will include a formal screening plan that includes strategies to reach these and other high-risk groups.

Blood lead tests are a federally-required component of Medicaid preventive health visits, but the lead testing rate for even these Medicaid-enrolled children is low (estimated around 24%), and the exact number of Medicaid children tested is not known because the children’s Medicaid status is not always reported. The Plan calls for MSCLPPP to conduct outreach and education to

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increase participation and blood lead testing in the Medicaid “Cool Kids” Early Periodic Screening, Diagnosis, and Treatment (EPSDT) program. The Plan also calls for MSCLPPP to develop and implement a pilot project in the highest risk counties to increase testing of other high-risk children, using prior testing data and demographic information about age of housing and poverty to convince providers to test more children.

While most labs do report all blood lead test results to the State Health Department, not all do. Mississippi does not have a mandatory reporting law for all blood lead levels; only test results  $\geq 10$   $\mu\text{g/dL}$  must be reported. Inaccurate or incomplete data (including Medicaid number, name, addresses and race) further impedes good surveillance. The Plan calls for seeking legislation to: require universal reporting of blood lead test results; develop a reporting tool to ensure reporting of all relevant data; upgrade or replace surveillance software to improve data access and ease of use; increase the frequency of data quality checks; and produce an annual surveillance report for health care providers and the public.

***Primary Prevention Through Health Education***

The Primary Prevention Through Health Education Work Group developed activities aimed at educating health care providers, organizations that serve families of high-risk children, and high-risk families themselves about the dangers of lead and the need – and, in some cases, the legal requirements – for blood lead testing of, and proper follow-up for, high-risk children.

A majority of children younger than 72 months of age at high risk for lead poisoning are not receiving needed blood lead tests, including approximately three-fourths of Medicaid-enrolled children. Moreover, after years of steady gains, blood lead testing rates have declined over the past two years as Hurricane Katrina shifted health resources away from non-emergency activities and as a new recertification policy caused substantial declines in the number of Medicaid-enrolled children. The Plan calls for one or more physicians from the Mississippi State Department of Health to develop and present an educational program to teach physicians, nurse practitioners, nurses, health department nutritionists, and social workers about the need (and in the case of Medicaid-enrolled children, legal requirements) for testing various categories of high-risk children. Presentations will cover how to identify and test high-risk children, interpret test results, provide medical follow-up and referrals for those with elevated blood lead levels, and provide appropriate guidance to parents or guardians of these children. The Plan calls for making such training more robust through partnerships with state medical and health specialty organizations. The Plan also calls for development of a lead risk profile for each state health district, along with a state risk questionnaire and other educational materials and data, for distribution to health care providers and others to motivate and guide intensified blood lead testing efforts.

To address the need for greater public awareness and knowledge about lead poisoning among people who work with high-risk families, the Plan also calls for a program to train advisory committee members and other health department staff, such as nurses, social workers, and the Perinatal High-Risk Management staff, as lead poisoning prevention educators. These individuals will be taught how to deliver education directly to high-risk families and to community-based and faith-based groups that work with high-risk families concerning lead poisoning prevention.

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***Primary Prevention Through Risk Reduction***

The Primary Prevention Through Risk Reduction Work Group developed activities aimed at reducing the exposure of children to lead hazards, especially lead-based paint hazards in homes.

Mississippi has approximately 300 incorporated cities, most of which are very small with volunteer governments; only a few have housing codes and enforcement systems. The Plan calls for outreach to the officials of the 68 cities with populations of 5,000 or greater to encourage improved enforcement of peeling paint requirements in those with such codes. For jurisdictions where no local peeling paint code provisions exist, the Plan calls for efforts to win enactment and enforcement of the International Property Maintenance Code. The Plan also calls for seeking an amendment to Mississippi's tenant-landlord law to require lead-safe repair, removal, or covering of deteriorated lead-based paint.

The Work Group found that rental property owners, homeowners, and building trades people are largely unaware of accepted safeguards for maintaining and repairing properties with lead paint. Many lack resources to address such lead paint hazards, even when they are known to exist. The Plan calls for delivering training in lead-safe work practices to relevant categories of building contractors and landlords; providing information to Realtors about the dangers of lead paint hazards and how to address this subject effectively with homebuyers; encouraging landlords to regularly conduct visual assessments and make lead-safe repairs in their properties; and researching and publicizing possible federal and state sources of funds to assist property owners who want to repair lead paint hazards.

***Case Management***

Through efforts to increase blood lead testing under the CDC-funded grant, the number of children needing case management will likely grow substantially, and more resources will be needed to provide case management services. The Case Management Work Group developed activities aimed at ensuring that children with BLLs greater than or equal to 10 µg/dL receive appropriate medical, educational, nutritional, developmental, and environmental interventions.

MSDH's 2003 *Mississippi Childhood Lead Poisoning Prevention Guidance* document specified the range of services that should be provided based on a child's blood lead level, but not all providers follow these protocols. The Plan calls for updating the state's medical and environmental case management guidance to ensure consistency with CDC guidelines and informing providers and local health departments of the update. The State Health Department will conduct annual reviews and revise these protocols to reflect changing needs and updated recommendations from CDC and other organizations.

In the past, private providers and local health departments had responsibility for medical management of the Medicaid-enrolled children they tested. Both have struggled with providing comprehensive case management services consistent with CDC guidelines. Children covered under private medical insurance received lead testing and follow-up services at the discretion of their medical care providers. Over time, there have been shifting expectations about who provides case management. The Plan includes a table delineating how responsibility for the various components of case management should be shared among MSCLPPP, local public health

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departments, and the child's primary care provider. This information will be provided to these responsible parties.

The number of lead case managers and environmental risk assessors dedicated to local health departments or specific regions of the state is not sufficient to assure that CDC guidance for case management is being followed. The state lacks a mechanism for receiving adequate Medicaid reimbursement to pay for case management services for Medicaid-enrolled children, who make up a substantial portion of the state's elevated blood lead caseload. The Plan calls for seeking a new Medicaid reimbursement rate for up to two home visits for medical case management and two environmentalist visits in homes of children with confirmed blood lead levels of 15µg/dL or greater, beginning in FY 2008.

***Evaluation***

The Evaluation Work Group has designed a process for ongoing evaluation using measures developed for each Plan activity by the other four Work Groups. Evaluation is planned as a system that can evolve and adapt over time, based on past results and new input from stakeholders. MSCLPPP will provide technical assistance to Advisory Committee members and their partners in evaluating activities.

The Evaluation Work Group has provided a web-based Lead Elimination Activity Report that partners may use to document their activities and short-term outcomes for MSCLPPP. MSCLPPP, in turn, will compile these reports into a Lead Poisoning Prevention Resource Directory and update it quarterly. The evaluation also seeks to provide status updates twice a year to the Advisory Committee and others carrying out Plan activities. The Evaluation Work Group, the Screening and Surveillance Work Group and the MSCLPPP Coordinator and Epidemiologist will meet quarterly to review evaluation needs and results and will compile data to measure long-term outcomes each year.

Long-term and quarterly evaluation results and recommendations will be collected into Annual Lead Elimination Plan Evaluation Reports, available to all stakeholders and policy makers through the health department's web site. Each year, the advisory committee will review the annual report to determine what activities should be continued into the following year and what new activities may need to be added.



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## **BACKGROUND**

While Mississippi has already adopted lead testing and case management guidelines and provides a range of lead poisoning preventive services, childhood lead poisoning continues to be a significant public health problem with thousands of children at risk every year. The Centers for Disease Control and Prevention (CDC), relying on the findings of National Health and Nutrition Examination Surveys (NHANES) from 1999-2002, estimates that over 310,000 children in the United States ages one to five years have blood lead levels higher than 10 µg/dL (MMWR, 2005). In 2005, 390 children tested in Mississippi had blood lead levels at or greater than 10 µg/dL, CDC's level of concern. Blood lead levels equal to or greater than 10 µg/dL are associated with harmful effects on growth and development, with children aged two and under at greatest risk. Extremely high levels (>70 µg/dL) of blood lead can lead to seizures, coma, and death, if not diagnosed and treated.

Although paint manufacturers began to phase out lead in residential paint in the 1950's, and the federal government effectively banned lead from residential paint in 1978 and leaded gasoline shortly thereafter, lead in dust and soil from deteriorated lead-based paint in old housing remains the primary cause of childhood lead poisoning. Paint manufactured prior to 1950 poses the highest risk.

According to 2000 Housing Characteristic data from U.S. Census Bureau, 135,350 homes in Mississippi were built prior to 1950, with renter-occupied pre-1950 houses estimated at 34,851. The 2000 U.S. Census data for Mississippi also indicated that 19.9% of the population lived in poverty, compared to a national average of 12.4%. Living in older, deteriorated housing and lower income status are associated with increased risk of elevated blood lead levels (Pirkle et al., 1998).

The Mississippi Childhood Lead Poisoning Prevention Program (MSCLPPP) is a program of the Mississippi State Department of Health's (MSDH) Office of Health Services. It was developed to provide case management and follow-up for children with elevated blood lead levels, provide education and outreach on childhood lead poisoning, conduct environmental investigations of homes where lead poisoned children live, and provide guidance on lead testing to health care providers.

In July of 2006, the MSCLPPP was awarded a five-year grant by the US Centers for Disease Control and Prevention (CDC) to:

*"... assist state and local partners in building capacity to eliminate childhood lead poisoning as a major public health problem. The focus of the program is children under the age of six years with special emphasis on children under the age of three years. Special emphasis will be placed on building capacity for primary prevention of lead poisoning and on implementing protective housing-based policy that will remain in place beyond 2010. "* (CDC-RFA-EH06-602)

As part of the grant, the MSCLPPP is tasked with developing and implementing a plan to eliminate lead poisoning by 2010 (the Plan).

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## THE STRATEGIC PLANNING PROCESS

The State of Mississippi first convened the Mississippi Childhood Lead Poisoning Prevention Advisory Committee (MSCLPPAC) to address childhood lead poisoning prevention issues in 1998. This committee consisted of stakeholders from the public and private sector who dealt with children with elevated blood levels and/or who had interest in the health and safety of children. Their ongoing effort focused on developing and implementing a plan to eliminate childhood lead poisoning in Mississippi by 2010 through shared expertise and resources provided by key stakeholders from federal, state, and local agencies, universities and community-based and faith-based organizations. Specific activities included: assisting with the development of a strategic plan; monitoring progress towards elimination; and reviewing barriers and progress at least twice a year. In April 2003, the MSDH released its *Mississippi Childhood Lead Poisoning Prevention Guidance*, which identified target populations and provided guidance on screening and management of children with elevated blood lead levels. This document was widely distributed to health departments, community health centers, health professionals, housing and environmental protection agencies, and the general public.

With the 2006 CDC grant to Mississippi, the planning effort intensified. The MSCLPPAC expanded its membership and reorganized into five key Work Groups:

1. Surveillance and Analysis;
2. Case Management;
3. Primary Prevention Through Health Education;
4. Primary Prevention Through Risk Reduction; and
5. Evaluation.

Federal and state agency roles and responsibilities were clarified, as defined below.

Each Work Group established overarching goals and measurable objectives for its area, set yearly targets for activities, and identified the partners, infrastructure, policies and procedures that would be needed to achieve the goals. Appendix A identifies members of each Work Group. Collaboration between Work Groups, supported by MSCLPPP staff and technical assistance provided by a CDC-funded team from the National Center for Healthy Housing, Healthy Housing Solutions, and the Alliance for Healthy Homes, culminated in this Lead Poisoning Elimination Plan.

This Plan is a living document and will be reviewed and updated annually.

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**Key Goals of Mississippi's Lead Poisoning Elimination Plan**

- Goal 1:** By 2010, expand the assessment and surveillance of blood lead levels in Mississippi at-risk children up to 72 months of age.
- Goal 2:** Reduce the exposure of children to lead hazards.
- Goal 3:** Encourage statewide health promotion and education concerning lead poisoning prevention.
- Goal 4:** Ensure 100% of MS children with elevated blood lead levels receive appropriate medical, educational, nutritional, developmental, and lead hazard control interventions.
- Goal 5:** Increase staff and funding for lead poisoning prevention and case management activities.

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## **RESPONSIBILITIES**

### **Mississippi Academy of Family Physicians (MAFP)**

MAFP is an organization of family physicians dedicated to continually and cost effectively improving the physical, emotional, social, and spiritual health of the people of Mississippi. MAFP exists to serve the unique needs of its physician members, their patients, and the public at large. The MSCLPPP works with MAFP to increase family physicians' knowledge of lead poisoning and the importance of screening and blood lead testing at CDC-recommended intervals.

### **Mississippi Chapter of the American Academy of Pediatrics (MSAAP)**

MSAAP has been involved with state lead poisoning prevention activities for a number of years and has continuously had a representative(s) on the MSCLPPAC. The Chapter has assisted the MSCLPPAC in researching and assessing potential legislation to address lead screening in Mississippi's children. Education of pediatricians on lead screening issues and publicizing the availability of the Mississippi Childhood Lead Poisoning Prevention Guidance and State practices on lead screening and follow-up of lead-poisoned children, primarily through Chapter publications, have been some of its key activities in recent years. In addition, the Chapter serves as a liaison between pediatricians all across Mississippi and the MSCLPPP.

### **Mississippi Chapter of the American College of Obstetrics and Gynecology (MSACOG)**

MSACOG works with the MSCLPPP to educate its members about the importance of lead screening of pregnant women.

### **Mississippi Childhood Lead Poisoning Prevention Program (MSCLPPP)**

The MSCLPPP's role is to provide case management services for children with blood lead levels greater than or equal to 10 µg/dL, to provide environmental investigations for children with a single venous blood lead level greater than 20 µg/dL or two venous blood lead levels of 15-19 µg/dL at least 3 months apart, and to provide statewide health education and outreach regarding the dangers of lead poisoning, testing and prevention. The MSCLPPP will also work diligently with partners to make sure the goals, objectives, and activities of the Elimination Plan are met within the timeframes specified.

### **Mississippi Department of Environmental Quality (MDEQ)**

MDEQ assists the MSDH in efforts to eliminate childhood lead poisoning in Mississippi by: assisting in the development of the MS Lead Poisoning Elimination Plan; providing lists of State-accredited training upon request; assisting in community outreach initiatives on the hazards of lead-based paint; informing building and paint contractors of lead-based paint regulations; assisting in health fairs to inform the public of the hazards of lead-based paint; assisting in workshops and conferences; providing copies of the lead-based paint regulations and brochures; and providing financial assistance for MSDH representatives to attend lead-based paint

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conferences, up to the amount provided for in the EPA Lead-Based Paint grant awarded to MDEQ.

**Mississippi Poison Control Center (MPCC)**

MPCC at the University of Mississippi Medical Center has been designated by MSDH as the Poison Control Center for the entire state of Mississippi. Most cases of acute and chronic lead poisoning in Mississippi are reported to and managed through MPCC. The lead-related mission of MPCC includes: assisting the general public and the healthcare community to assess and manage poisoning cases with the intention of reducing the morbidity, mortality and cost of care in the state of Mississippi; advising physicians on the treatment of lead-poisoned individuals; educating and informing the general public on how to prevent lead poisoning and how to recognize and minimize exposure to sources of lead; and maintaining a database of information regarding the nature, causes, management and outcomes of all poisonings reported to the Center to assist the MSCLPPP in identifying areas of high risk.

**Mississippi State University Extension Service (MSUES)**

MSUES's role is to provide childhood lead poisoning prevention education to unlicensed in-home child care providers through the Nurturing Homes Initiative Project. It also disseminates lead educational materials and other pertinent information to the in-home child care providers and parents. In addition, MSUES will help train contractors and rental property owners in lead-safe work practices by organizing a statewide interactive video conference session on lead-safe work practices with host sites in each of the nine Public Health Districts.

**Office of the Governor, Division of Medicaid (DOM)**

The Mississippi Medicaid Cool Kids (EPSDT) Program is Medicaid's comprehensive and preventive child health program for individuals under the age of 21. A mandatory component of the Cool Kids (EPSDT) Program is to screen children six months to 72 months for lead poisoning. Lead testing is required at 12 and 24 months and any other time risk factors are identified through health care providers' use of CDC's risk assessment questionnaire. Additionally, children between the ages of 36 months and 72 months of age must receive a screening blood lead test if they have not been previously screened for lead poisoning. The DOM partners with the MSCLPPP in lead poisoning prevention education and outreach activities. The MSCLPPP maintains the lead surveillance system for case management of children identified with Elevated Blood Lead Levels.

**Federal Partners:**

**US Centers for Disease Control and Prevention (CDC)**

The role of the CDC in relation to Mississippi's Childhood Lead Elimination Plan is to provide technical assistance and guidance to the MSCLPPP for case management, environmental investigations, lead poisoning policies and legislation, and partnering with community-based and faith-based organizations.

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**US Department of Housing and Urban Development (HUD)**

The role of HUD in relation to Mississippi's Childhood Lead Elimination Plan is to monitor housing programs and federal funding as they relate to lead-based paint. HUD also serves as a liaison between Mississippi's public housing authorities and the Mississippi Health Department regarding notifications concerning children with elevated blood lead levels who live in public housing.

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## ELIMINATION PLAN NARRATIVE

This Elimination Plan has two components: a narrative description of the key objectives and activities and a set of tables that include additional details about the activities identified under each goal and objective.

### Surveillance and Analysis

**Goal 1: By 2010, increase the blood lead testing rate and improve the quality of surveillance data for at-risk children in Mississippi up to 72 months of age.**

#### Overview of Surveillance and Analysis Issues:

The collection and maintenance of reliable blood lead data is important for the successful elimination of childhood lead poisoning. Expanded blood lead screening and testing and effective surveillance of blood lead levels are essential for effective program planning, as well as for identifying high-risk populations. Electronic reporting of all blood lead test results enhances surveillance activities. The Surveillance and Analysis Work Group has concluded that additional strategies are still needed to increase data collection and analysis capacity and to improve data quality.

Surveillance data housed and maintained by the MSCLPPP are the only data that are currently used for program planning. According to data collected by the MSCLPPP and analyzed by the CDC, 17% of Mississippi children under age 72 months received blood lead tests in 2005 (see Table 1). Of the 41,648 children tested, 390 had blood lead levels (BLLs) at or above the CDC level of concern. Of the latter, 130 had BLLs at or above 15 µg/dL, the level that triggers individual case management in Mississippi. Another 260 children had BLLs between 10 and 14 µg/dL and will require ongoing blood lead monitoring and prevention education from health care providers and public health agencies. In fiscal year 2005, 175,073 Medicaid-eligible children were 72 months of age and younger; however, the MSCLPPP has not been able to precisely determine from existing data how many enrolled children were tested and how many of those screened had elevated blood lead levels.

**Table 1 — Mississippi Blood Lead Screening Data\***

Year	Population < 72 months old**	Number of Children Tested	Percent of Children Tested	Number of Confirmed Children By Highest Blood Lead Level (µg/dL) at or Following Confirmation					
				10-14 µg/dL	15-19 µg/dL	20-24 µg/dL	25-44 µg/dL	45-69 µg/dL	>=70 µg/dL
2002	246,449	26,258	10.7%	329	113	45	35	1	2
2003	246,449	36,882	15.0%	353	104	25	36	2	0
2004	246,449	42,389	17.1%	297	79	25	12	3	1
2005	246,449	41,648	17.0%	260	73	34	18	3	2

\* Data analyzed by the Centers for Disease Control and Prevention (CDC).

\*\* Based on 2000 US Census data.

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Mississippi does require mandatory reporting of all blood lead levels. Limitations in the surveillance data impair the State's ability to target high-risk groups for prevention activities. MSCLPPP's currently available surveillance data do not readily lend themselves to analyses by demographic or ethnic group.

MSCLPPP's 2003 prevention guidance has defined high-risk groups based on the Centers for Disease Control and Prevention (CDC) guidelines as:

- Children whose parents answer "yes" or "don't know" to questions on the CDC risk questionnaire;
- Medicaid recipients or Medicaid eligible children;
- Pregnant women; and
- Children over age six with persistent lead elevations ( $\geq 20 \mu\text{g/dL}$ ) that require medical management.

MSCLPPP's past and future lead poisoning prevention efforts are designed to address the needs of these target populations, as well as to improve the identification and services to other high-risk groups, such as refugees. In addition, efforts focus on identifying high-risk areas.

In 2007, 16 counties (Map 1) were identified as high-risk counties based on a combination of the following factors:

- Proportion of pre-1950 housing units;
- Proportion of children in poverty;
- Number of children less than six years of age;
- Lead screening rate;
- Total confirmed elevated blood lead level cases  $\geq 10 \mu\text{g/dL}$ ; and
- Number of addresses where multiple children have had confirmed EBLLs within the past five years.

The Plan's objectives address targeted screening in high-risk areas and populations, improving data quality and accessibility, and disseminating data.

**Objective 1: Increase the blood lead screening rate statewide, especially in high-risk populations, by a minimum of 10% annually.**

Blood lead testing is a required screening component of the Medicaid "Cool Kids" (EPSDT) preventive health visit, but the lead testing rate among Medicaid eligible children is low. Approximately 175,073 Medicaid-eligible children were 72 months of age and younger in fiscal year 2005 (July 1, 2004—June 30, 2005), but the MSCLPPP has not been able to precisely determine from existing data how many enrolled children were tested and how many of those screened had elevated blood lead levels.

*Activity 1: Conduct education and outreach activities designed to increase the knowledge of lead testing policies and priorities possessed by the staffs of private health care clinics, community health centers, Health Department clinics, and school clinics.*



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Recognizing that utilization of the Medicaid “Cool Kids” (EPSDT) preventive health benefits is low in Mississippi, MSCLPPP will conduct outreach and education efforts targeted towards increasing participation in the Medicaid “Cool Kids” EPSDT program statewide in an effort to increase lead testing. Additional efforts to support this activity are contained in the Plan’s section on Primary Prevention Through Health Education.

*Activity 2: By 2008, implement a targeted screening pilot project in conjunction with healthcare providers.*

Blood lead testing of children not eligible for Medicaid is limited. One factor may be the medical providers’ underestimation of the risks of lead poisoning in the populations served by their practices. As a first step towards building a better understanding of blood lead levels in high-risk groups and collaborating with medical providers serving these populations, MSCLPPP plans to develop and implement a targeted screening pilot project to increase lead screening among children less than 72 months of age. More specific strategies will be developed as the State screening plan is written. Foreign adoptees, refugees, and recent immigrants are not specifically targeted for screening, but the MSCLPPP plans to incorporate prevention efforts towards these groups in program planning.

**Objective 2: By 2009, institute a process for ongoing identification of areas and populations that are at risk for elevated blood lead levels utilizing other data sources and resources.**

*Activity 1: Identify lead sources by collecting and analyzing data from environmental investigations conducted by the MSDH.*

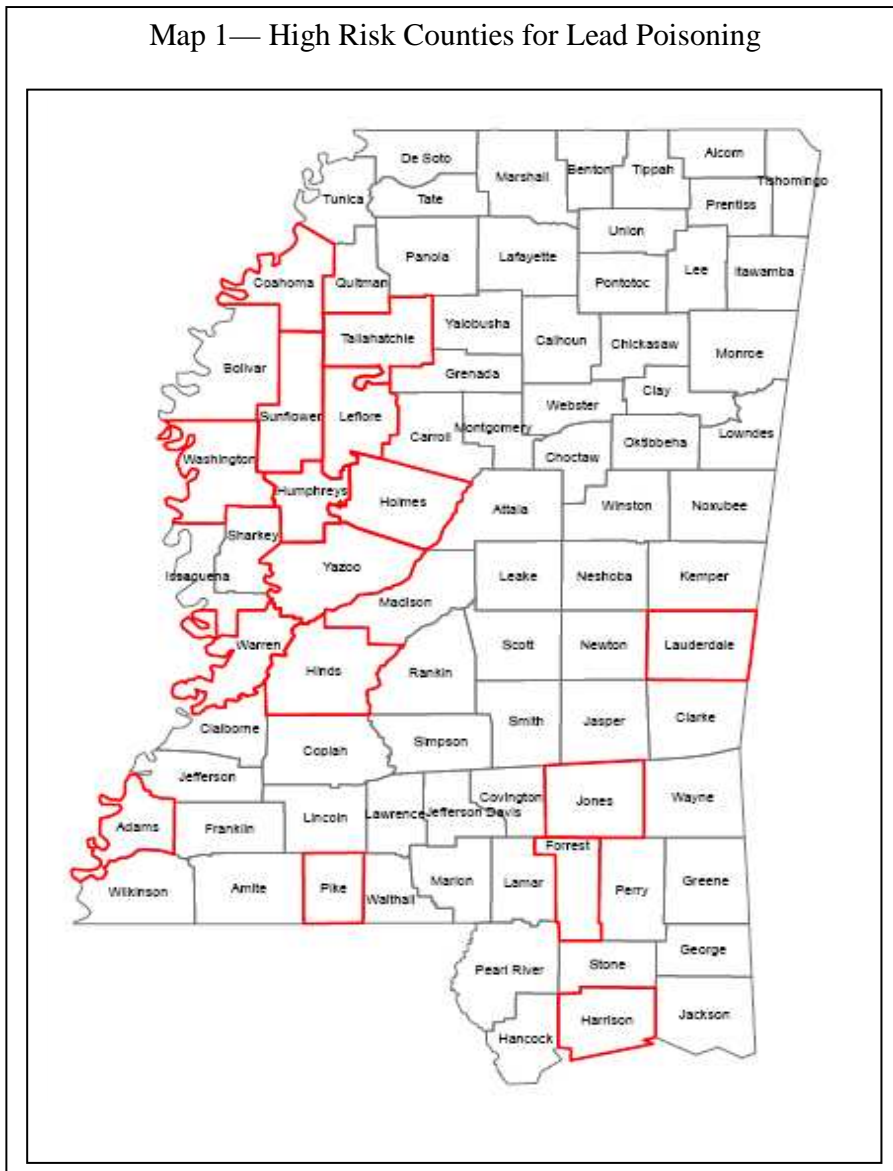
*Activity 2: Match Medicaid data with MSDH blood lead surveillance data on childhood lead poisoning to characterize lead exposure patterns among Medicaid enrollees and to identify those Medicaid children who have not received a blood lead test.*

*Activity 3: Acquire data on possible lead risk factors, such as housing age, poverty rates, and industrial lead sources from other agencies such as DEQ, HUD, and the Census Bureau.*

*Activity 4: Identify children who live in high-risk areas by utilizing Geographic Information Systems (GIS) to generate maps layering various types of relevant data: pre-1950 dwellings, poverty, race/ethnicity, EBLL rates, and other lead risk factors.*

Other data sources, especially Medicaid data, need to be used in conjunction with blood lead data to assess the burden of lead poisoning. One planned activity is to match Medicaid claims and encounter data with CLPPP surveillance data to identify which Medicaid children have and have not been screened. Once these children have been identified, their medical providers can be notified of the need to provide a blood lead test.

Map 1 illustrates how GIS mapping techniques can integrate MSCLPPP surveillance data and Census data to determine the high-risk counties. Several counties, including Harrison and Lauderdale, were selected as **high-risk** counties due to their low screening rates. Other data sources, such as environmental inspection results, will be used for further refinement of high-risk areas.



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**Objective 3: By 2009, implement methods to ensure complete and accurate reporting of all blood lead level testing results to the Mississippi State Department of Health.**

The MSCLPPP receives blood lead test results from MSDH's Laboratory, as well as from private laboratories, on a daily basis. Eight of the twelve laboratories that report blood lead test results to the MSCLPPP submit their results electronically. In addition, approximately 17 private medical clinics report results monthly from tests analyzed by a hand-held blood lead testing device (ESA Lead Care I).

*Activity 1: By 2008, establish standard reporting guidelines for laboratories and providers to increase completeness of data.*

*Activity 2: Work with private laboratories and providers to ensure reporting of all blood lead test results to MSDH.*

*Activity 3: Complete yearly quality checks of laboratory and medical provider reporting.*

MSCLPPP has worked diligently to increase reporting of blood lead level test results  $\geq 10 \mu\text{g/dL}$  by identifying medical providers who are noncompliant with the reporting law. In addition to obtaining test results, efforts need to focus on ensuring that all information received is complete and accurate. Inaccurate or incomplete data elements in the surveillance system include incorrect Medicaid number, name, addresses, and race. MSCLPPP will develop a standardized reporting tool for laboratories and providers to ensure that all data elements are complete for each child's record. This will allow the MSCLPPP to maintain a reliable surveillance system. Increasing the information contained in child records will enhance the data matching process with Medicaid and other data sources. MSCLPPP, in conjunction with the Division of Medicaid, will then be able to more effectively provide technical assistance to medical providers with low screening rates.

*Activity 4: By 2010, develop a strategic plan to expand reporting requirements for blood lead levels to include levels less than  $10\mu\text{g/dL}$  and require electronic reporting from all laboratories.*

Research conducted by Canfield et al. (2003) highlights the effects on IQ of blood lead levels below the current CDC level of concern. In anticipation of future needs to identify and serve children at these lower levels, the MSCLPPAC, in 2008-2009, will work towards legislation to expand reporting requirements to include electronic reporting of all blood lead levels to MSCLPPP.

**Objective 4: By 2009, enhance and monitor the blood lead screening surveillance system.**

*Activity 1: Conduct quality data checks on a quarterly basis.*

*Activity 2: Integrate blood lead data from STELLAR into an upgraded surveillance system.*

STELLAR is currently the surveillance system used to capture all blood lead data. The system is not user-friendly, and accessing the data can be challenging. Future plans include upgrading the

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surveillance system, and MSCLPPP will work with the MSDH Office of Health Informatics to identify new surveillance software to replace STELLAR. Data quality checks will be done on a quarterly basis to ensure data accuracy.

**Objective 5: Beginning in 2008, publish a yearly surveillance report on the burden of childhood lead poisoning and lead hazards in the state.**

*Activity 1: Develop a data analysis plan that identifies variables to include and compiles data from various sources.*

*Activity 2: Collaborate with Jackson State University, Institute of Disability Studies, and University of Mississippi Medical Center to analyze data.*

*Activity 3: Disseminate an annual report to medical providers, city officials, housing authorities, and others statewide that includes GIS maps.*

Disseminating statistical information is necessary to increase awareness and support for lead poisoning prevention. To facilitate data sharing about lead poisoning, MCLPPP and other partners will generate an annual surveillance report to inform the general public and health care providers about the burden of lead poisoning in the state. The report will include GIS maps to show high-risk areas effectively. The report will be posted on MSCLPPP webpage and included in the MSDH Public Health Report. In addition, copies will be distributed to key audiences throughout the state.

**Primary Prevention Through Health Education**

<b>Goal 2: Encourage statewide health promotion and education concerning lead poisoning prevention.</b>
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**Overview of Primary Prevention Through Health Education Issues:**

Primary prevention involves reducing children’s exposure to lead by minimizing exposure sources, thus preventing lead from entering the blood stream. Secondary prevention involves identification of children with elevated blood lead levels and appropriate referrals for monitoring and case management. Because lead’s harmful effects are very long lasting or even permanent, primary prevention is preferable to secondary prevention. However, successful primary prevention first requires health care providers, policy-makers, and the public to recognize the dangers of lead exposure. Recognition of these dangers continues to be low in many parts of Mississippi, as manifested by low rates of blood lead testing for high-risk populations. When screening rates are low, medical providers, policy-makers, and the public may falsely underestimate the risks of exposure and fail to address lead poisoning hazards promptly.

As Table 1 illustrates, the Mississippi blood lead testing rate rose steadily between the years of 2002 and 2004. This steady increase could be attributed in part to more providers purchasing and utilizing the ESA Lead Care I machine to test children in their offices, rather than referring them

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to outside laboratories. In 2005, the blood lead testing rate decreased. This decrease is thought to have occurred because (1) Hurricane Katrina hit the MS Gulf Coast and surrounding counties in August 2005, forcing many health departments and others involved in blood lead testing to shift resources to address other priorities, and (2) Medicaid began requiring face-to-face interviews for recertification. It is estimated that nearly 60,000 Mississippi children lost Medicaid coverage between April 2005 and December 2006 because of this new policy.

Under this Plan, the key targets for primary prevention through health education are health care providers, local health department staff, and community partner organizations that work with targeted high-risk populations. The MSCLPPP will continue to partner with other organizations to provide outreach and education to the general public, child care providers, and policy-makers.

**Objective 1: By 2009, educate at least 50% of healthcare providers in key specialties in Mississippi’s nine public health districts about the importance of and legal requirements for lead testing of high-risk children.**

The Primary Prevention Through Health Education Work Group identified a need to better educate the obstetricians who care for the mothers during the prenatal period and the pediatricians and family practitioners that care for the children after birth. In order to have the greatest credibility, these educational efforts should be developed and presented by a physician. The Primary Prevention Through Health Education Work Group also identified a need to educate nurse practitioners, nurses, and health department social workers and nutritionists, since these individuals are also involved in the child’s primary care.

*Activity 1: In 2008, coordinate with MSDH Lead Data Manager to develop and distribute a Lead Risk Profile and other supporting documents for MS Public Health Districts.*

One tool that will have to be created before presentations can be developed and delivered is a Lead Risk Profile for the State of Mississippi. This will be produced with assistance from the MSDH Lead Data Manager. This risk profile will show the hot spot areas in each health district in Mississippi based on past screening results and demographic data, and will show the blood lead distributions for children tested in each area. This risk profile will also note past lead blood testing rates for each area. The Lead Risk Profile can help overcome some health care providers’ misperceptions that their patients are not at high-risk for lead poisoning because they themselves have not identified a lead poisoned child for several years. If the providers see local statistics on elevated blood lead levels in neighborhoods they serve, they may be more willing to comply with State screening recommendations and federal screening requirements for Medicaid-enrolled children.

*Activity 2: In 2008, Disseminate Lead Risk Assessment Questionnaire to family practitioners, OB-GYNs, and pediatricians in MS via the Mississippi Morbidity Report (MMR).*

A second document for dissemination to health care providers is the CDC-recommended Risk Assessment Questionnaire, accompanied by the rationale for its use, and up-to-date lead statistics supplied by the MSCLPPP. The MSCLPPP will make this available to all health care providers

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via the Mississippi Morbidity Report (MMR). The MMR report is distributed on a monthly basis to all licensed providers in Mississippi, including pediatricians, OB-GYNs, and family practitioners. Currently, only the Cool Kid’s Program (EPSDT) providers and some Mississippi Chapter of the American Academy of Pediatric (MSAAP) providers utilize any form of the CDC-recommended Risk Assessment Questionnaire. The Work Group’s goal is to have all providers utilize this form and screen all children identified to be at risk. The Work Group recommends that two MMR issues be dedicated to these purposes at approximately six-month intervals during the 2008 calendar year.

*Activity 3: In 2008, develop physician-authored educational presentations and other educational materials. Offer these to physicians and health provider organizations for publication through their websites and newsletters.*

MSCLPPP and the Primary Prevention Through Health Education Work Group will work with one or more MSDH physicians with expertise on childhood lead poisoning to develop physician-oriented literature and a PowerPoint presentation. These presentations will cover risk factors for lead exposure, importance of testing, federal requirements for testing Medicaid-enrolled pediatric patients, and assessment of potential lead exposure in pregnant women and young children including the use of the Lead Risk Assessment Questionnaire. In addition, the presentations will review the specific clinical and analytical procedures involved in lead screening, the interpretation of lead levels, the various modalities of treatment and consultation, referral and follow-up. To ensure that the information in the presentations is evidence-based, the Work Group will work with the physician(s) who develop the program and the MSDH Lead Data Manager assigned to the MSCLPPP to insure inclusion of existing data on risk assessment, screening, detection, and patient management in all aspects of the program.

Since many organizations have their own websites and newsletters, the Primary Prevention Through Health Education Work Group will develop and compile a recommended list of educational materials. This list will be offered to physicians and health provider organizations for publishing on their websites and in their newsletters.

*Activity 4: In 2008, develop a “Myths versus Facts” sheet regarding lead poisoning in general with some specifics about Mississippi.*

Another tool that needs to be developed is a “Myths vs. Facts” lead poisoning fact sheet for Mississippi. This will require utilizing the expertise of a physician employed by MSDH to help in the development of the sheet.

*Activity 5: Beginning in 2008, provide at least one health education and training by physician-presented PowerPoint presentation and handouts in each public health district. These venues will include clinics, medical society meetings and other venues targeted to Mississippi pediatricians, family practice doctors, and OB-GYNs.*

The Primary Prevention Through Health Education Work Group anticipates this education will occur through: PowerPoint presentations delivered at the annual meetings of the obstetricians, pediatricians and family practitioners and in other venues, such as local medical society meetings, clinic and hospital medical staff meetings, and grand rounds at larger facilities. It is

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anticipated the presentations will cover the following topics: risk factors for lead exposure, the importance of testing high-risk children, the assessment of potential lead exposure in children and pregnant women, methods of screening, interpretation of lead levels, treatments, referrals, and follow-up consultation.

In addition to the MSDH (including a specific physician or physicians), this effort will require the cooperation of the Mississippi Academy of Family Physicians, the Mississippi Chapters of the American Academy of Pediatrics and American College of Obstetricians and Gynecologists, as well as any individual medical facilities or groups where the presentations will be conducted. Performance measures for this objective will include the number of presentations conducted each year and the number of attendees at those sessions.

**Objective 2: By 2009, expand the pool of trained health educators who can deliver lead poisoning prevention education to health care providers, families, organizations that work with high-risk families, and others in Mississippi's nine public health districts by training at least three staff members in each district and MSDH staff.**

The Primary Prevention Through Health Education Work Group had identified a need to make lead poisoning prevention education more robust and sustainable throughout the state. Health officers from the state's nine health districts and their staff are prime candidates to deliver prevention education, as are MSDH Maternal/Child Health (MCH) staff (including MSCLPPP staff) and members of the Advisory Committee. All of these potential educators need high-quality training and effective educational curricula and materials to be able to succeed.

*Activity 1: Develop a train-the-trainer program for other health professionals who, in turn, will provide lead poisoning prevention education to key audiences.*

*Activity 2: By 2009, train at least three staff members from each Public Health District to serve as lead poisoning prevention trainers for health care providers.*

To improve outreach to the medical community, the Primary Prevention Through Health Education Work Group recommends that three MSDH staff members from each Public Health District throughout Mississippi serve as local trainers for their staffs and community. The MSDH physician in charge of the lead education efforts for the various professional groups would be responsible for working with these staff members. The Work Group recommends training first those Public Health District staff and other key staff from the three highest-risk counties, until, over a period of three years, staff in all nine districts receives training.

Once trained and equipped with a PowerPoint presentation and the program literature, each of the three Public Health District staff members identified would be encouraged to make presentations to physician groups within their respective districts and at local and regional medical conferences. They will also serve as resources and mentors to health care providers who are not very familiar with how to handle a lead poisoned child. This will help ensure broader coverage and reach physicians who may not routinely attend annual meetings of their professional group.

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*Activity 3: Train MSDH staff (including MSCLPPP staff, nurses, social workers, and the Perinatal High-Risk Management staff) and interested members of the MSDH Childhood Lead Poisoning Advisory Committee as lead poisoning prevention trainers/educators by 2009.*

As with the physician train-the-trainer effort, this training would cover risk factors for lead exposure, importance of testing high-risk children, federal requirements for testing Medicaid-enrolled children, assessment of potential lead exposure in children and pregnant women, methods of screening, interpretation of lead levels, treatments, referrals and follow-up consultation, and strategies for risk reduction. The Primary Prevention Through Health Education Work Group recommends that this program be developed by the MSDH physician responsible for the medically-based program. It could be presented by either a key physician or by a non-physician who has been appropriately trained by a physician.

This training will be targeted to cross-train MSDH staff (including nurses, social workers, and the Perinatal High-Risk Management staff) and the Advisory Committee to deliver lead poisoning prevention education. MSDH staff are already going into homes to provide other services and will be able to provide information to high-risk families about lead poisoning prevention.

**Objective 3: By 2009, increase the number of individuals reached through educational activities conducted for the general public and in high-risk communities by offering at least one educational program in each of the nine Public Health Districts.**

*Activity 1: Provide annually at least one educational program on lead screening, risk reduction, and lead poisoning prevention to the general public in each of the nine Public Health Districts.*

*Activity 2: Provide annually health educational presentations, trainings, and materials to one of each type of community-based partner (community based organizations, civic clubs, schools, faith-based, ethnic, and other service groups) working with targeted populations in each of the nine Health Districts.*

Not all families with children receive lead poisoning prevention and screening education from their physician or health department. Given Mississippi's predominantly rural nature, limited access to health care in some parts of the state, and many children's lack of a "medical home," the Primary Prevention Through Health Education Work Group recommends that MSCLPPP employ additional strategies to educate families about lead poisoning prevention and the importance of having their children tested for lead poisoning. The MSCLPPP will facilitate at least one lead poisoning educational activity for the general public per health district per year. Provided that there is increased interest and that funding and personnel are available, additional programs should be presented.

The Work Group also recommends additional lead poisoning prevention education and promotion of blood lead testing and risk reduction through formal and informal affiliations with community-based organizations, civic clubs, schools, faith-based, ethnic, and other service



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groups. Any organizations that express an interest in lead poisoning prevention are a potential partner in this effort.

It will not be feasible to develop a formal training presentation for all possible community partners given the large number of organizations, the diversity of the potential audiences, and limited MSCLPPP health educational resources. Therefore, the Primary Prevention Through Health Education Work Group recommends the development of customized educational packets for community-based partner use. The MSCLPPP will develop these educational packets, to include a Lead Fact Sheet, the Lead Risk Profile, and other audience-specific prevention information. MSCLPPP staff will cultivate collaborations with organizations, with support from members of the Primary Prevention Through Health Education Work Group, and recommendation for partnerships from the entire Advisory Committee and other advocates. The staff and leaders of at least one community, civic, and faith-based organization in each public health department district will be targeted each year. Any interested organization, including those serving specific nationalities and issue groups, can be provided educational information.

### **Primary Prevention Through Risk Reduction**

<b>Goal 3: Reduce the exposure of children to lead hazards.</b>
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#### **Overview of Risk Reduction Issues:**

According to 2000 Housing Characteristic data from U.S. Census Bureau, 135,350 homes in Mississippi were built prior to 1950, with renter-occupied pre-1950 houses estimated at 34,851. The 2000 U.S. Census data for Mississippi also indicated that 19.9% of the population lived in poverty, compared to a national average of 12.4%. Living in older housing and being poor are associated with increased risk of elevated blood lead levels. Thus, a vital component of primary prevention in Mississippi involves identifying and addressing lead-based paint hazards in older deteriorated housing as quickly as possible.

Recently, other sources of lead exposure, such as imported toys, foods, cosmetics, medicines, lead in drinking water and other consumer products, have gained national attention. The Primary Prevention Through Risk Reduction Work Group considered a variety of strategies for risk reduction. Ultimately, it chose to focus on strategies related to risk reduction of residential lead-based paint hazards. As the Plan is updated in future years, it will contain strategies to address these other sources of exposure.

**Objective 1: By 2010, decrease exposure to residential lead-based paint hazards by training approximately 225 rental property owners and 75 contractors in lead-safe work practices, encouraging 30% of all realtors to complete HUD's free on-line Lead-Based Paint Visual Assessment Training, implementing an outreach campaign to encourage rental property owners to conduct visual assessments, and developing a strategy to identify and publicize mechanisms for financing repairs.**

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Healthy People 2010 calls for increasing by 50% the proportion of persons living in pre-1950 housing that is tested for the presence of lead-based paint. MSCLPPP employs only one environmental investigator to conduct inspections throughout the state of homes where children with EBLs have been identified. As of August 2007, Mississippi has 39 EPA-certified lead risk assessors and 31 lead-based inspectors registered with MDEQ. Some of these individuals are located in other states; others are located in governmental entities other than the local health departments. Primary prevention efforts require a team of investigators able to inspect homes that are not associated with an EBL case. The Case Management Section of this Plan addresses the need to develop a large base of environmental inspectors housed in public health districts. Until those issues have been addressed, it is not possible to establish a specific benchmark for the percentage of pre-1950 units that can be inspected by 2010, but it is possible to identify targets for hazard reduction education, work practice training, and other factors.

Anecdotal evidence suggests that lead hazards associated with privately-owned rental housing in poor condition make a significant contribution to Mississippi's elevated blood lead levels. Mississippi's Residential Landlord and Tenant Law does not directly specify corrective actions for lead-based paint as an obligatory action in privately-owned rental properties. Paragraph 89-8-23, which states: "Obligation of landlord. (1) (a) Comply with the requirements of applicable building and housing codes materially affecting health and safety," does not specify action regarding lead-based paint.

In addition, many property owners in Mississippi do not have the financial resources to reduce significantly lead-based paint hazards in the dwellings that they own.

One tool to improve conditions in pre-1978 housing is Section 1018 of the federal Residential Lead-Based Paint Hazard Reduction Act of 1992, also known as Title X. The law requires the disclosure of any known information about lead-based paint and lead-based paint hazards before the sale or lease of housing built before 1978. The sellers/landlords must provide to tenants and buyers an EPA-approved information pamphlet on identifying and controlling lead-based paint hazards ("Protect Your Family From Lead In Your Home") pamphlet. This pamphlet is available in a variety of languages on the MSCLPPP and MDEQ websites. Mississippi's rate of compliance with this law is not known at this time.

The federal Toxic Substances Control Act, Title IV 406 (b), known as the Pre-Renovation Lead Information Rule, already requires all contractors working for payment in any pre-1978 housing where they may disturb more than two square feet of lead-based paint to distribute a copy of "Protect Your Family from Lead in Your Home." Training in lead-safe work practices and following these practices before, during, and after renovation work is the next step in risk reduction. Although the MDEQ and the MSCLPPP websites maintain a calendar of lead-safe work practice trainings statewide, concerted outreach to contractors, rental property owners, homeowners, and realtors is needed to increase knowledge about the importance of lead-safe work practices and to train contractors, rental property owners, and others.

*Activity 1: Provide at least one annual statewide interactive video conference session on lead-safe work practices targeting contractors, with host sites in each of the nine Public Health Districts, and maintain a list of trained persons that is accessible to the public.*

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All Mississippi contractors should have training in lead-safe work practices and follow these practices before, during, and after painting and renovation work. The Mississippi State Extension Service has agreed to cooperate with the MSDH to ensure access to lead-safe work practices training throughout the state. Ultimately, lead-safe work practices will be required by EPA's final Renovation, Remodeling, and Painting regulation in 2008.

*Activity 2: Beginning in 2008, provide at least one training in lead-safe work practices for rental property owners in each health district annually.*

Extending the effort to ensure that landlords become familiar with lead-safe work practices, the Mississippi State University Extension Service will offer rental property owners classes in Lead-Safe Work Practices via its distance learning channel.

*Activity 3: MSCLPPP will conduct outreach to encourage all Realtors to take HUD's free on-line Lead-Based Paint Visual Assessment Training and to educate buyers, sellers, and renters about the federal Lead Disclosure Rule and the importance of repairing lead hazards.*

All Mississippi Realtors need knowledge of the dangers of lead poisoning. Realtors are key advisors to households buying, selling or renting a home. The occurrence of a change in ownership or occupancy provides an opportunity to take action, such as needed repair work. The federal Lead Disclosure Rule requires that knowledge of lead or lead hazards be disclosed by sellers and landlords to buyers and renters respectively. With a strong understanding of lead-based paint issues, every professional Realtor in Mississippi can help consumers to act responsibly and protect children.

The MS Association of Realtors has committed to promote Realtor education by recognizing completion of the HUD visual assessment course for continuing education credit. The MSCLPPP will support this effort by publicizing this training on its website and in any other outreach it targets to Realtors. This will greatly increase the number of Realtors desiring to take the course. The on-line training is simple and can be completed at the viewer's pace. It provides a wealth of information for someone who may not be familiar with the effects of lead poisoning or how lead-based paint contributes to lead poisoning. Having this information will assist the individual Realtor who deals with sellers, landlords, buyers, and renters of pre-1978 property by alerting them to the effects of lead poisoning in order to reduce the risk of lead poisoning in children.

*Activity 4: By 2009, MSCLPPP will implement an outreach campaign to encourage rental property owners to conduct visual assessments for deteriorating paint and repair the painted surface safely using lead-safe work practices.*

Beginning in 2008, the MSCLPPP, in conjunction with the MSCLPPAC, will implement an outreach campaign to promote "essential maintenance practices" (visual assessment plus repairs) that will be conducted through the media, distribution of inserts in bills or other mailings from utility companies and/or property tax officials, and other means of mass communication. As a result, rental property owners will be encouraged to check their properties for deteriorated paint and, using established lead-safe work practices, repair the painted surface. This approach

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minimizes the burden on the rental property owner. An owner of rental property built before 1978 can assume the presence of lead-based paint and conduct repairs of deteriorated paint or repairs disturbing intact paint following lead-safe work practices. Repairing the painted surface and correcting any underlying problem is standard maintenance necessary for asset preservation. Where codes prohibit peeling paint in pre-1978 housing or lead-based paint hazards, visual assessment and proactive repairs are key to rental property owners' successful compliance; this campaign will lay an educational foundation preceding statewide adoption of such requirements.

*Activity 5: By 2008, develop a strategy to identify and publicize mechanisms for financing repairs.*

Other communities around the nation have used tax credits, special-purpose loan programs, Community Development Block Grants, HOME funding, and weatherization funding to help property owners reduce lead hazards. Beginning in the fall of 2007, the Risk Reduction Work Group will consult with members of the Mississippi Field Office of the U.S. Department of Housing and Urban Development (HUD), Mississippi HOME Corporation, counties and municipalities about how to better integrate lead hazard reduction into publicly-funded Mississippi housing programs. The Risk Reduction Work Group will also consult with community development corporations, financial institutions, and other sources about ways to expand the pool of resources available to fund hazard reduction in owner-occupied and in rental housing. The Work Group will also evaluate "best practices" and ideas for financing mechanisms such as tax credits.

By mid-2008, the Work Group, in consultation with the MSCLPPP and other programs, will draft a plan for increasing the availability and accessibility of funding to property owners. Information about funding will be made available through the MSCLPPP, MS Department of Economic and Community Development, and MDEQ websites.

**Objective 2: By 2010, decrease exposure to residential lead-based paint hazards by revising and enforcing state and local housing policies in approximately 14 municipalities with populations greater than 5,000.**

Lead-based paint hazards in rental housing pose a significant public policy challenge. Few jurisdictions have adopted the International Property Maintenance Code (IPMC), which minimally prohibits peeling paint. The Residential Landlord and Tenant Act currently has no enforcement mechanism short of court action. Most low- or moderate-income tenants renting pre-1978 housing do not have the resources to use the judicial system.

*Activity 1: Implement a campaign to adopt and enforce the International Property Maintenance Code (IPMC) targeted toward Mississippi municipalities with populations greater than 5,000.*

By initially targeting outreach to encourage enactment and enforcement of the International Property Maintenance Code to the 68 cities with populations of 5,000 or greater (see Appendix 2), it is possible to cover the majority of the State's population. Getting local officials to agree to adopt the code will require strong measures and the visible leadership of Mississippi's

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governor or other prominent state government official. The Governor’s office could support this effort by issuing a proclamation encouraging elected officials to vigorously pursue safe housing conditions through the use of the IPMC. MSDH could publicize the proclamation, offer technical assistance to jurisdictions engaged with enactment and enforcement, and attempt to determine the effectiveness of the use of IPMC in the places where it is in effect. The MS Realtors Association, MS Contractors Association, and MS Municipal League have been recruited as partners in carrying out this activity.

Statewide adoption of the IPMC would be another efficient way to address the problem of peeling paint. In the process of adopting a property maintenance code, the legislature and Governor can customize Mississippi-specific provisions to address lead-based paint beyond the prohibition of peeling paint, such as requiring the use of lead-safe work practices unless the deteriorated paint has been found free of lead during a lead-based paint inspection or risk assessment, and requiring that owners of pre-1978 rental property complete training in lead-safe work practices.

*Activity 2: Propose modification of section 89-8-23 (1) of the Residential Landlord and Tenant Act to address lead-based paint hazards and asbestos hazards.*

Amending the Residential Landlord and Tenant Act of 7-1-1991 to prohibit lead-based paint hazards provides another strategy to reduce exposure. For example, the law could be amended to specify “peeling paint in pre-1978 housing” and “Lead-based Paint” as health and safety issues. This would probably require an additional sub-paragraph stating “Deteriorated paint in pre-1978 housing must be repaired in accordance with established lead-safe work practices, unless the deteriorated paint has been found free of lead by a lead-based paint inspection or risk assessment.”

## **Case Management**

<b>Goal 4: Ensure 100% of MS children with elevated blood lead levels receive appropriate medical, educational, nutritional, developmental, and lead hazard control interventions.</b>
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### **Overview of Case Management Issues:**

CDC’s 2002 guidance on case management services, *Managing Elevated Blood Lead Levels among Young Children*, defines case management as:

*Case management of children with EBLs involves coordinating, providing, and overseeing the services required to reduce their BLLs below the level of concern (i.e., 10 µg/dL). It is based on the efforts of an organized team that includes the child’s caregivers. A hallmark of effective case management is ongoing communication with the caregivers and other service providers and a cooperative approach to solving any problems that may arise during efforts to decrease the child’s BLL and eliminate lead hazards in the child’s environment. Case management is not simply referring a child to other service providers, contacting caregivers by telephone, or other minimal activities.*

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In Mississippi, the case management process begins when a child has a confirmed venous blood lead level of 10µg/dL or greater. The MSCLPPP is notified of the result by the testing laboratory, and then the MSCLPPP Program Manager makes contact with the provider who ordered the test. This communication is intended to let providers know when the child needs to be retested and what other information the medical provider needs to give to the family. The MSCLPPP Program Manager also contacts the designated case manager housed within the MSCLPPP program to initiate case management services at the times designated in its revised case management protocol and the Childhood Lead Poisoning Prevention Guidance, based on the BLL of the child.

In the past, lead testing in Mississippi was provided as part of the Medicaid-funded Cool Kids Program (EPSDT). The State’s Children’s Health Insurance Program (CHIP) provides a preventive health screen, but a lead test is not a routinely covered core service. Prior authorization is necessary for CHIP to pay for a lead test. Both private providers and local health departments were responsible for the medical management of Medicaid-enrolled children they have tested for EBLs under the Cool Kids Program. Children covered under private medical insurance received lead testing and other services at the discretion of their medical providers.

Over time, there have been conflicting expectations about who provides lead case management services. The MSDH published the *Childhood Lead Poisoning Prevention Guidance* in April 2003 for Mississippi medical providers who are providing lead screening and services for children with EBL. This document contained the Mississippi lead testing protocol and specified the range of follow-up services that should be provided based on BLL. The document was made available to all providers. This document is cited in the Cool Kids Program manual as a resource for case management follow-up testing guidelines. It is the Case Management Work Group’s understanding that not all providers are following these protocols. Medical providers were also expected to offer other case management services, but this has not occurred systematically.

In FY 2005, 260 children aged 0-6 years had BLLs of 10-14 µg/dL or above, 73 had BLL 15-19 µg/dL, and 77 had BLL of 20 µg/dL or greater. Any child that has a blood lead level of 20µg/dL or greater or who has a persistent 15-19 µg/dL BLL (at least two blood lead levels of 15-19 at least three month apart) is currently referred by the MSCLPPP to the MS State Maternal and Child Health Early Intervention Program for a developmental evaluation and to the MSCLPPP environmentalist for an environmental investigation. The MSCLPPP currently has only one environmentalist assigned to EBL home investigations. It has no staff formally designated as case managers. Since the MSCLPPP currently has no dedicated lead poisoning prevention nurse case managers in the local health departments, the work of overseeing the effectiveness of case management falls to the MSCLPPP coordinator and to others in the MSDH.

With efforts to expand BLL screening in Mississippi under the CDC-funded grant, the Case Management Work Group anticipates the number of children who will need to receive case management will grow. Moreover, with an assortment of staff at the local health department level providing EPSDT case management in addition to other responsibilities, the Case Management Work Group has identified a need to standardize protocols, disseminate them

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widely, and more systematically monitor the effectiveness of case management provided under these new guidelines.

**Objective 1: Beginning in 2008, provide comprehensive case management services to all children with blood lead levels greater than or equal to 10 µg/dL.**

The 2003 *Childhood Lead Poisoning Prevention Guidance* was intended to identify the steps and timeframes involved in case management services, but needs to be updated in light of CDC's 2002 case management guidance. Moreover, roles and expectations of service delivery on the part of medical providers, Health Service Nurses in local public health departments, and the MSCLPPP need to be more clearly defined. Appendix C contains a working outline of how those responsibilities need to be divided, but more clarification will be needed as circumstances change. Appendix D contains the chart audit review criteria currently used under the EPSDT system. This review process may also need to be expanded.

*Activity 1: By January 1, 2008, review and revise Mississippi's Case Management Protocol, along with related forms and procedures.*

*Activity 2: By January 1, 2008, review, revise, and disseminate protocols for environmental investigations for homes with children with EBLL.*

*Activity 3: Disseminate revised protocol and forms to all nine local health departments.*

*Activity 4: By the end of 2008, develop and implement an evaluation plan to assess the effectiveness of implementation.*

CDC's 2002 case management recommendations include, "... Set standards for follow-up of children with BLLs  $\geq 10$  µg/dL; ensure that these standards are met. Establish procedures for identifying new cases, assigning cases to case managers, providing oversight of case management activities and case managers, and providing oversight for environmental inspection and remediation. Secure Medicaid reimbursement for case management and environmental services. Identify service gaps and take appropriate action."

The recommendations also address coordination of care with other agencies that have responsibilities for serving EBLL children:

*"Work with public and private organizations including health care providers, managed care organizations, Medicaid agencies, housing organizations, mortgage lenders, property owners, and community groups. Provide consultation, education, and technical assistance to these groups, and prepare and distribute educational materials to them. Develop program policy supporting the effective management of children with EBLs."*

In order to implement this guidance, MSCLPPP needs to give high priority in 2007 to reviewing, revising, and disseminating clear case management protocols, with forms and training, to promote consistent application of these protocols.

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The areas that these protocols need to address are:

- Assessment;
- Developmental Evaluation/Testing;
- Written Plan of Care;
- Referrals;
- Health Education / Anticipatory Guidance; and
- Case Closure criteria that include reduction of blood lead levels and remediation of environmental hazards in the home.

As more children are screened, the need for more home investigations for children with EBLLs will grow. In anticipation of the need to add additional environmental investigators, the MSCLPPP will need to re-examine and standardize its protocols for environmental investigations, including:

- Home Investigation timelines;
- Education;
- Recommendations for Cost-Effective Risk Reduction Activities; and
- Repeat home visits for compliance with environmentalist recommendations.

Dissemination for the protocols will need to target healthcare providers, all local health departments, Medicaid and WIC offices, Early Intervention, and other offices as needed. The MSCLPPP may need to network with Medicaid and other MSDH child health programs for dissemination.

Once the protocols are revised, they will need to be implemented, which will require the MSCLPPP to provide or to contract for training of the Health Services Nurses in the local health departments. Finally, the MSCLPPP must determine whether the protocols are being applied consistently across the state, and whether they are achieving the ultimate objective, which is to reduce EBLL's children's blood lead levels below 10 µg/dL, as demonstrated by two tests at least six months apart, and to address the lead hazards in the home. The STELLAR system (or the surveillance system chosen to replace STELLAR) should be used to determine whether specific case management services, environmental investigations, and follow up blood lead tests are being accomplished at CDC-recommended intervals. As part of the protocol development process, an evaluation plan will be developed to assess whether the protocols for follow-up communication with medical providers and referrals to developmental, nutritional, and other services are being documented at the local level. In addition, protocols will be reviewed on a yearly basis. If needed, the protocols will be updated based on BLL surveillance, needs assessments, changes in census, or new guidelines from CDC, AAP, or other organizations promoting child and community health.

*Activity 5: By January 1, 2008, update and disseminate the Childhood Lead Poisoning Prevention Guidance document.*

To ensure Mississippi Lead Case Management practices are consistent with CDC guidelines and Mississippi needs, the MSCLPPP Guidance will need to be updated based on results and data collection, needs assessments, changes in census, or new guidelines from CDC, AAP, or other

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organizations promoting child and community health.

**Goal 5: To increase staff and sustain funding for lead poisoning prevention case management and environmental investigation activities.**

Staff to provide lead case management home visits and environmentalists are not evenly distributed throughout the state. The MSCLPPP has relied on medical providers and the public health nurses who offer EPSDT services via the local health departments as the primary sources of case management for Medicaid-enrolled children. Current MSCLPPP staff resources are limited, making it difficult for the agency to offer lead case management and environmentalist services at CDC-recommended time frames.

An increase in the resources to provide case management and timely environmental investigation is particularly critical to MSCLPPP's ability to deliver services to Medicaid-enrolled children with elevated blood lead levels. Since Mississippi Medicaid children will be targeted for more intensive blood lead testing and follow-up services under this Plan, the Case Management Work Group has identified strategies to more fully partner with the Medicaid agency to secure effective service delivery.

**Objective 2: By the end of 2009, receive appropriate funding for environmental investigations and personnel needs through partnership with Medicaid and other MSDH programs.**

The MSCLPPP lacks a mechanism for receiving adequate Medicaid reimbursement for comprehensive case management visits and home environmental inspections for Medicaid-enrolled children who have EBLs. The state has no Medicaid-managed care organizations that provide EPSDT services. The state also has few lead case managers and no environmental risk assessors dedicated only to certain local health departments or specific regions of the state to ensure that CDC guidance for case management is being followed.

*Activity 1: Collect data to establish appropriate rate of reimbursement for environmentalist and case manager home visits.*

*Activity 2: Seek Medicaid reimbursement for environmental investigations of primary residences beginning in 2008 and Medicaid reimbursement for up to two home visits and two environmentalist visits in home of children with confirmed BLL of 15 µg/dL or greater in 2008 and thereafter.*

In 2008, the MSCLPPP will begin collecting information about the cost of delivering services. This information will be used to help support the state's efforts to gain Medicaid reimbursement for two home visits and two environmentalist visits for children that have confirmed BLLs of 15 µg/dL or greater.

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## PLAN IMPLEMENTATION

Each Plan activity identifies who will need to be involved in implementation. For each activity, MSCLPP staff and leadership from the relevant Work Group will convene an “Activity Core Group,” comprised of MSCLPPP support staff, Work Group members, and other identified activity partners who will have to be recruited, to assist in planning and implementation. It is vital that Work Group leaders and key members play a continuing role in the Activity Core Groups because, as the developers of the activities in their section of the Plan, it is the Work Group members who best understand and care the most about successful implementation of their activities.

Because each section of the Plan contains multiple activities, some occurring simultaneously, MSCLPPP staff and Work Group leaders will be mindful of the timelines designated for the various activities as they launch new Activity Core Groups. Each year MSCLPPP staff and Work Groups will conduct an early review of their Plan activities to make sure the timelines designated in the plan are logical and ensure that the highest priority objectives are addressed. Because activities under one Work Group may bear on activities under another Work Group, MSCLPP staff will pay attention to overlapping activities in order to avoid potential conflicts and capitalize on possible synergies.

The Activity Core Groups will do the actual work to carry out their designated activities, including such things as developing and reviewing materials and other work products, collecting and compiling data, doing research, delivering training and education, disseminating materials, and executing strategies to enact or modify policies. Activity Core Groups also will track progress toward the objectives associated with their activities, and they may also work to publicize and celebrate their accomplishments.

As new information or situations arise, activities in the Plan may be revised or new activities initiated as needed by MSCLPPP staff in collaboration with the Work Group overseeing the activity in question.

## EVALUATION STRATEGY

The establishment of ongoing evaluation of lead elimination plan activities in Mississippi, the Lead Advisory Committee, and the MSCLPPP is critical to successful implementation. Evaluation, planned as a system that can evolve and adapt over time, is a dynamic process that will require the constant input of stakeholders.

Both short- and long-term outcome measures will be considered in Mississippi’s evaluation strategy. (Appendix E identifies specific measures, indicators, and data sources.) Short-term evaluation measures will be monitored quarterly, with updates provided twice a year to the Lead Advisory Committee. Quarterly

**Short-term outcome measures** are important for determining whether or not activities:

- have been completed on schedule,
- seem to be appropriate for the target audiences,
- are being implemented successfully or if changes need to be made in implementation strategies.

**Long-term outcome measures** are important for determining whether or not activities have served to reach the overall goals of the Lead Elimination Plan.

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evaluation results will be compiled during the year for inclusion in the annual Lead Elimination Plan Evaluation Report. This report will summarize results gathered throughout the year for short-term outcomes, the annual evaluation of long-term outcome measures, and recommendations to guide strategic planning of future interventions. Copies of the report will be distributed to the Lead Advisory Committee, policymakers, and others interested in lead poisoning prevention in the state.

Key areas that will need evaluation are:

- The percentage of Mississippi children with elevated BLLs who receive appropriate medical, educational, and developmental services along with lead hazard control interventions;
- Staffing levels and funding available for lead poisoning prevention case management activities;
- The number and geographic distribution of health promotion and education activities concerning lead poisoning prevention; and,
- The percentage of children who may still be exposed to lead hazards.

Evaluation of the Lead Elimination Plan will be a joint effort. The MSCLPPP will provide technical assistance to partners and Lead Advisory Committee members in evaluating their individual activities. A web-based Lead Elimination Activity Report form has been developed so that partners may report their activities to the MSCLPPP, who will utilize this information to compile a Lead Poisoning Prevention Resource Directory that will be updated quarterly. The resource directory will help the MSCLPPP with short-term evaluation of the Lead Elimination Plan. Partners and Lead Advisory Committee members will receive updates of the resource directory each quarter, and the MSCLPPP staff will also distribute it through the MSDH website.

The Lead Advisory Committee's Evaluation Workgroup will work with the Screening & Surveillance Workgroup and the MSCLPPP Coordinator and Epidemiologist to compile data to measure long-term outcomes each year. The MSCLPPP's Epidemiologist will be responsible for compiling the short- and long-term evaluation results into a cumulative annual Lead Elimination Plan Evaluation Report. The Evaluation Workgroup, Screening & Surveillance Workgroup, and CLPPP staff will meet quarterly to review evaluation needs and results.

Each year, the Lead Advisory Committee will utilize the Lead Elimination Plan Evaluation Report to determine which activities should be continued into the following year and what types of new activities may need to be added. The Lead Elimination Plan Evaluation Report will thus guide long-term strategic planning for addressing lead poisoning in Mississippi.

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## **ELIMINATION PLAN ACTIVITIES**

The following elimination plan activities are organized by the following four headings: Surveillance and Analysis, Primary Prevention Through Health Education, Primary Prevention Through Risk Reduction, and Case Management. For each subject area, goals, objectives, and a list of activities to meet the objectives are identified. The tables also identify the lead agency responsible for implementing the activity, the additional resources needed, the years in which the activity will take place and outcomes measures that can be used to evaluate the activity.

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## Surveillance and Analysis Activities

**Goal 1:** By 2010, increase the blood lead testing rate and improve the quality of surveillance data for at-risk children in Mississippi up to 72 months of age.

**Objective 1:** Increase the blood lead screening rate statewide, especially in high-risk populations, by a minimum of 10% annually.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Conduct education and outreach activities designed to increase private provider, community health center, health department clinic and school clinic staff knowledge of lead testing policies and priorities.	MSCLPPP, Division of Medicaid, Medical providers	Strategic plan	Number and list of education/outreach activities by targeted group for each year.	Conduct at least one education and activity for each of the targeted groups.	Conduct at least one education and activity for each of the targeted groups.	Conduct at least one education and activity for each of the targeted groups.
2. Implement a targeted screening pilot project in conjunction with healthcare providers.	MSCLPPP, MSDH Laboratory, Division of Medicaid, MS Chapter, AAP	Targeted screening plan	Letters of commitment from participating providers. Number of children screened/ number identified with EBLLs.	Obtain letters of commitment from 100% of providers selected to participate. Develop targeted screening project within first six months. Implement screening project.		

**Goal 1:** By 2010, increase the blood lead testing rate and improve the quality of surveillance data for at-risk children in Mississippi up to 72 months of age.

**Objective 2:** By 2009, institute a process for identification of areas and populations that are at-risk for having children with elevated blood lead levels by utilizing data sources and resources.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Identify lead sources by collecting and analyzing data from environmental investigations conducted by the MSDH.	Mississippi State Department of Health	Environmental inspection data	List of most common lead sources in Mississippi.	Complete analysis and include results in Annual Report.	Complete analysis and include results in Annual Report.	Complete analysis and include results in Annual Report.
2. Match Medicaid data with MSDH blood lead surveillance data on childhood lead poisoning to characterize lead exposure patterns among Medicaid enrollees and to identify those Medicaid children who have not received a blood lead test.	Mississippi State Department of Health, Division of Medicaid	MOU between Mississippi State Department of Health and Division of Medicaid  Medicaid data	Percentage of Medicaid children with BLL test compared to percentage of Medicaid enrollees with no BLL test.	MOU obtained within first 3 months. System in place to match data.	Number of Medicaid children without BLL test will decrease by 10%.	Number of Medicaid children without BLL test will decrease by an additional 10%.
3. Acquire data on possible lead risk factors, such as housing age, poverty rates, and industrial lead sources, from other sources, such as DEQ, HUD, and the Census Bureau.	Department of Environmental Quality, US Department of Housing and Urban Development	Multiple data sources	Annual report on risk factors List of data types and sources Number of reports distributed	Risk factors identified and included in Annual Report and in the Lead Risk Profile.	Update on additional Risk factors identified included in Annual Report and Lead Risk Profile.	Update on additional Risk factors identified included in Annual Report and Lead Risk Profile.
4. Identify children who live in high-risk areas by utilizing GIS to generate maps layering various types of relevant data: pre-1950 dwellings, blood lead screening rates, EBL rates, and other lead risk factors.	Mississippi State Department of Health, Jackson State University	Geocoded addresses from blood lead screening data and other data sources described above	Report of Lead GIS study; Number of reports distributed; List of new activities planned based on GIS study	Results included in Lead Risk Profile and Annual Report.	Updated results included in Lead Risk Profile and Annual Report.	Updated results included in Lead Risk Profile and Annual Report.

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**Goal 1:** By 2010, increase the blood lead testing rate and improve the quality of surveillance data for at-risk children in Mississippi up to 72 months of age.

**Objective 3:** By 2009, implement methods to ensure complete and accurate reporting of all blood lead level testing results to the Mississippi State Department of Health.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Establish standard reporting guidelines for laboratories and providers to increase completeness of data.	Mississippi State Department of Health CLPPP and Public Health Laboratory	Updated reporting form	Copy of new reporting guidelines Percentage of providers and laboratories reporting to the CLPPP Percentage of incomplete records submitted to the CLPPP compared to percentage of complete records	Develop new guidelines within first six months. Distribute guidelines to all labs that currently report data.	Review and update. Distribute update to all laboratories reporting BLLs.	Review and update. Distribute update to all laboratories reporting BLLs.
2. Work with private laboratories and providers to ensure reporting of all blood lead test results to MSDH.	Mississippi State Department of Health— CLPPP and Public Health Laboratory	Staff  Action plan	Number of BLL tests reported annually compared to previous year	Plan of action developed and implemented.		
3. Complete yearly quality checks of laboratory and medical provider reporting.	Mississippi State Department of Health  Division of Medicaid	Develop a quality check Process	List of labs and providers whose data is incomplete at least 80% of the time  Log of phone calls, emails, and letters trying to address incomplete data	Data checked and results shared with laboratories and providers.	Data checked and results shared with laboratories and providers.	Data checked and results shared with laboratories and providers.
4. Develop a strategic plan to expand reporting requirements for blood lead levels to include levels less than 10µg/dL and require electronic reporting from all laboratories.	Lead agency: Mississippi State Department of Health Supporting agency: MSAAP, Division of Medicaid, UMC Poison Control	Staff	Percentage of laboratories reporting BLLs below 10µg/dL	Draft legislation requiring reporting of all BLLs.	Legislation passed.	

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**Goal 1:** By 2010, increase the blood lead testing rate and improve the quality of surveillance data for at-risk children in Mississippi up to 72 months of age.

**Objective 4:** By 2009, enhance and monitor the blood lead screening surveillance system.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Conduct quality data checks on a quarterly basis.	CLPPP staff	STELLAR	Percentage of complete records in STELLAR	Quality check completed quarterly.	Quality check completed quarterly.	Quality check completed quarterly.
2. Integrate blood lead data from STELLAR into an upgraded surveillance system.	Mississippi State Department of Health	IT Staff	Increased accessibility in using blood lead data surveillance system	Identify new data system.	New system implemented. Data report generated.	Data reports generated.



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**Goal 1:** By 2010, increase the blood lead testing rate and improve the quality of surveillance data for at-risk children in Mississippi up to 72 months of age.

**Objective 5:** Beginning in 2008, publish a yearly surveillance report on the burden of childhood lead poisoning and lead hazards in the state.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Develop a data analysis plan that identifies variables to include and compiles data from various sources.	Mississippi State Department of Health	STELLAR, other data sources (Medicaid, HUD, etc.)	Copy of data analysis plan provided to all MSCLPPAC members	Data analysis plan completed and distributed to 100% of MSCLPPAC members.		
2. Collaborate with Jackson State University, Institute for Disability Studies, and University of Mississippi Medical Center to analyze data.	Lead Agency: Mississippi State Department of Health	Staff from all agencies	Annual report of lead poisoning data completed 90 days of the end of the fiscal year (By September 30th).	Letter of commitments from identified parties obtained within first 3 months. Data analyzed and report generated.	Data analyzed and report generated.	Data analyzed and report generated.
3. Disseminate annual report to medical providers, city officials, housing authorities, and others statewide. Include GIS maps as these have been shown to be effective communication tools. (See Building Block example)	Mississippi State Department of Health, Lead Advisory Committee members	Staff from all agencies	Completed statistical report  Number of reports distributed	Distribute annual report to all target audiences via email, hard copy, etc.	Distribute annual report to all target audiences via email, hard copy, etc.	Distribute annual report to all target audiences via email, hard copy, etc.

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## Primary Prevention Through Health Education Activities

**Goal 2:** Encourage statewide health promotion and education concerning lead poisoning prevention.

**Objective 1:** By 2009, educate at least 50% of healthcare providers in key specialties in Mississippi's nine public health districts about the importance of and legal requirements for lead testing for high-risk children.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Coordinate with MSDH Lead Data Manager to develop and distribute Lead Risk Profile and other supporting documents for MS Public Health Districts.	MSDH Lead Agency	Distribution list	Organized evidence based format of MS pediatric blood lead poisoning data	Risk Profile created within first six months and distributed to health care providers.	Risk Profile updated and distributed to health care providers.	Risk Profile updated and distributed to health care providers.
2. Disseminate Lead Risk Assessment Questionnaire to family practitioners, OB-GYNs, and pediatricians in MS via the Mississippi Morbidity Report (MMR).	MSDH Lead Agency	Lead Questionnaire	Questionnaire published in MMR  Number of times questionnaire is published in MMR  # of providers receiving MMR	Questionnaire published in MMR two times (six months apart).		
3. Develop physician-authored educational presentations and other educational materials. Offer these to physicians and health provider organizations for publication through websites and newsletters.	MSDH Lead Agency Supporting Agencies: MS Chapter American Academy Pediatrics (AAP) MS Academy of Family Physicians (AFP) MS Chapter of American College of	Physician authored educational pieces	Number of website postings  Number of newsletter publications  List of educational materials developed	Materials created within six months. Materials posted on websites and published in newsletters.	Update materials. Post on additional websites and in newsletters.	Update materials. Post on additional websites and in newsletters.

	Obstetricians and Gynecologists (ACOG)					
4. Develop a “Myths versus Facts” sheet regarding lead poisoning in general with some specifics about MS.	MSDH Lead Agency	Examples of other states “Myths vs. Facts” sheets	Actual “Myths vs. Facts” sheet developed  Number of sheets distributed	Fact sheet created and distributed.		
5. Provide health education and training by physician-presented PowerPoint presentation and handouts in each public health district.	MSDH Lead Agency  Supporting Agencies: MS Chapter American Academy Pediatrics (AAP)  MS Academy of Family Physicians (AFP)  MS Chapter of American College of Obstetricians and Gynecologists (ACOG)  Individual clinics in the high-risk areas of the State	PowerPoint Presentation  Physician to present program  Handouts	Number of educational presentation at clinics, medical society meetings, and annual meetings of MS AAP, MS AFP, and MS ACOG  Number of providers attending trainings	At least one training conducted and handouts provided in each public health district.	At least one training conducted and handouts provided in each public health district.	At least one training conducted and handouts provided in each public health district.

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**Goal 2:** Encourage statewide health promotion and education concerning lead poisoning prevention.

**Objective 2:** By 2009, expand the pool of trained health educators who can deliver lead poisoning prevention education to health care providers, families, organizations that work with high-risk families and others in Mississippi's nine public health districts by training at least three members in each district and MSDH staff.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Develop a train-the-trainer program for other health professionals who, in turn, will provide lead poisoning prevention education to key audiences.	MSDH Lead Agency	PowerPoint presentation Handouts	Development of materials  Number of materials distributed	Materials developed.		
2. Train at least three staff members in each Public Health District to serve as lead poisoning prevention trainers for health care providers.	MSDH Lead Agency  Supporting Agencies: MSDH Public Health Districts	Presentation materials Physician to present program	Number of staff trained per health district  List and number of other interested parties invited to participate  Number of trainings offered by those trained	Train 3 staff members within 3 Public Health Districts.	Train 3 staff members within 3 additional Health Districts.	Train 3 staff members within 3 additional Health Districts.
3. Train MSDH staff, including MSCLPPP staff, nurses, social workers and the Perinatal High-Risk Management staff, and interested members of the MSDH Childhood Lead Poisoning Advisory Committee as lead poisoning prevention trainers/educators.	MSDH Lead Agency Supporting Agencies: MSDH Staff MSCLPPAC PHRM (Perinatal High Risk Management) staff Social Workers Nurses	Educational materials CLPPP expertise	Number of individuals educated through this effort  List of interested parties trained	At least one training is conducted.	At least one training is conducted.	At least one training is conducted.

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**Goal 2:** Encourage statewide health promotion and education concerning lead poisoning prevention.

**Objective 3:** By 2009, increase the number of individuals reached through educational activities conducted for the general public and in high-risk communities by offering at least one educational program in each of the nine Public Health Districts.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Provide an educational program on lead screening, risk reduction, and lead poisoning prevention to the general public in each of the nine Public Health Districts.	MSDH Lead Agency		Number of activities conducted each year within each health district  Number of individuals attending each activity	At least one activity conducted per year within each health district.	At least one activity conducted per year within each health district.	At least one activity conducted per year within each health district.
2. Provide health educational presentations, trainings, and materials to community – based partners (community-based organizations, civic clubs, schools, faith-based, ethnic, and other service groups) working with targeted populations in each of the nine Public Health Districts.	MSDH Lead Agency  Supporting Agencies: Community-based organizations  Faith-based organizations  Civic organizations	Educational packets	Number of trainings conducted and list of organizations trained per public health district per year  Number of individuals that attend trainings	At least one training activity conducted per year within each health district.	At least one training activity conducted per year within each health district.	At least one training activity conducted per year within each health district.

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## Primary Prevention Through Risk Reduction Activities

**Goal 3:** Reduce the exposure of children to lead hazards.

**Objective 1:** By 2010, decrease exposure to residential lead-based paint hazards by training approximately 225 rental property owners and 75 contractors in lead-safe work practices, encouraging 30% of all realtors to complete visual assessment training, implementing an outreach campaign to encourage rental property owners to conduct visual assessments, and developing a strategy to identify and publicize mechanisms for financing repairs.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Provide training in lead-safe work practices to contractors, and maintain a list of trained persons that is accessible to the public.	Lead Agency: MSDH Supporting Partners: MSU Extension Service, Atrium (trainer)	Publicity for training delivering MS DEQ website	Number of contractors that receive lead-safe work practices training and work safety in pre-1978 properties	25 contractors trained, including leaders of the MS Association of Contractors.	50 contractors trained.	50 additional contractors trained.
2. Provide training in lead-safe work practices to rental property owners.	Lead Agency: MSDH Supporting Partners: MSU Extension Service; Atrium	Publicity for training deliveries	Number of training sessions offered by MSU or Atrium  Number of rental property owners trained	25 rental property owners trained.	100 rental property owners trained.	Another 100 rental property owners trained.
3. Implement outreach to encourage all realtors to take HUD's free on-line Lead-Based Paint Visual Assessment Training, educate	Lead Agency: MSDH Supporting Partners: MS	Outreach materials on HUD website and MS DEQ website	Number of realtors that complete the visual assessment	MS Association of Realtors leadership completes training.	1/10 of all realtors complete training.	Another 1/10 of all realtors complete training.

buyers, sellers, and renters about lead disclosure rule and the importance of repairing lead hazards.	Association of Realtors		training			
4. Implement outreach to encourage rental property owners to conduct visual assessments for deteriorating paint and repair the painted surface safely using lead-safe work practices.	Lead Agency: MSDH Supporting Partners: Media Utilities, Local Agencies	Sample press materials and utility inserts	Number of materials sent out by partners	Outreach materials sent to all property owners at least once.		
5. Obtain new sources of financing lead hazard repairs and publicize how property owners can access these financing mechanisms.	Lead Agency: MSDH Supporting partners: Risk Reduction Committee and MHC Legislative subcommittee	Best practices for financing mechanisms  Ability to prepare lead hazard control grant application  Contact info for providers of loans and grants	Lead hazard repair financing is available  Number of property owners given information about financing	Legislative proposal for tax credit, loans, grants, or other new financing mechanism.  Lead hazard control grant application submitted.  Offer topics at annual housing conference related to rental repair financing for property owners statewide.  Number of homes with lead hazards addressed.	Legislation enacted.  Lead hazard control grant awarded.  Offer financial workshops statewide in conjunction with other MSDH marketing events.	New financing mechanism is used by property owners.  Evaluate success based upon increase in use of rental repair funds by property developers.

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**Goal 3:** Reduce the exposure of children to lead hazards.

**Objective 2:** By 2010, decrease exposure to residential lead-based paint hazards by revising and enforcing State and local housing policies in approximately 14 municipalities with populations greater than 5,000.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY08	FY09	FY10
1. Secure a Governor's proclamation encouraging appointed officials in municipalities with populations greater than 5,000 to adopt and enforce the International Property Maintenance Code (IPMC), publicize the proclamation by sending out letters to seek local officials' commitment to adopt the IPMC and offer technical assistance to jurisdictions that have adopted the IPMC or are considering adopting it or similar policies.	Lead Agency: MSDH Risk Reduction workgroup, Legislative committee and the Lead Advisory Committee	Model Code	Number of municipalities that agree to adopt the IPMC and enforce its prohibitions against interior and exterior peeling paint  MSDH ascertains success of enforcing IPMC	Proclamation drafted within first six months and signed; Letters sent out; Technical assistance provided.	1/10 of municipalities (seven) adopt IPMC.	Another seven municipalities adopt IPMC.
2. Modify section 89-8-23 (1) of the Residential Landlord and Tenant Act to require the repair of deteriorated paint in pre-1978 housing using lead-safe work practices (unless paint has been found lead-free by a lead-based paint inspection or risk assessment).	Lead Agency: MSDH Risk Reduction workgroup, Legislative committee and the Lead Advisory Committee	Codes adopted elsewhere	State officials adopt and enforce changes to the Residential Landlord and Tenant Act to address lead hazards	MSDH educates governor and legislative leaders.	Legislation introduced and enacted to change the Residential Landlord and Tenant Act.	Property owners notified and inspectors trained Revised tenant-landlord code enforced.



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### Case Management Activities

**Goal 4:** Ensure 100% of MS children with elevated blood lead levels receive appropriate medical, educational, nutritional, developmental, and lead hazard control interventions.

**Objective 1:** By 2009, provide case management services to all children with blood lead levels greater than or equal to 10 µg/dL (A case begins at a venous confirmed EBLL ≥10 µg/dL).

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY 08	FY 09	FY10
1. Review and revise Case Management Protocol and forms.	MSDH Lead Agency Supporting agencies: Medicaid and local medical providers	Staffing  Health Education Material  CDC Guidelines	Initial revised case management protocol and forms implemented by January 1, 2008  Annual review of protocol complete by June of each Fiscal Year starting FY09	Case Management protocols revised and forms created by January 1, 2008.	By June, Case Management protocols and forms reviewed and updated if necessary.	By June, Case Management protocols and forms reviewed and updated if necessary.
2. Review and revise Environmental Case Management protocols.	MSDH Lead Agency  Supporting Agencies:  MDEQ EPA	Staffing  Materials and equipment for testing and reporting	Initial revised environmental case management protocol and forms implemented by January 1, 2008  Annual review of protocol complete by June of each Fiscal Year starting FY09	Environmental case management protocols reviewed and revised by January 1, 2008.	Environmental case management protocols reviewed and revised if necessary.	Environmental case management protocols reviewed and revised if necessary.

3. Disseminate protocols to healthcare providers, local health departments, Medicaid and WIC offices, Early Intervention and others as needed in each of the nine Health Districts.	MSDH Lead Agency Supporting agencies: Medicaid and local medical providers	Partnerships with Medicaid and local medical providers to disseminate information.	Number and type of individuals that receive the protocol  Number of trainings conducted	Disseminate protocols to target groups in each of the Nine Health Districts.  Offer training to local public health departments.	Disseminate protocols to target groups in each of the Nine Health Districts.	Disseminate protocols to target groups in each of the Nine Health Districts.
4. Develop and implement an evaluation plan to assess the effectiveness of implementation.	MSCLPPP Supporting agencies: Medicaid and local medical providers	Staffing STELLAR data Evaluation criteria	Plan developed in FY08  Percentage of cases meeting CDCs recommendations for case management and environmental case management time frames	Evaluation plan developed within first six months. Plan implemented.		
5. Update and disseminate the Childhood Lead Poisoning Prevention Guidance document.	MSDH Lead Agency  Supporting Agencies  Division of Medicaid	Staffing	Number of documents distributed.	Document updated and disseminated within first six months.		

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**Goal 5:** Increase staff and funding for lead poisoning prevention case management activities.

**Objective 2:** In 2009, start receiving appropriate funding for environmental investigations and personnel needs through partnerships with Medicaid and other MSDH programs.

Activities	Responsible Parties	Resources Needed	Outcome Measures	FY 08	FY 09	FY 10
1. Collect data to establish appropriate rate of reimbursement for environmental investigations and case management home visits.	Lead Agency: MSDH	Other states practices and reimbursement practices  CMS policy and recommendations	Cost of providing services determined.	Data collected.		
2. Seek Medicaid reimbursement for environmental investigations (up to 2 visits) of primary residences in 2008 and for up to two case management home visits in homes of children with confirmed BLL of 15µg/dL or greater in 2008 and thereafter.		Number of environmental investigations and home visits conducted in MS for the last FY  Cost of providing services	Medicaid reimbursement rate for case management home visits and for Environmental investigations  Comparison between Medicaid reimbursement and estimated costs for providing services	Present data to Medicaid. Begin negotiations.	Finalize negotiations and begin billing if successful.	

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## REFERENCES

CDC. 2002. Managing Elevated Blood Lead Levels Among Young Children. Centers for Disease Control and Prevention. Atlanta.

CDC. 2005, May 27. Blood lead levels – United States, 1999-2000. *Morbidity and Mortality Weekly Report (MMWR)*, 54 (20): 513-516. Centers for Disease Control and Prevention.

Centers for Disease Control and Prevention. *Healthy People 2010*. Available on-line at: [www.healthypeople.gov/document/html/objectives/08-11.htm](http://www.healthypeople.gov/document/html/objectives/08-11.htm)

Pirkle, J.L., Kaufmann, R.B., Brody, D.J., Hickman, T., Gunter, E.W., and Paschal, D.C. 1998. Exposure of the U.S. population to lead, 1991 - 1994. *Environmental Health Perspectives*, 106, 745-750.

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## **APPENDIX A: Lead Advisory Committee Members**

### **Surveillance and Analysis**

<i>Chair:</i>	Stephanie Ivy	MSDH Closing the Gap
<i>Members:</i>	Dr. Sophia Leggett	Jackson State University
	Dr. Robert Cox	University of MS Medical Center
	Elizabeth Lynch	MS Division of Medicaid
	Teri Snazelle	MSDH Public Health Laboratory
	Charles Sledge	MSDH Health Services Data Unit

### **Primary Prevention Through Health Education**

<i>Chair:</i>	Michael Hughes	MS Safe Kids
<i>Members:</i>	Gretchen Mahan	MS Chapter of the American Academy of Pediatrics
	Elizabeth Foster	MSDH CLPPP Health Educator
	Barbara Kidd	MS Association of Educators
	Frank Yates	MS Association of Educators
	Kathy Kolar	MS Children's Justice Center
	Pam Frazier	Rose of Sharon Church
	Robert Hamrick	MS Department of Human Services
	Donna Speed	MSDH Nutrition Director
	Bobbie Shaffett	MSU Extension Service
	Kim Pigott	MS Consumer Product Safety Commission
	Elvie Guthrie-Lewis	MSDH WIC District IX

### **Primary Prevention Through Risk Reduction**

<i>Chair:</i>	Jason Spencer	MS Association of Redevelopment Officials
<i>Members:</i>	John Spears	MS Department of Housing and Urban Development
	Keith Maranger	MSDH Environmental Services
	Gwen Braddy	MS Department of Environmental Quality
	Janice Shows	MS Association of Realtors
	McArthur Washington	MSDH Environmental Services
	Deborah Conerly	City of Hattiesburg
	Rick Eades	TAGMA
	David Hancock	MS Home Corporation
	Sister Christine Blair	Mercy Housing and Development

### **Case Management**

<i>Chair:</i>	Lori Genous	MSDH SIDS/CLPPP
<i>Members:</i>	Elizabeth Lynch	MS Division of Medicaid
	Gina McCrory	Mallory Community Health Center
	Gail Jones	MSDH Health Services Nurse District VIII

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Glennis Patton      *MSDH Health Service Nurse District I*  
Ramona Beardain    *Delta Health Partners*

**Evaluation**

*Chair:*      Laurie Moore      *MSDH Asthma Program*  
*Members:*    Dr. Marinelle Payton    *Jackson State University*  
                  Gloria Tatum      *MS Department of Environmental Quality*  
                  Roy Hart            *Institute for Disability Studies University of Southern MS*

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## APPENDIX B: Communities with more than 5,000 individuals

Table B1. Mississippi communities with a population size above 5000 individuals.

	<b>Community</b>	<b>Population</b>		<b>Community</b>	<b>Population</b>	
1	Waynesboro city	5197		36	West Point city	12145
2	Pontotoc city	5253		37	Canton city	12911
3	Ripley city	5478		38	McComb city	13337
4	Winona city	5482		39	Cleveland city	13841
5	Leland city	5502		40	Corinth city	14054
6	Crystal Springs city	5873		41	Horn Lake city	14099
7	Gulf Hills CDP	5900		42	Yazoo City	14550
8	Diamondhead CDP	5912		43	Madison city	14692
9	Forest city	5987		44	Grenada city	14879
10	Richland city	6027		45	Moss Point city	15851
11	West Hattiesburg CDP	6305		46	Brandon city	16436
12	Aberdeen city	6415		47	Ocean Springs city	17225
13	Pass Christian city	6579		48	Long Beach city	17320
14	Columbia city	6603		49	Laurel city	18393
15	Waveland city	6674		50	Greenwood city	18425
16	St. Martin CDP	6676		51	Natchez city	18464
17	Senatobia city	6682		52	Ridgeland city	20173
18	Hernando city	6812		53	Clarksdale city	20645
19	Amory city	6956		54	Olive Branch city	21054
20	Louisville city	7006		55	Starkville city	21869
21	Batesville city	7113		56	Pearl city	21961
22	Philadelphia city	7303		57	Clinton city	23347
23	Kosciusko city	7372		58	Columbus city	25944
24	Byram CDP	7386		59	Pascagoula city	26200
25	Petal city	7579		60	Vicksburg city	26407
26	New Albany city	7607		61	Southaven city	28977
27	D'Iberville city	7608		62	Tupelo city	34211
28	Holly Springs city	7957		63	Meridian city	39968
29	Bay St. Louis city	8209		64	Greenville city	41633
30	Booneville city	8625		65	Hattiesburg city	44779
31	Brookhaven city	9861		66	Biloxi city	50644
32	Picayune city	10535		67	Gulfport city	71127
33	Gautier city	11681		68	Jackson city	184256
34	Oxford city	11756				
35	Indianola city	12066				

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## APPENDIX C: Responsibilities for providing services

Table C1. Roles associated with varying blood lead levels.

Public Health Department/Cool Kids Provider Role	Primary Care Medical Provider Role	Lead Case Manager/CLPPP Role
<b>Confirmed Blood Lead Levels 10 – 14 µg/dL</b>		
<ol style="list-style-type: none"> <li>1. Inform family of EBLL.</li> <li>2. Provide anticipatory guidance.</li> <li>3. Provide hazard and risk reduction education to family.</li> <li>4. Include history of EBLL as a part of permanent medical problem list in the child’s medical record.</li> <li>5. Obtain developmental screening (i.e.: Denver II).</li> <li>6. Evaluate iron status with Hct/Hgb testing and provide appropriate treatment as indicated.</li> <li>7. Repeat BLL testing every three months, until 2 venous results &lt; 10 µg/dL, or 3 results &lt; 15 µg/dL, then annually.</li> </ol>	<ol style="list-style-type: none"> <li>1. Include history of EBLL as part of permanent medical problem list in the child’s medical record.</li> <li>2. If child is not receiving medical services through public health department, proceed as in steps 1-6.</li> <li>3. Refer to nutritionist for nutritional counseling.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform primary care provider (PCP) of EBLL results.</li> <li>2. Encourage family compliance with BLL testing schedule.</li> </ol>
<b>Confirmed Blood Lead Levels 15 – 19 µg/dL</b>		
<ol style="list-style-type: none"> <li>1. Inform family of EBLL.</li> <li>2. Provide anticipatory guidance.</li> <li>3. Provide hazard and risk reduction education to family.</li> <li>4. Include history of EBLL as a part of permanent medical problem list in the child’s medical record.</li> <li>5. Obtain developmental screening (i.e.: Denver II).</li> <li>6. Evaluate iron status with Hct/Hgb testing and appropriate treatment as indicated.</li> <li>7. Repeat BLL testing every three months until two venous results, &lt; 10 µg/dL, or three &lt;15 µg/dL, then annually. If BLL remains 15 – 19 µg/dL after six months, repeat annually, and case should be treated as BLL 20-44 µg/dL.</li> </ol>	<ol style="list-style-type: none"> <li>1. Include history of EBLL as a part of permanent medical problem list in the child’s medical record.</li> <li>2. If child is not receiving medical services through public health department, proceed as in steps 1-6.</li> <li>3. Refer to nutritionist for nutritional counseling.</li> </ol>	<ol style="list-style-type: none"> <li>1. Consult with MSDH clinician and inform child’s primary care provider.</li> <li>2. Inform primary care provider of EBLL results.</li> <li>3. Within two weeks of receipt of EBLL results, a home visit by a qualified individual is conducted using the appropriate form. A copy of the assessment form will be forwarded to the CLPPP environmentalist and the child’s medical provider.</li> <li>4. Encourage family compliance with BLL testing schedule.</li> <li>5. For children with persistent BLLs 15–19 µg/dL or anything &gt;20 µg/dL, referrals will be made for environmental investigation.</li> <li>6. If BLL persists at 15 – 19 µg/dL, Lead Case Manager initiates services specified for children with BLL 20 –44 µg/dL.</li> </ol>



Public Health Department/Cool Kids Provider Role	Primary Care Medical Provider Role	Lead Case Manager/CLPPP Role
<b>Confirmed Blood Lead Levels 20 – 44 µg/dL</b>		
<ol style="list-style-type: none"> <li>1. Inform family of EBLL.</li> <li>2. Provide anticipatory guidance.</li> <li>3. Provide hazard and risk reduction education to family.</li> <li>4. Include history of EBLL as a part of permanent problem list in child’s medical record.</li> <li>5. Obtain developmental screening (i.e.: Denver II).</li> <li>6. Evaluate iron status with Hct/Hgb testing and appropriate treatment as indicated.</li> <li>7. Screen other children in the household &lt; 6 years old.</li> <li>8. Repeat BLL within one to two month intervals for 6 months until these three conditions are met: a) BLL has remained &lt; 15 µg/dL, for at least six months and b) lead hazards have been removed or child lives in a lead-safe environment, and c) no new exposure, then annually.</li> <li>9. If BLL remains between 20 – 44 µg/dL, after six months, refer to state CLPPP for additional environmental follow-up.</li> </ol>	<ol style="list-style-type: none"> <li>1. Include history of EBLL as a part of permanent problem list in the child’s medical record.</li> <li>2. If child is not receiving medical services through public health department, proceed as in steps 1-6.</li> <li>3. Refer to nutritionist for nutritional counseling.</li> </ol>	<ol style="list-style-type: none"> <li>1. Consult MSDH clinician and inform child’s primary care provider.</li> <li>2. Within two weeks of receipt of EBLL results, home visit by a qualified individual is conducted using the appropriate form. A copy of the assessment form will be forwarded to the CLPPP environmentalist and the child’s medical provider.</li> <li>3. Within one week, a referral will be made to the State Environmentalist for an environmental home investigation. The State Environmentalist will communicate the results of the investigation to the family.</li> <li>4. CLPPP will develop a written Plan of Care for the family to include hazard education, encouragement of compliance, BLL testing schedule, referrals for social, developmental, nutritional, housing remediation, and other services as appropriate.</li> <li>5. Monitor progress toward achievement of Plan of Care goals at least quarterly.</li> <li>6. Conduct a home visit before case closure. Review and close case when criteria have been met for discharge and CLPPP notifies medical provider and family of discharge.</li> </ol>

Public Health Department/Cool Kids Provider Role	Primary Care Medical Provider Role	Lead Case Manager/CLPPP Role
<b>Confirmed Blood Lead Levels 45 – 69 µg/dL</b>		
<ol style="list-style-type: none"> <li>1. Inform family of EBLL.</li> <li>2. Provide anticipatory guidance.</li> <li>3. Provide hazard and risk reduction education to family.</li> <li>4. Include history of EBLL as a part of permanent problem list in the child’s medical record.</li> <li>5. Obtain developmental screening (i.e.: Denver II).</li> <li>6. Evaluate iron status with Hct/Hgb testing and appropriate treatment as indicated.</li> <li>7. Screen other children in the household &lt; 6 years old.</li> <li>8. Encourage compliance with BLL testing schedule.</li> </ol>	<ol style="list-style-type: none"> <li>1. Complete medical and history exam.</li> <li>2. Evaluate iron status with Hct/Hgb testing and appropriate treatment as indicated.</li> <li>3. Consider referral to a toxicologist or other physician in a tertiary care center (for children) who has experience with chelating agents.</li> <li>4. Repeat BLL within one to two month intervals for 6 months until the following criteria are met: a) BLL has remained &lt; 15 µg/dL for at least six months and b) lead hazards have been addressed c) Annually after (a) and (b) have been met.</li> <li>5. If BLL remains between 20-44 µg/dL after 6 months, refer to State CLPPP for additional follow-up.</li> </ol>	<ol style="list-style-type: none"> <li>1. Consult MSDH clinician and inform child’s primary care provider of EBLL.</li> <li>2. Immediately refer to primary care provider for complete medical history, physical exam, developmental screening.</li> <li>3. Within 48 hours of receipt of EBLL results, home visit by a qualified individual is conducted using the appropriate form. A copy of the assessment form will be forwarded to the CLPPP environmentalist and the child’s primary care medical provider.</li> <li>4. Refer to Early Intervention Program for developmental evaluations.</li> <li>5. Results of all home assessments and evaluations will be forwarded to the primary care provider.</li> <li>6. Within 48 hours, environmental investigation will be completed and the State Environmentalist will be responsible for communicating the results to the family and providing a copy of the report to the child’s primary care provider.</li> <li>7. CLPPP will develop a written plan of care for the family including hazard education, encouragement of compliance with BLL testing schedule, referrals for social, developmental, nutritional, housing remediation, and other services as appropriate.</li> <li>8. Monitor progress toward achievement of Plan of Care quarterly.</li> <li>9. Conduct a home visit before case closure. Review and close case when criteria for discharge have been met. Notify PCP and family of discharge.</li> </ol>

Public Health Department/Cool Kids Provider Role	Primary Care Medical Provider Role	Lead Case Manager/CLPPP Role
<b>Confirmed Blood Lead Levels <math>\geq 70 \mu\text{g/dL}</math></b>		
	<ol style="list-style-type: none"> <li>1. Refer to a toxicologist or other physician in a tertiary care center (for children ) who has experience in chelating agents.</li> <li>2. If chelation is involved, notify CLPPP immediately.</li> <li>3. Repeat BLL within one to two month intervals for six months until the following criteria are met: a) BLL has remained <math>&lt; 15 \mu\text{g/dL}</math> for at least six months and b) lead hazards have been addressed c) annually after (a) and (b) have been met.</li> <li>4. If BLL remains between 20-44 <math>\mu\text{g/dL}</math> after six months, refer to State CLPPP for additional environmental follow-up.</li> <li>5. Evaluate iron status with Hct/Hgb testing and appropriate treatment as indicated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Medical Emergency – Consult with MSDH Clinician.</li> <li>2. Notify Child’s primary care provider immediately.</li> <li>3. Within 24 hours of receipt of EBLL results, home visit by a qualified individual is conducted using the appropriate form. A copy of the assessment form will be forwarded to the CLPPP environmentalist and the child’s medical provider.</li> <li>4. Refer to Early Intervention Program for developmental evaluations.</li> <li>5. Results of all home assessments and evaluations will be forwarded to the primary care provider.</li> <li>6. Within 48 hours, environmental investigation will be completed and the State Environmentalist will be responsible for communicating the results to the family and providing a copy of the report to the child’s primary care provider.</li> <li>7. CLPPP will develop a written plan of care for the family including hazard education, encouragement of compliance with BLL testing schedule, referrals for social, developmental, nutritional, housing remediation, and other services as appropriate.</li> <li>8. Monitor progress toward achievement of Plan of Care quarterly.</li> <li>9. Conduct a home visit before case closure. Review and close case when criteria for discharge have been met. Notify PCP and family of discharge.</li> </ol>

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## **APPENDIX D: Criteria for chart audits by EPSDT**

**Evaluation: The current criteria for chart audits by EPSDT are included below.** A yearly review of 10% of the child health records reveal 100% compliance as shown by documentation on appropriate forms.

1. The local health department nurse/clinician shall discuss with the child's care giver lead poisoning interventions and assess the child's risk for exposure at each EPSDT visit beginning at six months to six years of age.
2. The local health department nurse shall collect blood lead specimens routinely at ages 12 and 24 months.
3. The local health department nurse shall collect blood lead specimens at any time between ages six and 72 months if risk assessment indicates possible exposure.
4. The local health department nurse shall collect blood lead specimens annually (ages six to 72 months) for children with risk factors and blood lead levels less than 10µg/dL.
5. The local health department nurse shall follow the MSDH Child Health Manual guidelines for retesting and follow-up.
6. The local health department nurse shall repeat any capillary blood lead samples greater than 10µg/dL with a venous confirmation.
7. The local health department nurse shall provide family lead education for any child whose lead level is ten or greater, as well as screen other children in the household under six years of age.
8. The local health department nurse/social worker shall conduct a home visit for noncompliant patients with persistent blood lead levels of 15-19µg/dL and complete the Lead Screening Follow-up Visit Form.
9. The local health department nurse/social worker shall refer children with lead levels greater than 20 µg/dL or persistent 15-19 µg/dL for an environmental investigation.
10. The local health department nurse shall refer children whose blood lead levels are greater than 10µg/dL to a nutritionist for nutritional counseling and check Hematocrit/Hemoglobin.

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## APPENDIX E: Outcomes, Indicators, and Data Sources

Short-Term Outcomes	Short-Term Indicators	Data Sources	Long-Term Outcomes	Long-Term Indicators	Data Sources
High risk geographic areas and populations identified during Year 1	# and list of counties with more than 25% of available housing built pre-1950 # and list of counties with more than 25% of population living below poverty level # and list of industrial lead sources by county	Census data, DEQ and EPA data	Enhanced support for creating/modifying necessary legislation	# of legislators supporting new/ updated legislation addressing lead poisoning/ lead hazards # and copies of new/ updated laws passed related to lead poisoning/ lead hazards	List of legislative measures submitted
Partners implement specific activities within Lead Elimination Plan	# of partners reporting activities to the CLPPP's Lead Elimination Activity Database	Meeting minutes, Update reports from partners	Increased number of eligible children screened	# of eligible children screened	CLPPP surveillance data
Improved education materials and training resources available	# and list of updated educational materials and training resources # and list of new educational materials and training resources developed	CLPPP educational materials and training resource list	Increased number of children with elevated blood lead levels (EBLLs) receiving referral and follow-up	# of children with EBLLs receiving referral and follow-up	CLPPP surveillance data
Increased number of community outreach efforts	# and list of community outreach efforts reported to the CLPPP's Lead Elimination Activity Database	Update reports from partners and sub grantees	Increased number of families educated about lead poisoning and conducting risk reduction activities	# of families educated about lead poisoning # of families conducting risk reduction activities	Update reports from Public Health District staff, partners, and sub grantees
Increased number of providers testing for lead poisoning	# and list of all providers testing for lead poisoning	Medicaid provider list	Decreased number of children who are lead poisoned	# of children who are lead poisoned	CLPPP surveillance data

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<b>Short-Term Outcomes</b>	<b>Short-Term Indicators</b>	<b>Data Sources</b>	<b>Long-Term Outcomes</b>	<b>Long-Term Indicators</b>	<b>Data Sources</b>
Increased number of public and organizational policies addressing lead poisoning/ lead hazards	# and copies of new/ updated public policies # and copies of new/ updated organizational policies	List and updates from related organizations and public entities	Eliminate lead poisoning in children six years of age and younger by 2010	# of children six years of age and younger who are lead poisoned	CLPPP surveillance data