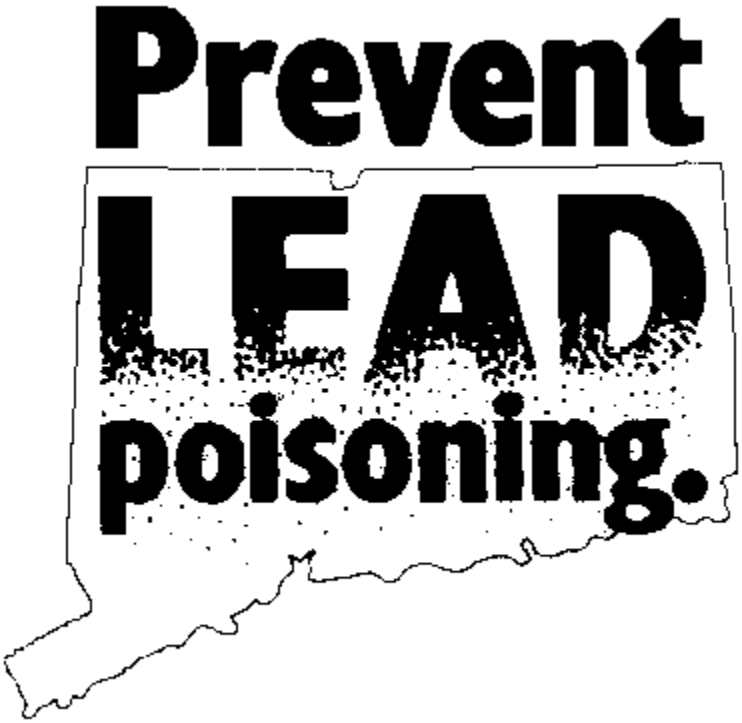

Connecticut Department of Public Health
Childhood Lead Poisoning Prevention Program
A Plan for the Elimination of Childhood Lead Poisoning by 2010

August 2004

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Abbreviations Used in this Plan

BLLs	Blood Lead Levels
CADH	Connecticut Association of Directors of Health
CAHEC	Connecticut Area Health Education Centers
CAHS	Connecticut Association for Human Services
CCLPETF	Connecticut Childhood Lead Poisoning Elimination Task Force
CDBG	Community Development Block Grants
CDC	Centers for Disease Control and Prevention
CEDSS	Connecticut Electronic Disease Surveillance System
CEUs	Continuing Education Units
CIRTS	Connecticut Immunization Registry and Tracking System
CLPPP	Connecticut Department of Public Health Childhood Lead Poisoning Prevention Program
DCF	Department of Children and Families
DCP	Department of Consumer Protection
DECD	Department of Economic and Community Development
DPH	Department of Public Health
DSS	Department of Social Services
EBLLs	Elevated blood lead levels
ELR	Electronic laboratory reporting
EPA	Environmental Protection Agency
EPSDT	Early and Periodic Screening, Diagnosis and Treatment ? (testing)
GIS	Geographic Information Systems
HQS	Housing Quality Inspection Standards
HUD	United States Department of Housing and Urban Development
LAMPP	Lead Action Medicaid Primary Prevention Program
LBP	Lead Based Paint
LEMU	Connecticut Department of Public Health Lead Environmental Management Unit
LHD	Local Health Department
LPPC	Lead Poisoning Prevention Control
LSWP	Lead Safe Work Practices
MCOs	Medicaid Managed Care Organizations
MIS	Management Information Systems
MOA	Memorandum of Agreement
PI	Public Information
PTOs	Parent Teacher Organizations
RAP	Rental Assistance Program
RFP	Request for Proposal
RLTCs	Regional Lead Treatment Centers
SDE	State Department of Education
UCONN	University of Connecticut
WIC	Women, Infants, and Children Program
XRF	X-ray Florescence Analyzer

Executive Summary

This Childhood Lead Poisoning Elimination Plan was developed in 2004 by members of the Connecticut (CT) Childhood Lead Poisoning Elimination Task Force (Task Force), ad-hoc members of the Task Force's three committees, and staff from the CT Department of Public Health (DPH) Lead Environmental Management Unit (LEMU) and Childhood Lead Poisoning Prevention Program (CLPPP). The group met over several months to determine the current state of efforts to reduce lead poisoning in the State, and divided into three committees to develop recommendations for the elimination of childhood lead poisoning as a public health issue in Connecticut. The overall goal of this plan is to decrease the rate of children under six residing in CT with blood lead levels of 10 μg/dL or above to less than 1%. This will be accomplished by:

- Focusing on primary prevention efforts, especially in those areas where incidence is currently highest,
- Increasing the number and rate of children screened,
- Providing environmental inspections and intensive case management services to children with an EBLL $\geq$ 15μg/dL,
- Decreasing the numbers of at-risk properties and increasing the availability of lead-safe low income housing,
- Greatly enhancing community knowledge of and interest in childhood lead poisoning prevention and elimination.

Each of the Task Force committees met and made recommendations for the elimination of childhood lead poisoning in CT. Please refer to Appendix A for a complete list of committee members. These recommendations were reviewed and adopted by consensus of the Task Force members in June 2004. While the Task Force recognized that some of these recommendations have fiscal implications at a time when both state and federal resources are taxed, they also recognized that if sufficient resources and effort are expended over the short term (4-6 years), the problem can be eradicated in the State, and the long term cost savings will far outweigh the up front costs. Moreover, the Task Force sought to integrate efforts with other initiatives that are ongoing at lower cost, rather than starting new initiatives, and made novel recommendations to increase funds available to support these efforts. This plan is divided into six chapters with recommendations described within.

As of September 1, 2004, the Task Force will be divided into four sub-committees to begin the work of implementing these recommendations. These sub-committees will prioritize the recommendations in this report and each will select 1-3 recommendations that they will work on in the first year of implementation. Sub-committees will meet monthly, and a staff member from CLPPP or LEMU will be assigned to each to offer any necessary technical assistance. The success of these efforts will be evaluated using the evaluation measures described after many of the recommendations.

Chapter One:

Childhood Lead Poisoning in

While great strides have been made in reducing the incidence of childhood lead poisoning in Connecticut over the past decade, there are continuing challenges to its elimination as a public health concern in the state. This summarizes the efforts to date to lower the incidence of lead poisoning in the state, including the legislative, programmatic, and other initiatives undertaken statewide, as part of federal efforts, and local, provide an overview of the change in the nature of lead poisoning over time, and the current state of the issue in terms of Epidemiologic and Environmental indicators. While the current data management system that captures lead poisoning screening and results is lacking, recent analysis has determined that screening rates are estimated at 70%, though uneven throughout

Poisoning in CT

the state, and that lead poisoning is concentrated among the state's poorest children. Medicaid clients' incidence of elevated blood lead levels (EBLLs) is more than 4 times that of non-Medicaid clients in the state, and 64% of cases are concentrated in four of CT's largest and poorest cities. CT continues to be a wealthy state overall with areas of great poverty. Housing stock in these areas tends to be older, and often in disrepair, greatly increasing the risk of lead poisoning for children residing in these areas. The integration of new data management systems will greatly enhance the ability to track progress in meeting the goals outlined in this plan. The environmental analysis highlights the slow nature of reducing the number of at-risk properties in the state.

Chapter Two: Environment and Housing

Current efforts to eradicate at-risk properties in CT are managed through a complex system of state and local agencies, state and federal legislation, public health codes, and local ordinances. Limits within and to this system include uneven enforcement, limited resources for inspection and abatement, inadequate legislation, lack of incentive for proactive inspection and remediation, and limited cooperation from other housing programs to ensure lead safe housing, particularly for poor children in CT. The recommendations in this chapter seek to remedy these deficiencies from a number of perspectives.

Recommendation 1. Modify current regulations and statutes (e.g. CGS §19a-111) to lower the threshold for mandatory epidemiological investigation and lead inspection from 20 µg /dL to a confirmed blood lead level of 15 µg/dL. Explore mechanisms for providing increased support to local health departments most directly impacted by the increased case-load.

Recommendation 2. Revise the CT Public Health Code, statutes, and state regulations to strengthen the ability of the state and local health departments to enforce existing codes, statutes, and regulations.

Recommendation 3. Expand the use of lead safe work practices for lead abatement, hazard reduction, and home maintenance and improvement by: (1) mandating that contractors, maintenance personnel, or property owners participate in trainings, (2) funding trainings for contractors, maintenance personnel and property owners be trained prior to doing work that may generate lead dust or fumes, (3) expanding the resources available to support the costs of undertaking these efforts, and (4) making regulatory changes to allow for lead-safe work practices. These will include interim controls to be utilized in place of full abatement in circumstances where an EBLL child is NOT involved.

Recommendation 4. Enforce compliance with existing HUD lead safety requirements through improved inspection. Expand application of these requirements to all other Federal Rental Assistance Programs, State Assistance Programs (including Rental Assistance Program, RAP), and all other local Certificate of Occupancy Programs.

Recommendation 5. Implement the use of "Limited Lead Hazard Evaluations" during other (non-lead) home inspections in CT by requiring their addition to all ongoing housing inspections by local code officials and sanitarians and by private, Department of Consumer Protection (DCP) licensed home inspectors.

Recommendation 6. Encourage homeowners to test their own property for lead by eliminating the reporting requirements to the State and local health department (LHD) when a certified private sector Lead Inspector inspects an owner-occupied single family home, providing there is not a child under the age of six (6) years with a known EBLL in residence. Consideration will be given to expanding this exclusion on reporting requirements for

other private sector inspections of residential properties that do not involve an EBLL child.

Recommendation 7. Explore the development of a web-based registry of lead-safe and lead-free properties to be maintained on a statewide basis by a private entity.

Recommendation 8. Develop guidelines on cases under which it may be permissible to allow children to remain in residence during abatement; in all other cases relocation will be required during abatement.

Chapter Three:

Screening

While screening rates in CT appear to be comparable to those in neighboring states, there has not been any systematic, reliable way to generate screening incidence and lead poisoning prevalence rates. The information that is available shows tremendous variation both geographically and across population (Medicaid versus non-Medicaid), and outlines the gaps that need to be addressed to achieve the goal of reducing lead poisoning prevalence among children under 6 years old to less than 1%. Efforts to increase screening rates must include a combination of legislative and regulatory changes, collaboration between organizations and programs serving at-risk populations, enhancement of monitoring compliance with current codes and legislation, and enhanced resources to meet increased screening demands.

Recommendation 9. Legislatively mandate blood lead screening for all one and two year olds in CT.

Recommendation 10. Expand methods to monitor compliance with this new screening mandate by: (1) collaborating with CT Department of Social Services (DSS) and their Medicaid managed care organizations (MCO) to address provider compliance, (2) requiring that family, group, and center child care facilities monitor and report missing lead screenings of one and two year olds entering their programs, (3) exploring with the Women, Infants and Children Program (WIC) the addition of lead screening as a condition of enrollment and recertification in the program as well as the training of WIC case workers to encourage lead testing with their clients (concurrent with currently required hemoglobin testing); and by (4) adding lead testing to the medical form required by DCF for new cases whenever a child under 5 years old is involved in a complaint of abuse or neglect.

Recommendation 11. Utilize the new CLPPP system to identify for LHD all children within their jurisdiction who have not been screened by the age of 2 to monitor and improve compliance with new screening requirements.

Recommendation 12. Increase capacity to provide lead testing services at the State Laboratory including: private pay reimbursements for blood lead tests and personnel and equipment to handle the anticipated increase in blood lead level screenings as well as environmental testing (dust wipes, paint chips).

Recommendation 13. Investigate the possibility of generating revenue by creating a nominal tax or fee that would be tied to the housing market through closing costs to support lead screening efforts.

Chapter Four:

Case Management

Adequate case management is at the core of ensuring that long-term damage is minimized for those children affected by lead poisoning. While not central to the primary prevention of this plan, it is critical to the mission of the DPH, and all those engaged in public health efforts in Connecticut. The current case management system is designed to offer case management to children with an EBLL of 20 µg /dL or greater, a number that does not address the detrimental health effects that occur below that level. Moreover, uneven implementation of current guidelines, lack of resources, and lack of collaboration with other programs serving high-risk populations have limited the effectiveness of case management efforts. Recommendations in this chapter seek to address these deficits and build upon strengths in the current system.

Recommendation 14. Establish regulations to require case management for all children in CT with blood lead levels of 15 µg /dL or greater, by amending State statutes.

Recommendation 15. Enhance and improve case management for children with EBLLs in CT by: (1) working with DSS to require more clinical case management by Medicaid MCOs with EBLLs as the criteria that triggers and justifies case management. (2) building partnerships among MCOs and the Regional Lead Treatment Centers (RLTCs), and (3) piloting, evaluating, and then expanding intensive efforts to improve case management in Connecticut's five largest cities.

Recommendation 16. Expanding resources for case management services of EBLL children in CT by restoring to previous levels, and securing additional funding for case management and other supportive services, provided by the two RLTCs. Seek opportunities for additional funding for LHDs to enhance their capacity to assist with case management.

Recommendation 17. Promote the use of Lead Safe Homes for families whose homes are being abated by: (1) enforcing requirement for LHDs to relocate families with a child with an EBLL, (2) building partnerships with other housing programs, and (3) expanding and supporting Lead Safe Homes by ensuring adequate resources for their survival.

Recommendation 18. Improve case management at the LHDs by increasing oversight and support to local programs from CLPPP, LEMU, and the RLTCs.

Chapter Five:

Surveillance

Surveillance efforts are core components of formatively evaluating prevention efforts. Surveillance efforts of State and LHDs will be greatly enhanced by the implementation of the new CLPPP data management system, and through its linkage to other state and federally funded programs (Medicaid and Immunization). These improvements will allow the ongoing monitoring and targeting of efforts to those areas most in need of assistance and support the elimination of childhood lead poisoning in the state.

Recommendation 19. Develop surveillance data for programmatic use, increase compliance with existing reporting (lab based) of blood lead levels, and utilize Geographic Information systems (GIS) mapping to match EBLL cases with abatement activities.

Recommendation 20. Partner with the immunization registry to identify providers who consistently fail to screen their patients for lead poisoning at 1 and 2 years of age.

Chapter Six:

Training and Public Information

Without the awareness, interest, and skills among members of the public, success in eradicating lead poisoning in the state cannot be achieved. After reviewing both public information and training initiatives in both lead poisoning and from other public health disciplines, the Task Force assessed ongoing efforts in the state to train and raise the level of awareness of childhood lead poisoning in targeted groups and constituencies. Throughout the process the Task Force recognized the limits of undertaking training and public information efforts without a single body overseeing and coordinating those efforts. Moreover, lessons learned from social marketing highlight the need to maximize resources by collaborating, rather than creating new campaigns. Gaps in the current program were highlighted and combined with training and public information needs generated by the recommendations of the Task Force in other areas. The result is three recommendations that include a detailed list of training and public information efforts that need to be undertaken to eliminate the risks of lead poisoning in the state.

Recommendation 21. Coordinate all lead poisoning public information and training efforts statewide. Establish an organization/body to serve as a central clearinghouse for training and public information activities.

Recommendation 22. Increase the level of awareness, concern, and compliance among target audiences through a statewide public information/social marketing campaign.

Recommendation 23. Enhance ongoing statewide training efforts through better coordination, expanded availability, better recruitment, and enhanced publicity/recruitment through the organization/program developed in Recommendation 21.

Chapter 1: Childhood Lead Poisoning in Connecticut

Introduction: The Childhood Lead Poisoning Elimination Challenge

Childhood lead poisoning is the most common environmental health problem that affects children in Connecticut. Yet, it is entirely preventable. Blood lead levels as low as 10 μg/dL have been shown to affect a child's learning and behavior; very high blood lead levels, ≥70 μg/dL, can cause seizures, coma, and death. EBLLs impact our most vulnerable population, our children, at a time that their developing bodies are most susceptible to damage.

The number of children with EBLLs in Connecticut has decreased since 1995. In 1995, approximately 4300 children had EBLLs. According to 2000 U.S. Census data, there are approximately 270,000 children under the age of six in Connecticut. In 2002, approximately 1700 (2.5%) children had EBLLs (≥ 10 μg/dL). Connecticut has over 435,000 housing units built prior to 1950 according to the 2000 U.S. Census. Connecticut Lead Poisoning Prevention Program (CLPPP) surveillance data indicates that CT's five largest cities-New Haven, Bridgeport, Hartford, Stamford, and Waterbury - account for 65% of children with EBLLs (≥ 10 μg/dL). Children living in these urban areas are at the greatest risk for becoming lead poisoned because they are often in a lower socio-economic group and live in properties that are older and often in disrepair.

Low-income families are most at risk for lead exposure, because many live in older, substandard housing in need of repair. Housing stock in poor repair represents a particular risk for poisoning children. These families may also experience healthcare disparities due to lack of continuous healthcare coverage, lack of access to providers even if insured, poor nutrition, or the financial inability to meet life's basic needs consistently. What healthcare this population does receive may not be preventive in nature. In spite of blood lead screening being a requirement for the Medicaid population, a collaborative pilot study that began in 1997 among the DPH, DSS, and the Children's Health Council (now defunct) has indicated that only 67-77% of Medicaid covered children, and 74-80% of non-Medicaid covered children are screened in CT by age 6. These screening rates are comparable to those in neighboring states that legislatively mandate screening for all children, but still are not high enough to both effectively track the prevalence of lead poisoning in all children and all areas of Connecticut, and to ensure that lead poisoned children receive all necessary care.

Barriers that have prevented the elimination of childhood lead poisoning have many facets that must be addressed successfully and simultaneously. They include: lack of education and awareness; inconsistent provider adherence to childhood lead screening recommendations and appropriate clinical management; lack of healthcare coverage; poverty; cultural issues; low literacy levels; lack of affordable lead-safe housing to meet housing demands; limited funding available for abatement; lack of mandated universal screening to actually identify the extent of lead poisoning in Connecticut; and limited resources to address the issue.

The CT Childhood Lead Elimination Task Force, convened in 2004, represents a diverse group of individuals with expertise in a variety of lead-related disciplines, including health experts, housing experts, social service agencies, and the legal profession. The Task Force has identified solutions and recommended policy changes that are grounded in the reality of eliminating lead poisoning under current conditions and climates in accordance with Healthy People 2010 Objectives. As of July 1, 2004, the Task Force will be divided into four sub-committees to begin the work of implementing these recommendations. These sub-committees will prioritize the recommendations in this report and each will select 1-3 recommendations that they will work on in the first year of implementation. Sub-

committees will meet monthly, and a staff member from the DPH CLPPP or LEMU will be assigned to each to offer any necessary technical assistance. The success of these efforts will be evaluated using the evaluation measures described after many of the recommendations. The DPH CLPPP has progressed to a point where a statewide, comprehensive lead elimination plan is critical to achieve the Healthy People 2010 goal of childhood lead poisoning elimination.

The CLPPP received initial funding from the Centers for Disease Control and Prevention (CDC) in 1992 to conduct lead poisoning prevention activities. Local programs received guidance and assistance from the DPH. Practices were instituted to ensure proper medical and environmental management of children with EBLLs. Steps were taken to monitor compliance with the Connecticut General Statutes 19a. -111 that defined proper investigative protocols and methods of abatement of lead hazards in 1992. The CT State Legislature lowered the reportable blood lead level to 10 μg/dL. The level at which environmental and epidemiological interventions were required for children under six years old was lowered to 20 μg/dL. The adoption of the Lead Poisoning Prevention and Control Regulations in September of 1992 gave increased authority and power to the State and local health authorities to enforce investigation and abatement standards. These regulations required state approval of training courses offered for lead abatement personnel and lead inspectors, in order to develop a capable workforce. Lead educational pamphlets were designed, and educational seminars were conducted by LHDs and housing officials in 1992. In this same year, state-funded training courses were offered in the use of the X-ray Florescence (XRF) analyzer for lead paint detection. A Health Educator was also hired at the DPH to formulate a statewide plan for public and professional education and train-the-trainer workshops.

Between 1992 and 1994, the DPH convened a Lead Poisoning Prevention Task Force. Representatives of a wide range of disciplines and constituencies met on an ongoing basis to assess the State's current approach to the prevention of pediatric lead poisoning and to develop innovative strategies for advancing prevention and treatment efforts statewide. The Chair of the Task Force was a state legislator. The Vice-Chair, Dr. Schonfeld, was the representative of the CT Chapter of the American Academy of Pediatrics. The Task Force proposed a legislative agenda that included enhancements to the state regulations.

At the time of the Task Force, the CLPPP had no medical or nursing staff. The Task Force discussed alternatives for filling the existing gap in medical oversight and case management in Connecticut. In recognition of the state structure of LHD oversight and the unique medical academic infrastructure (i.e., two medical schools/children's hospitals – one in the southern and one in the northern half of Connecticut – that were able to collaborate in order to provide statewide medical coverage), it was decided that instead of enlarging the staff at the DPH, an innovative approach forming a partnership between the DPH and the two medical schools would be developed. As a result, in July 1994, the State began funding two RLTCs – one at the Saint Francis Hospital/CT Children's Medical Center and one at Yale-New Haven Medical Center – to provide multi-disciplinary, comprehensive, integrated and community-based services to children, their families, and their communities affected by pediatric lead poisoning and to advance pediatric lead poisoning prevention, intervention and treatment services throughout Connecticut through the provision of direct services, education, collaboration and networking with other agencies, consultation to legislators and advocacy groups, and research. These two RLTCs, in close collaboration with each other and the CLPPP, serve as extensions of the DPH in the medical and broader community and provide a range of services including: 1) comprehensive medical diagnosis and treatment services for children with lead poisoning; 2) comprehensive case management; 3) neurodevelopmental evaluations of children impacted by lead poisoning; 4) lead safe transitional housing (with Lead Safe Homes established in

affiliation with both RLTCs); 5) professional and community education (including the development of medical guidelines, treatment protocols, and patient educational materials; continuing medical education presentations; and educational presentations to a wide range of lay and professional audiences, ranging from puppet shows for preschoolers to grand rounds for physicians); 6) community outreach (including outreach workers who conduct home visits; presentations at health fairs, Head Start and daycare programs, faith congregations, etc.); each RLTC sponsors a yearly Lead Awareness Event; 7) establishment of a statewide network of medical providers with expertise in the treatment of pediatric lead poisoning to promote state-of-the-art treatment services even in communities outside of the cities where the RLTCs are located.

In 1993, the CT Legislature passed Special Public Act No. 93-321 "An Act Concerning the Recommendations of the Lead Poisoning Prevention Task Force," which helped strengthen the efforts of lead poisoning prevention by documenting the State's commitment to provide prevention activities. During this session, the legislature also allocated special funds to be granted to five targeted LHDs with the largest populations of children at risk for lead poisoning. In 1993, a nurse was also hired at the DPH as a Case Manager to provide medical monitoring and ensure proper and timely medical follow-up of children with EBLLs. An Epidemiologist was hired this same year to develop a statewide lead surveillance database. This enabled the program to produce statistics and reports, useful for planning, evaluation, and designing interventions.

The continued CT Legislature funding for the five LHDs, as well as funds from the Preventive Health, Health Services Block Grant, allowed several LHDs to provide childhood lead surveillance activities. From 1995 to the present, new initiatives were more data driven, due to a more comprehensive database, developed by the CDC and used by the CT CLPPP. This lead tracking system was made available to LHDs.

In 1998, the CT Legislature mandated universal reporting of all blood lead levels per General Statutes 19a-110, and CLPPP saw the beginning of electronic submission of data to the DPH by private and state laboratories.

The regulatory arm of childhood lead poisoning activities at the DPH is the LEMU. Both CLPPP and LEMU work as a team to address every aspect of lead poisoning from primary prevention to lead abatement. LEMU ensures that the activities performed by consultant contractors, including fieldwork, are being done in a manner consistent with state regulations and requirements. LEMU monitors statewide lead inspection activities utilizing the Quarterly Report forms that are required to be submitted to the DPH by LHDs, and conducts site audits of LHDs receiving lead funds.

A CLPPP Screening Advisory Committee was convened in 2000 to develop screening recommendations for CT, based on CDC guidelines, to increase the number of at-risk children being screened for lead poisoning. This recommendation for universal blood lead screening was implemented in 2001, and has been re-asserted when the Committee has met in subsequent years. Shortly thereafter, a need for a more robust data system was identified to provide more pertinent reports for analysis of all aspects of lead poisoning in Connecticut, as a means of evaluating effectiveness of the program and guiding future endeavors. A new Data Management System (the CLPPP System) is being integrated at the DPH, and will hold individual level lead screening data and property hazard data. This system is expected to "go live" in the summer of 2004.

Connecticut is struggling with the issue of childhood lead poisoning because in spite of decreasing blood lead levels, secondary prevention rather than primary prevention is still the common approach used to address the problem. Primary prevention addresses lead poisoning before a child becomes

poisoned, such as ensuring lead-safe housing. Secondary prevention addresses lead poisoning after a child has become lead poisoned, such as removing a child from the source. The CLPPP has undergone many recent changes within the DPH - a new team of staff members, together with the Task Force and other community stakeholders who are knowledgeable about lead issues, is committed to achieving the goal to eliminate childhood lead poisoning in Connecticut by 2010.

Organization of Lead Poisoning Prevention Efforts in Connecticut

In CT, the DPH oversees ninety-six LHDs and health districts. Local health has the responsibility of enforcing lead hazard control regulations and case management. Some of the LHDs have HUD-funded programs for lead remediation in their districts or towns, while others must rely on statewide programs to receive dollars for abatement. There are a wide variety of relationships between housing code enforcement officers, building inspectors, and LHDs. Many operate as stand-alone entities without a shared goal and a definite lack of communication and accountability is noted. There is a strong need for a standardized protocol to define duties and responsibilities and foster communication between agencies. Connecticut faces a challenge to induce cooperation and buy-in from our larger cities because of their diverse city government organizational structures and the limited availability of resources for funding remediation activities.

Despite the challenges the state faces, Connecticut has many assets that can be shared to accomplish this action plan, especially the commitment of the DPH to eliminate lead poisoning and funding from federal, state, and local sources (CDC, CT State Legislature, Community Block Grant funding, Lead Action Medicaid Primary Prevention Program (LAMPP)). The CLPPP also has dedicated staff and stakeholders invested in helping protect the children in Connecticut, through regulations for reporting, remediation efforts, and licensing of abatement contractors. These assets, coupled with the recommendations in this plan, will be used to move Connecticut from a reactive approach to a proactive approach to eliminate childhood lead poisoning.

Epidemiologic and Environmental Analysis: Epidemiology of Childhood Lead Poisoning in Connecticut

Sources of information

Epidemiologic information about childhood lead poisoning currently exists in various places. The CLPPP has maintained a blood lead surveillance system since 1994. In 2004, a new enhanced surveillance system known as the CLPPP system is being implemented. This new system will greatly facilitate record keeping and reporting. At the same time, a second, much larger data system is also entering the early stages of implementation at the DPH. This larger effort is the Connecticut Electronic Disease Surveillance System (CEDSS). CEDSS will allow information from different programs at the DPH to be linked together. Electronic laboratory reporting will be one feature of CEDSS, and electronic laboratory reporting of blood lead levels will be one of the initial data streams to be included.

Medicaid data is housed at the Connecticut DSS. A recent Memorandum of Agreement between the DSS and the DPH will facilitate data sharing between these two agencies in the near future. This sharing will greatly facilitate the calculation of screening rates for Medicaid patients. LEMU receives and compiles quarterly information regarding property inspections and abatement activities from the local health departments. The new CLPPP system will enable LEMU to track abatement activities and use GIS to identify areas with high-risk properties.

Blood lead screening

The DPH Laboratory receives approximately 80,000 blood lead lab results each year. In 2002, 84,134 results were reported. Over the past decade, children under six years of age have consistently accounted for more than 90% of these blood tests. In 2002, children under 6 comprised 92% of all lead tests conducted in CT. Until now, test data have included duplicate counts and it has been difficult to determine how many children were tested in a given year. Furthermore, it has been difficult to determine for a given child or group of children, whether they had ever been tested. Instead, the counts and rates that the current system generates are yearly totals. For example, 46% of all one and two year olds were tested for lead poisoning in 2002. This is not the same as saying that 46% of all one and two year olds were *ever* tested for lead as of 2002, since a two year old who had only been tested in 2001 would not be included in the 2002 data. Birth cohort tracking is an alternate way of calculating rates that involves following children over time to determine their lifetime screening experience and test results.

Though birth cohort estimates are not produced routinely as part of the current surveillance system, cohort screening and poisoning rates were calculated as part of a special effort that began in 1997 among DPH, DSS and the Children's Health Council. The birth cohorts for 1997, 1998, and 1999 were examined. Screening data through November 1, 2001 were used to determine how many children born in each of these years were *ever* tested for lead. As of November 1, 2001, most of the children in the 1997 birth cohort were 4 years old. Figure 1 shows the screening rates as of November 1, 2001, by year of birth for children in Connecticut, and by Medicaid status. Because of the complexities of how the data were kept and the difficulties in cleaning the data, these rates must be interpreted as estimates rather than as definitive rates.

Figure 1. Estimates of children screened from birth through November 1, 2001		
Birth Cohort	Medicaid	Non-Medicaid
1997	77.5 %	77.2 %
1998	75.5 %	79.5 %
1999	67.4 %	73.6 %

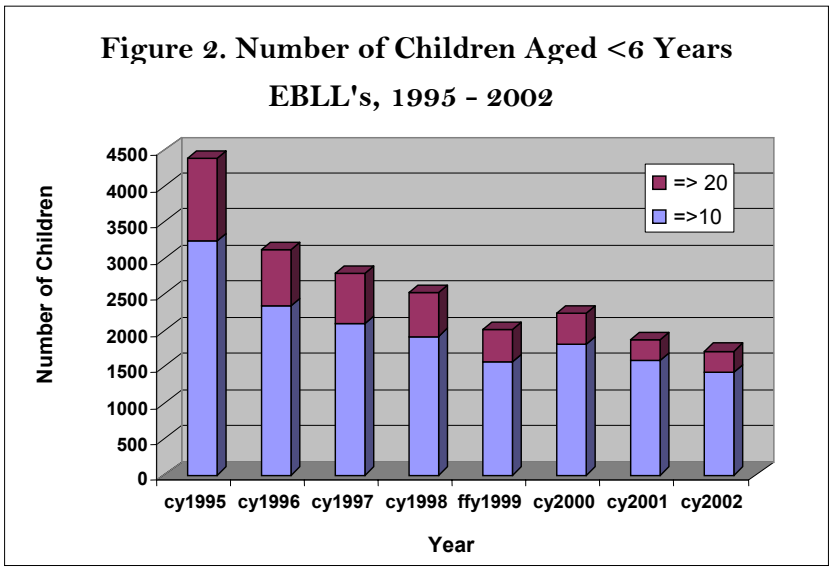
At first glance, it appears that screening rates are going down each year. But since the data are organized by the year of birth of the child, what looks like a decline in rates is really an increase in rates as the children age and have had more time to be tested.

In terms of absolute numbers, there were 2870 children on Medicaid in the 1997 birth cohort who were not screened as of November 1, 2001, 3461 children in the 1998 cohort and 4851 children in the 1999 cohort. That's a total of 11,182 children in the age range 1 year, 10 months to 4 years, 10 months, who were enrolled in Medicaid, and who were not tested for lead as of November 1, 2001. Similarly, for the children not enrolled in Medicaid, there were a total of 20,421 children in that age range who had not been screened.

Screening rates vary widely by town in Connecticut. Birth cohort data are not currently available by town. The new CLPPP system will be able to calculate them. What are available are annual screening rates by town—in other words the percentage of children in a certain age group that were screened in a given year. For the year 2002, screening rates ranged from a low of literally 0% for one and two-year olds (in a town which had 34 toddlers aged one or two) to a high of 100% (in a town which had 30 toddlers). Besides these and a handful of other extreme cases, the annual screening rates for one and two-year olds by town tended to range from the teens to the mid-seventies. While these are not birth cohort estimates, they reveal tremendous variation across towns, and predict that once cohort data are available by town, that they will show similar variation across Connecticut.

Declines in Lead poisoning

Lead poisoning among children has declined a great deal in Connecticut over recent years. Limitations in the way data is kept have precluded the calculation of yearly prevalence rates. What are available by year, however, are counts of children with EBLLs from 1995 through 2002. Figure 2 shows the number of children under 6 years of age who were found to have blood lead levels greater than 10 µg/dL and greater than 20 µg/dL, respectively. It appears that the child population in Connecticut was fairly stable during this time period (from 1990 to 2000 the number of children under 5 years of age in Connecticut declined only 1.7%). There is also no reason to think that screening coverage changed appreciably during this time period. Therefore, these counts show a decline in the absolute number of children who were found to have EBLLs, and this trend probably reflects a decline in the true prevalence of poisoned children.



Another measure of the extent of lead poisoning among Connecticut's children is the percentage of all blood tests that show EBLLs. This percent was calculated for children less than 6 years, by year, for Connecticut's largest cities. These percentages, shown in Figure 3, show a precipitous drop in EBLLs in recent years. The cities of Bridgeport, New Haven, and Hartford saw declines of 72%, 51%, and 68% respectively in the number of tests that showed EBLLs.

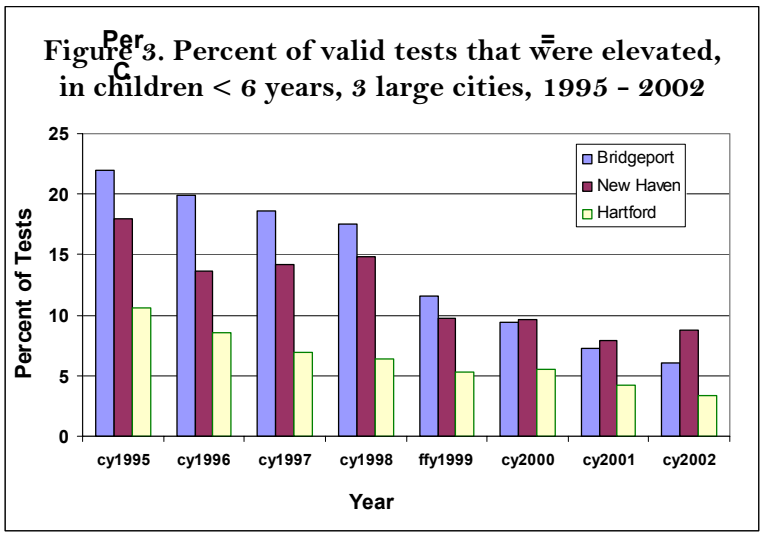


Figure 3. Percent of valid tests that were elevated, in children < 6 years, 3 large cities, 1995 - 2002

Lead poisoning prevalence

Prevalence rates *were* calculated as part of the birth cohort analysis**.** Figure 4 shows lead poisoning prevalence rates for the 1998 and 1999 birth cohorts, for children who were enrolled in Medicaid and those who were not, as of October 2001. The 1999 birth cohort children would have been 2 years old, or nearly 2, and the 1998 children would have been 3 years old, or nearly 3. Again since these figures were calculated as part of a special effort that tried to address system-wide short-comings of the data, they must be interpreted with caution as estimates.

Figure 4. Estimated percentage of children with Elevated Blood Lead Levels from birth, through October 1, 2001.

Birth Cohort	Medicaid			Non-Medicaid		
	10-19 µg/dL	>20 µg/dL	Total	10-19 µg/dL	>20 µg/dL	Total
1998	5.5%	1.3%	6.8%	1.4%	.2%	1.6%
1999	4.5%	1.0%	5.5%	1.0%	.3%	1.3%

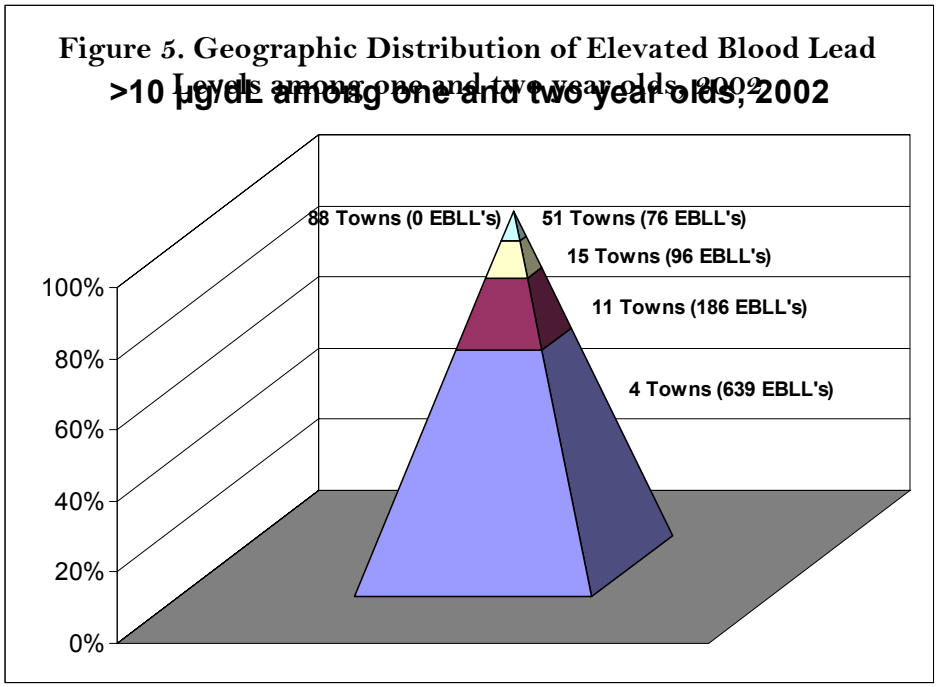
Comparing the children who were Medicaid clients with the children who were not, shows that the children on Medicaid were more than four times as likely to have EBLLs than children who were not enrolled (6.8% versus 1.6% for 1998; 5.5% versus 1.3% for 1999). This finding for Connecticut is very similar to the national finding that children served by federal health care programs (defined as Medicaid, WIC and/or targeted by the Health Center Program) had EBLLs of nearly five times the rate than children not in these programs[1].

Combining the prevalence rates of EBLLs with screening rates, can give a general sense of how many children with lead poisoning might be going undiagnosed in Connecticut. Considering the 1997 and 1998 birth cohorts together, there were 6331 children aged 2 years 10 months to 4 years 10 months who were on Medicaid and who had not been screened for lead as of November 1, 2001. Similarly, there were approximately 12,920 children in that age group who were not enrolled in Medicaid and who were not screened during that time period. If we apply the EBLL prevalence rates of the children from the 1998 cohort who *were* screened (6.8% and 1.6% respectively), it generates a rough

[1] US General Accounting Office

estimate that there might have been about 638 cases of lead poisoning that went undiagnosed among children in this age range, as of November 2001 (431 children on Medicaid and 207 not on Medicaid). This is not a precise estimate since the risk of lead poisoning changes over the course of early childhood. It does, however, give a ballpark sense of how many children may be going undiagnosed in Connecticut. Also, since the 638 estimate includes children from 2 years 10 months to 4 years 10 months only, the actual number of children being missed would be greater when children from older and younger age groups are considered.

Lead poisoning by town and risk factors



There were 1,011 valid EBLLs reported in 2002 for children 1 and 2 years of age. Town of residence was known for 997 of these children. Four of Connecticut's largest cities (Bridgeport, Hartford, New Haven, and Waterbury) accounted for 639 or 64% of all EBLLs. These same four cities only accounted for 17% of Connecticut's one and two year old population in 2000. Another 11 cities and towns contributed 186 EBLLs (reporting 10 to 30 EBLLs each), accounting for another 19% of the total. Fifteen towns reported 5-9 EBLLs each, and 51 towns reported 1 to 4 EBLLs. Eighty-eight towns had no children aged 1 and 2 who were screened and who had EBLLs. Figure 5 shows how a small number of cities and towns in Connecticut (Bridgeport, Hartford, New Haven, and Waterbury) account for a disproportionate number of EBLLs.

Knowing that four of Connecticut's largest cities accounted for a disproportionate share of EBLLs raises the question: Is the prevalence of lead poisoning higher in these cities, or were more children diagnosed because screening was more comprehensive there? The answer appears to be that both are true. These four cities had a combined one-year screening rate of 69% for one and two-year olds (individually they ranged from 62% to 73%), compared to the statewide average of 46%. At the same time, though, the prevalence rate was also higher-- 4% of all children screened in these cities had elevated levels, compared with the statewide average of 2.5%. Similarly, the towns that did not report as many EBLLs had both lower screening rates and lower proportions of EBLL children among the children who were screened. Figure 6 (page 9) shows EBLLs, screening rates and % EBLLs among those tested, for 3 groups of cities and towns.

Figure 6. Elevated Blood Lead Levels among one and two year olds, 2002					
	# EBLLs	**Combined Scr. Rate**	**% EBLLs among those tested**	**% housing stock before 1960**	**% families below poverty level**
Connecticut	997 (100%)	46%	2.5%	48%	5.6%
4 cities[2]	639 (64%)	69%	4.0%	62%	19.2%
11 cities and towns[3]	186 (19%)	52%	5.0%	51%	7.4%
154 cities and towns	172 (17%)	36%	0.8%	42%	3.7%

It has been established that children in low-income families who live in older housing are at increased risk for lead poisoning[4]. The situation in Connecticut is no different. The four cities that had the most EBLLs also have a poverty rate for families that is nearly 4 times the state average. They also have a proportionately higher number of older housing units. The pattern holds true for the 11 cities and towns that also had a (combined) high prevalence rate and contributed a disproportionate number of EBLLs. These 11 towns also had proportionally more poverty and a higher number of older units than the state average.

Housing and Environment

There have not been many surveys that have considered the housing stock in Connecticut. The single best source of housing information is the US Census. One analysis of census housing data is the Comprehensive Housing Authority Strategy (CHAS) Databook put out by HUD. For Connecticut-specific estimates, the Department of Economic and Community Development (DECD) used the formulas in the CHAS analysis to estimate the number of housing units in Connecticut that are at high risk of having lead paint hazards. The DECD analysis concluded that roughly 17.7 percent of Connecticut's total housing units present potential lead-paint hazards to the families who live in them. The following table (Figure 7) shows the estimated number of hazardous units by year groupings.

Figure 7. Age of Housing Stock			
	Pre-1940 Housing Units	1940-1959 Housing Units	1960-1980 Housing Units
Total	307,378	333,654	339,132
Affordable to low income households	112,402	80,214	113,575
Housing units w/ lead paint (probably)	101,161	64,171	70,416

[2] Bridgeport, Hartford, Waterbury and New Haven
[3] Bristol. Hamden, Manchester, Meriden, New Britain, New London, Norwich, Norwalk, Stamford, West Haven, Windham
[4] U.S. General Accounting Office, Lead Poisoning: Federal Health Care Programs Are Not Effectively Reaching At-Risk Children, GAO/HEHS-99-18, Washington DC, January 1999.

The most common source for lead exposure for children is lead-based paint that has deteriorated into paint chips and lead dust[5]. In Connecticut, 99% of the 372 dwellings in which a lead hazard was identified during the one-year period 7/1/2001- 6/30/2002 had a lead paint hazard (a non-paint source of lead was found in addition to paint in 7% of inspected properties.)

When a child is found to have a confirmed (venous) blood lead level of 20 μg/dL or greater, an epidemiologic investigation including a comprehensive lead inspection of the child's residence is required by law in CT. The DPH notifies the respective LHD when a "case" is initiated. An epidemiological investigation and a comprehensive lead inspection are performed by the LHD (or is contracted out under LHD authority). The property owner is then responsible for submitting an abatement plan, and abatement should begin within 45 days of receiving the order. After abatement is performed, then the property is subsequently inspected, including a visual inspection and the collection of laboratory samples. If the property is "cleared" then a letter is sent.

Local health departments are required to submit quarterly reports related to lead inspection and abatement activities to the CT Commissioner of Public Health. LEMU receives and compiles these quarterly reports. This compilation then serves as the source for statewide information for the entire sequence of events. The percentage of LHDs that submitted quarterly reports has gone up over each of the last 3 years, from 72% to 80% to 91% for the most recent year available. Similarly, the number of completed inspections and the number of completed abatements have also gone up in each of the last 3 years. This may be due, in part, to increased vigilance on the part of both the DPH and LHDs, in stressing timeliness and adherence to abatement guidelines.

On the next page is a flowchart (Figure 8) that shows statewide information for this process for the one-year period 7/1/2001- 6/30/2002. The information is based on reports received from 94 out of a possible 103 local health departments (91%). Though many of the dwelling units reported on here were identified because of an EBLL $\geq$20 μg/dL in a child resident, not all were. Other circumstances can trigger an investigation, including EBLLs of $\geq$10 μg/dL at some LHDs[6], and concern about additional units in a building that has at least one unit with a lead hazard.

Future direction of the epidemiology of childhood lead poisoning in Connecticut

The new data systems being implemented at the DPH during the current year will enable epidemiologic analysis far beyond what has been possible, or feasible, to date. These new capabilities will be especially important as the recommendations and initiatives from this Plan go forward; it will be important to have baseline data and to be able to monitor changes and improvements as they occur.

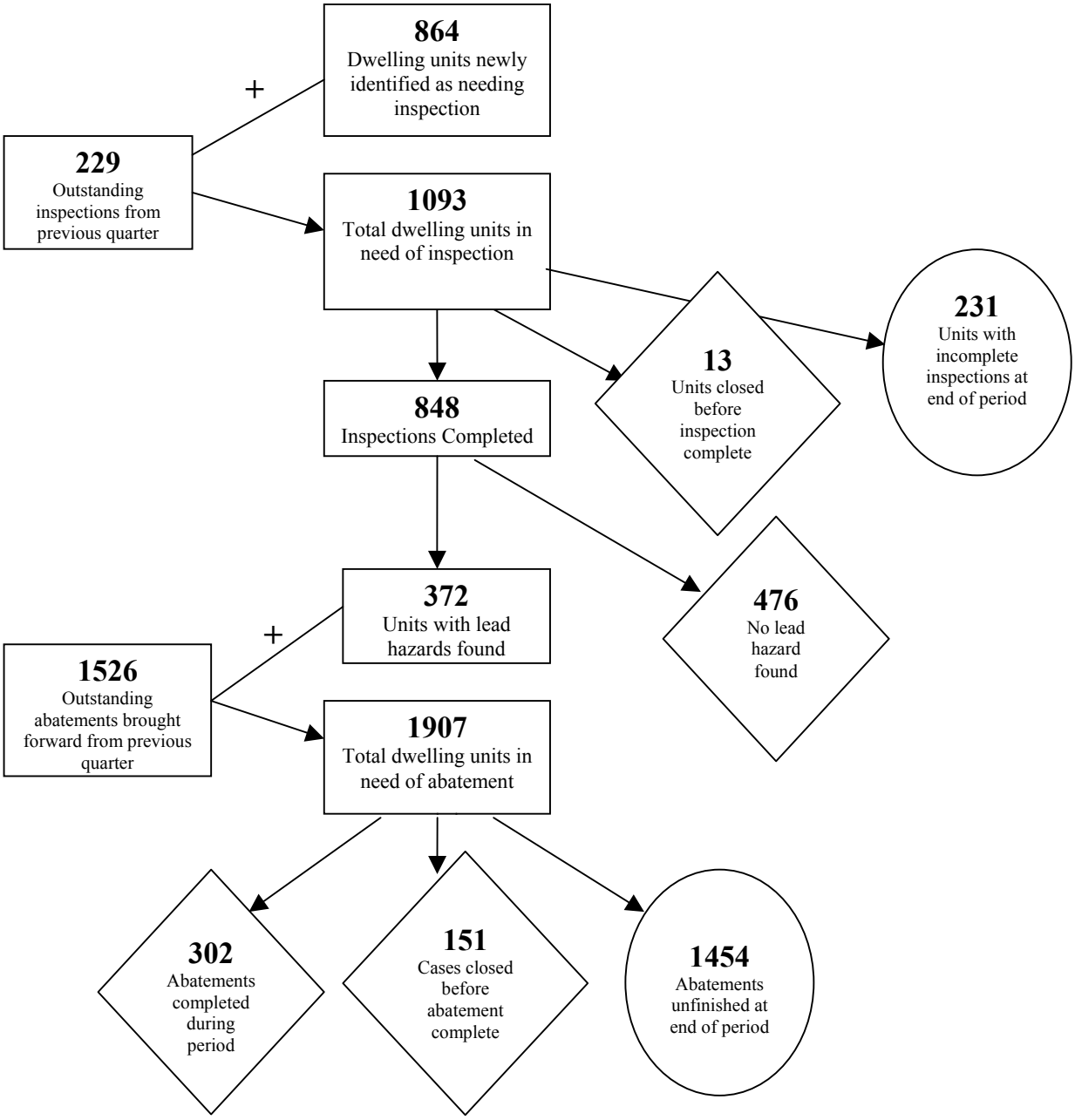
The epidemiology of lead poisoning is unique in that it combines clinical, demographic and environmental variables. Although it can be a challenge to gather this information, when it is combined, it can be potentially powerful and can paint a more complete picture than any single source alone can. GIS can be especially useful since mapping permits overlays of data and therefore opportunities to make connections and see relationships. Already, patterns have emerged that show overlap in the larger cities among children who are at elevated risk, older housing, higher screening rates and higher prevalence rates. Additional information to be considered include Medicaid data, possibly immigrant population data, housing census data, housing units that have been determined to pose lead-paint hazard if possible, and possibly properties that are known to need inspection or

[5] CDC, Preventing Lead poisoning in young children: a statement by the Centers for Disease Control, Atlanta, GA, US Dept of Health and Human Services, Public Health Service, 1991

[6] Some local city ordinances or policies require investigation at levels as low as 10 μg/dL

abatement. The end goal of all this is to direct programming and develop interventions. To the extent that the epidemiology can define populations and geographic locales that have elevated risk, then prevention efforts can be targeted to maximize benefits.

Figure 8. Reported Inspection & Abatement Activity for 94 Local Health Departments - 7/1/2001-6/30/2002



These figures were provided by the Lead Environmental Management Unit at the CT Department of Public Health and are self-reported (by LHD); therefore there may contain some discrepancies.

Chapter 2: Environment and Housing

Introduction

At the present time, CT's methods for inspecting properties and ordering the abatement of toxic levels of lead-based paint remain largely reactionary. This pattern of reaction is based upon the enforcement responsibility of the LHD, which is conducting the inspection, primarily to gather evidence of an existing situation of noncompliance, and does not allow for primary prevention. Prevention has always been the best course of action to avoid health problems. Why then should this philosophy differ when it applies to lead poisoning - an affliction that is described as being one that is "totally preventable"? The Task Force has examined the role that code enforcement agencies and established law play in creating a milieu best suited to being proactive in decreasing lead poisoning of children by 2010.

The use of lead-based paint was banned in 1978. Therefore, homes built before 1978 have a probability of containing painted or stained components that contain toxic levels of lead. According to the DECD 2000 Consolidated Plan for Connecticut, 84% of the state's housing was built before 1980 and 35% was built before 1950.

In response to this public health crisis, the US Department of Housing and Urban Development (HUD) has established laws which address the prevalence of lead paint hazards in housing for which federal funds will be used for rehabilitation or for homes which shall be designated for tenants receiving federal subsided housing allowances. Such laws define how lead remediation activities shall be conducted, who shall be allowed to perform such activities, and the criteria that need to be met for the premises to be considered safe of lead dust hazards. The Task Force recommends adherence to HUD safety protocols for other housing situations, such as Section 8 housing.

Reduced federal funds have resulted in reduced monies to state and local governments. This trickle down effect has adversely impacted services provided by local governments in response to the needs of CT residents. Thus, the paradox presents itself: How do local governments bridge the growing gap between providing necessary services and addressing financial capability? The Task Force sought to answer this question by utilizing existing resources in such a way as to make minimal impact on already over-burdened budgets and create innovative and efficient means to address the issue of lead poisoning prevention.

By encompassing a wide array of venues in which the need for taking preventive measures can be evaluated and by limiting the arenas where improper work practices are utilized, we can better guarantee safe housing by eliminating situations that can contribute to the lead poisoning of children in the future. The Task Force developed recommendations in the following areas:

Inspections – Increase the frequency of risk assessments and lead inspections, before a child develops an EBLL. The discussions centered on impediments to inspection, particularly for single family owner-occupied dwellings, and involved reviewing recommendations that have been developed over the past several years. Recommendations focus on increasing the number of lead or lead hazard inspections completed through increased follow-up, relaxation of penalties, and changes in reporting requirements.

Remediation – Increase the number of housing units that are brought to a lead-safe standard. The discussions centered on strengthening implementation of lead-safe requirements in existing programs, reallocating resources in funded non-specific housing programs to focus more resources on lead-safe work practices (such as weatherization programs replacing windows in a lead safe manner),

and on strengthening federal and state regulation compliance to ensure that lead-safe conditions are created through these funding mechanisms.

Enforcement – The team examined strategies to make regulations practical, effective, and consistent with current best practices. The discussions centered on areas where regulations could be adjusted to encourage more inspections/risk assessments, reduce cost of compliance when no child had an EBLL, and shorten the time period for compliance when an EBLL child is involved.

Currently LHDs are required to inspect residential properties during the investigation of a lead-poisoned child ($\geq$ 20µg/dL) per CT Regulation Section 19a-111-1 through 19a-111-11. The inspection consists of the child's primary residence, common areas of the property (stairwells, basements, etc.) and the exterior. Any out buildings, garages, sheds or other structures on the property are also tested for lead paint content. Lead in dust, lead in water and lead in soil are required to be tested. If the property in question contains two or more units, LHD staff must investigate the occupancy of the other apartments to ascertain if a child under the age of six resides in these other units. If a child does reside in these other units, the regulation above would be applied to those units as well.

Many LHDs also inspect properties where a child resides whose blood lead level is below 20µg/dL. This is performed as a preventive measure to intervene prior to the child reaching 20µg/dL. Daycare re-licensing/initial licensing also requires lead inspections/interventions that some LHDs provide. The timeframe to complete a residential lead inspection can vary from 4 hours to 40+ hours, based on workload, size and access to property, and condition of residence. After the lead inspection is completed and all sample media results are received (i.e. dust, soil, and water) a lead inspection report is written and a mandatory lead inspection report form is completed and sent to the DPH.

In addition, after the lead inspection report is completed and when lead hazards have been identified, the LHD issues a legal order to abate to the property owner as required in the regulations. LHDs utilize a legal order template that is provided by the DPH. Within the order, time frames for the owner to submit a written lead abatement plan and a written management plan to the LHD are stated. The LHD must then approve or reject both plans. Time frames to initiate lead abatement are also stated within the legal order. If any of the requirements outlined in the legal order are not complied with, the LHD refers the case to the State's Attorney Office for Enforcement.

In fiscal year 2002, 849 lead inspections were conducted by LHDs and 302 lead abatements were completed. According to the DPH, during FY02, inspections were completed at 79% of properties that were identified as requiring lead inspection. 2002 was the first year that the number of outstanding abatements at the end of the year was less than the number of incoming outstanding abatements. However, the number of uncompleted abatements is still large, due to lack of funds, property held vacant, enforcement, and other reasons. These figures may undercount voluntary (not LHD ordered) lead abatements that were funded through HUD LBP Hazard Control Grants.

While the current process is well-defined, there are areas for concern, which may contribute to a property poisoning subsequent residents. These include:

- Residential property re-inspection is not performed if the home is abated but the child's blood lead level is still increasing.
- The residential property inspection is not thorough.
- Abatement orders are not drafted appropriately.
- Abatement plans are late and/or cannot be approved as written.
- Abatement is delayed, usually due to lack of funds.

- Abatement starts but fails to continue,; there are no time limits on what "expeditious" means and it's left to the discretion of the LHD.
- Housing court enforcement does not always occur.
- Housing court cases are closed inappropriately.
- Current laws are inconsistently enforced.

Resource Inventory

Current resources dedicated to lead poisoning prevention and response to children with EBLLs include: (1) programs that financially assist removal of lead hazards in housing, (2) rental assistance programs that require housing units to meet Housing Quality Standards (HQS), (3) an industry of consultants and contractors trained to handle lead-related issues, and (4) statutes and regulations along with the assigned enforcement agencies.

In developing an overview of programs that provide financial assistance for lead hazard removal or abatement in private housing, the Task Force discovered that coverage is not evenly distributed throughout Connecticut. Many of the programs that exist have limits on the properties that can be covered (largely geographic or income limits). Moreover the search was not exhaustive since a complete inventory of local community programs was not completed, e.g. Community Development Block Grant (CDBG) entitlement communities that allocate funds for housing rehabilitation were not all surveyed and included. The inventory may also not include all federally funded public housing programs or project-based Section 8 programs. The complete listing of existing funding programs for lead hazard control in housing is included in Appendix B, Table I.

The Rental Assistance Programs (RAP) with their HQS requirements, represent an enormous potential resource for lead-safe housing. A variety of private companies, local housing agencies, and others operate the Section 8 and State Rental Assistance Program under contract. Given current HUD guidelines regarding lead-safe housing, these represent an enormous opportunity for improving the housing to the poor and disenfranchised in CT.

Lead consultants, abatement companies, and home improvement companies with workers trained in lead-safe work practices are an important resource in providing lead-safe housing. Still, the number of firms available and the percentage of total contracting firms in the state that are trained in these areas needs to be increased. Please refer to Appendix B, Table II for an overview of the number of firms in Connecticut within each of these categories.

Finally, the Task Force developed a list of regulatory and enforcement agencies in CT involved in lead hazard control and prevention of lead poisoning. The list is broad and scattered across the state; while providing broad statewide coverage, this pattern of coverage also decentralizes efforts. Please refer to Appendix B, Table III for a complete list of the agencies engaged in these efforts.

The inventory of resources points out several concerns and opportunities for improvement to the existing system including:

- Limited financial assistance for lead hazard removal/abatement in private homes.
- Decentralization of enforcement of HUD Housing Quality Standards.
- Limited number of companies licensed to perform hazard removal.
- Decentralization of regulatory enforcement of lead hazard control efforts.

Figure 9. Existing Connecticut Statutes and Regulations

CT General Statutes

CGS §19a-110 through §19a-111e. Reporting, Screening, Investigation, Abatement

CGS §19a-111

- Epidemiological investigation of confirmed elevated blood lead levels (≥20μg/dL).
  - Order action.
  - Eliminate hazardous conditions and prevent further exposure of persons to those sources of lead exposure.

    * Corrective action is linked to protecting all persons who may be exposed in the future, and corrective action for hazardous paint conditions does not have to be lead abatement as described in the Lead Poisoning Prevention and Control (LPPC) regulations unless those regulations are applicable (e.g. residence of child less than 6 years old and identified deteriorated lead-based paint).

CGS §19a-111c

- Enables the implementation of the "lead" regulations (LPPC regulations).
- Dwellings - children <6 years old.
- Abatement of lead hazards and management of intact lead-based paint.

* Enabling legislation limits scope of LPPC regulations

CGS §47a-54f Multi-Family Dwellings - Correct hazardous paint conditions in tenement houses (dwellings with ≥ 3 dwelling units)

- CGS 47a-54f is applicable regardless of occupancy status.
- Corrective action for hazardous paint conditions does not have to be lead abatement as described in the LPPC regulations unless those regulations are applicable (e.g., residence of child less than 6 years old and identified deteriorated lead-based paint).

CGS §20-474 through § 20-482: Licensure, certification, & training of lead activities professionals

CGS 20-478 – Limited exemption for Code Enforcement Officials.

State Regulations

Lead Poisoning Prevention and Control Regulations (§19a-111-1 through §19a-111-11)

- Applicable to dwellings with children <6 years old and child day care facilities.
- Establishes inspection protocol.
- Establishes abatement protocol.

Lead Licensure and Certification Regulations (§20-478-1 through §20-478-3)

- License lead abatement contractors and lead consultant contractors
- Certify lead activities professionals (lead abatement supervisors, lead abatement workers, lead inspectors, lead inspector risk assessors, & lead planner project designers)

Environment and Housing Recommendations

The following recommendations are organized as described in the Executive Summary. Each recommendation is followed by the details of the recommendation, as well as some of the background information and rationale.

Recommendation 1. Modify current regulations and statutes (e.g. CGS §19a-111) to lower the threshold for mandatory epidemiological investigation and lead inspection from 20 µg/dL to a confirmed blood lead level of 15 µg/dL. Explore mechanisms for providing increased support to local health departments most directly impacted by the increased case-load.

Under current regulations, LHDs are required to conduct inspections for lead hazards only when a child with an EBLL of at least 20 µg/dL is identified, yet the current CDC level of concern is 10 µg/dL or greater. In many cases, children are identified as having been exposed to lead in the 10-19 µg/dL range, but many LHDs lack the resources to identify ongoing sources of exposure until the child's poisoning has become more extreme. Some LHDs are already providing inspections at lower levels of lead exposure (e.g., 10 µg/dL in some communities), but this is not standardized.

Measurement and Evaluation of Recommendation 1:
The success of this effort will be measured through passage of statutory and regulation changes within 18-24 months. Within one year of passage impact will be measured using the CLPPP system to track the increase in epidemiological and lead inspections conducted and to identify percentage of inspections completed for children with EBLL of 15-19 with the goal of 85% compliance within one year.

Recommendation 2. Revise the CT Public Health Code, statutes, and State regulations to strengthen the ability of the DPH and LHDs to enforce existing codes, statutes, and regulations.

The Task Force examined strategies to make regulations practical, effective, and consistent with current practice. The discussions centered on areas where regulations could be adjusted to encourage more inspections/risk assessments, reduce cost of compliance when no child had an EBLL, and shorten the time period for compliance when an EBLL child is involved. The current regulations were reviewed and judged not to be consistent with primary prevention strategy and required recommendations for change. These changes will allow LHDs to enforce the provisions of the regulations and general statutes in such a way as to cause the correction of any known lead-based paint hazard. Please refer to Appendix C, Item I for a model ordinance for deteriorated paint and lead-based paint hazards.

Measurement and Evaluation of Recommendation 2:
The success of this effort will be evaluated through passage of statutory and regulatory change to permit, among other things, the broader use of lead-safe work practices within 18-24 months as drafted by committee, and the identification of supplemental funding within 12 months of passage to subsidize lead-safe work practices training.

Recommendation 3. Expand the use of Lead Safe Work Practices (LSWP) for lead abatement, hazard reduction, and home maintenance and improvement by: (1) mandating contractors, maintenance personnel, or property owners be trained prior to doing work that may generate lead dust or fumes, (2) funding trainings for contractors, maintenance personnel,

and property owners, (3) expanding the resources available to support the costs of undertaking these efforts, and (4) making regulatory changes to allow for LSWP. These will include interim controls to be utilized in place of full abatement in circumstances where an EBLL child is NOT involved.

Current regulations require full abatement of all defective surfaces and or components when toxic levels of lead are identified and a child under the age of six years old resides at the property. Full abatement is a costly process and also deters people from having the initial lead-based paint inspection performed. Per current regulations, if they are not using any federal funds to rehabilitate their property, the building owner and/or people who the landlord already has on his/her payroll for maintenance duties (i.e., "regular employees") may conduct lead abatement work on his/her property. As there is not any stipulation requiring the certification or training of people in performing this work, this process may result in creating lead hazards more severe than originally existed, due to lack of training and the use of improper work practices and cleaning techniques.

The Task Force proposes that full abatement will still be required when a child with an EBLL resides in a dwelling unit, and in common areas and exteriors to which an EBLL child has access, but that LSWP, including interim controls, be utilized in place of full abatement in circumstances where an EBLL child is NOT involved. Please refer to Appendix C, Item II for a model ordinance pertaining to paint removal from the exterior of buildings and structures.

Landlords and/or "regular employees" shall be required to complete a HUD-approved training course in LSWP if the landlord or their "regular employee" wishes to conduct lead abatement and remedial work himself/herself. A Lead Hazard Control Plan, outlining the intended work practices, engineering controls, interim controls and or remediation methods, occupant protection, cleaning and clearance sampling will be submitted to the local director of health for review and approval. Lead dust wipe clearance samples will be collected at the completion of work in accordance with existing regulations. Failure to satisfactorily complete the LSWP course and conduct lead abatement and remedial work in a satisfactory manner shall be subject to suitable penalties that will deter offenders.

Abatement and lead hazard reduction can be very expensive, and is often beyond the financial means of property owners and homeowners. There are existing sources of funding that are not being tapped by all cities, and relatively minor changes could be made to some of the existing funding programs to ensure that more focus is placed upon timely, cost effective lead hazard reduction. Proposed methods to enable greater access to funding sources include:

- Provide a grant writing workshop to help new applicants (and previously unsuccessful applicants) to write a successful HUD LBP Hazard Control Program proposal and explore other opportunities for outside funding to support these efforts
- Expand and promote the use of Community Development Block Grant (CDBG) and HOME funding for lead hazard remediation
- Formally establish an EBLL as an "emergency" so that residential property owners (either owner-occupied or rental) qualify for priority in allocation of money, similar to a roof leak or plumbing emergency
- Encourage application for Small Cities CDBG funds for <u>residential</u> rehab, allocating more money to residential hazardous material remediation (currently CDBG funds are often used for non-residential projects)
- Encourage cities with direct CDBG funding to allocate money for residential lead hazard control
- Apply for new/additional funding for the statewide program for lead hazard control

- Change the structure of program to speed up process. Currently, the program is structured to rely on the property owner to "run" the different stages of the rehab project

Measurement and Evaluation of Recommendation 3:
The success of this effort will be evaluated through passage of regulatory change to permit the use of lead-safe work practices within 18-24 months, as drafted by committee, and the identification of supplemental funding within 12 months of passage to subsidize lead-safe work practice training.

Recommendation 4. Enforce compliance with existing HUD lead safety requirements through improved inspection. Expand application of these requirements to all other federal Rental Assistance Programs, State Assistance Programs (including Rental Assistance Programs – RAP), and all other local certificate of occupancy programs.

In 2000, HUD took an initiative in the development of the 1012/1013 Lead-Safe Housing Rule for its housing programs. For the first time, all HUD supported housing programs fell under one umbrella, although the type of requirements varied from program to program. Four of HUD's major programs to provide affordable housing are: 1) low rent public housing; 2) project-based rental assistance where more than $5,000 per unit is spent by HUD per year; 3) project-based rental assistance where less than $5,000 per unit is spent by HUD per year and 4) Section 8 (a.k.a. the voucher program-tenant-based assistance) subsidies. For each of these, a HQS inspection is conducted every year or at unit turnover, whichever comes first. As a part of this inspection, for pre-1978 housing, the HQS inspector is supposed to perform a visual inspection of the unit and quantify deteriorated paint to see if more than a *de-minimus* amount (*de-minimus* is defined by HUD as <20 square feet on exterior surfaces; <2 square feet on interior room; <10% of a building component with a small surface area, such as a painted window frame) is present, which will require lead-safe work practices to be utilized in the correction of the suspect lead hazards. Following the correction of the deteriorated paint, a clearance inspection is supposed to be conducted by a licensed lead inspector or lead inspector/risk assessor.

HUD relies on the public agencies, non-profits. and the private owners it subsidizes to ensure that these HQS inspections are done, that the landlords who do the work use LSWP, and that clearance inspections are done when the corrective work is completed. In Connecticut alone, tens of thousands of units could potentially be inspected yearly. At present, there is significant non-compliance or incomplete compliance because either the visual assessment is not done (or is performed inadequately) and/or LSWP are not used to perform the corrective work, creating or exacerbating a lead hazard in the unit.

Therefore, the Task Force proposes the following:

- The local HUD office with jurisdiction must enforce the annual visual assessment and dust sampling requirement to include a Limited Lead Hazard Evaluation (See Recommendation below). Implementation and enforcement must be in place fully within 4 years of the release of this document.
- Property owners and contractors must use lead-safe work practices to perform corrective work, in compliance with HUD regulations.
- Licensed inspectors/risk assessors provide clearance inspections, in compliance with HUD regulations.
- The local HUD office must perform quality assurance audits to ensure that Housing Quality Standards Inspectors conduct appropriate Limited Lead Hazard Evaluations and to ensure

that contractors and property owners are following lead safe work practices and requirements of 1012-1013.

There are other various federal, state, and local programs that fund rental programs. Many of these must meet federal HQS requirements, as well as local and state housing and safety regulations. In order to ensure consistent lead safety requirements, properties that fall outside of the scope of HUD regulations must also be required to follow the same standards and inspection protocols.

Recommendation 5. Implement the use of "Limited Lead Hazard Evaluations" during other (non-lead) home inspections in CT by requiring their addition to all ongoing housing inspections by local code officials and sanitarians and by private DCP licensed home inspectors.

The Task Force identified several opportunities where home inspections do not include the examination for lead, but lend themselves to expansion. Currently, in cases of tenant complaint, local Code Enforcement Officials from Housing, Fire, Building, and various Neighborhood Service Agencies or Sanitarians (depending on local jurisdiction) conduct housing inspections. These inspectors are generally not trained to recognize and identify probable lead hazards when they enter these properties. Also, there is a low incidence of inspection in Connecticut's owner-occupied housing stock. Owners of owner-occupied single family dwellings are not seeking opportunities to have lead inspections performed at the time of the purchase or refinance of the property. Generally, Home Inspectors are not trained to perform lead evaluations, and are therefore not offering them to clients.

In order to create greater opportunities for lead hazard evaluation and to increase the number of inspections, the Task Force proposes a new lead evaluation. "Limited Lead Hazard Evaluations" will consist of visual assessments of painted components and the collection of dust wipe samples in pre-1978 housing to assess existing conditions only. Training materials will be derived from the HUD-approved Visual Paint Evaluation and Lead Sampling Technician training courses (with sections regarding post-renovation, post abatement, and post lead hazard control language and final clearance dust wipes sampling removed). The training providers will issue a certificate of completion to successful participants of this training. Additional qualifications will continue to be necessary under state requirements to: 1) perform Lead-Based Paint Inspections, 2) recommend Lead Hazard Reduction/Abatement Activities, and/or 3) perform Post Abatement/Lead Hazard Reduction/ Renovation Visual Inspections or Final Clearance Dust Wipe Sampling.

For Licensed Home Inspectors, who are required by the Department of Consumer Protection (DCP) to complete 20 continuing education hours within a two-year period to maintain their license, the Task Force proposes that course offerings include Limited Lead Hazard Evaluations.

Recommendation 6. Encourage homeowners to test their own property for lead by eliminating the reporting requirements to the State and LHDs when a certified private sector Lead Inspector inspects an owner-occupied single family home, providing there is not a child under the age of six (6) years with a known EBLL in residence. Consideration will be given to expanding this exclusion on reporting requirements for other private sector inspections of residential properties that do not involve an EBLL child.

At present, the regulations require that private sector certified Lead Inspectors must notify the property owner, Local Director of Health, and the DPH when a toxic level of lead based paint is identified in the home in which a child under the age of six years resides. In the case of a non-lead poisoned child, Private Inspectors disclose their reporting responsibility to the property owner prior

to conducting the inspection and, more often than not, this news discourages and dissuades the property owner from having the inspection conducted. In foregoing the inspection, the homeowner misses an opportunity to be proactive and take primary prevention steps to identify and remedy areas that have toxic levels of lead-based paint. This change shall not affect reporting responsibilities of private inspectors where a child with an identified EBLL resides in a home and toxic levels of lead that require abatement are identified therein. Private Inspectors shall be required to recommend to parents/guardians of any children in residence under the age of six (6) years in homes where toxic levels of lead have been identified that all such children be tested by a licensed medical provider for blood lead levels.

Measurement and Evaluation of Recommendation 6:
The success of this effort will be evaluated through passage of regulatory change within 18-24 months and solicitation of aggregate housing inspection data from private inspectors both pre and post regulatory change to document a significant increase in private sector inspections in the year following the passage of the regulatory change.

Recommendation 7. Explore the development of a web-based registry of lead-safe and lead-free properties to be maintained on a statewide basis by a private entity.

Currently, there is no easily accessible database of housing that is lead-safe and well maintained. There are also limited rewards for a property owner who is maintaining his/her property to meet lead-safe standards.

The Task Force proposes that properties be listed by city, building (parcel) address, unit address and date declared lead-safe. A unit constructed prior to 1978 will continue active on the registry for one year following the date declared lead-safe. After one year, the unit will roll into an archive list with the warning that information on lead conditions is older than 1 year. Lead-free units will continue permanently on the registry

Listing on the registry is achieved by: (1) clearance testing following inspection and removal of lead hazards, (2) inspection for HQS (Section 8 and State Rental Assistance Program) including a Limited Lead Hazard Evaluation that identifies no lead hazards, (3) inspection by local health, housing code or building inspector that includes a Limited Lead Hazard Evaluation or lead inspection that identifies no lead hazards, (4) private inspection or risk assessment by licensed lead consultant that identifies no lead hazards, or (5) construction in 1978 or later.

The sources of data for the lead-safe registry will include local health, housing code and building departments, HUD funded lead hazard control projects, Community Renewal Team Home Solutions Program, local housing rehabilitation programs funded through HOME, CDBG, state bonding such as the Removal of Hazardous Materials in Residential Structures program and local bonding that follows lead-safe housing procedures, Section 8 programs (after improvements to the HQS inspections), and State Rental Assistance Programs (after improvements to the HQS inspections).

Maintenance and distribution of the registry will require a statewide organization and participation by the sources of data shown above. A web-based database will make the registry widely available and inexpensive to update. Promoting use of the registry will involve the listed sources of data as well as the DPH, DSS, DECD, and the maintenance organization.

Measurement and Evaluation of Recommendation 7:
The success of this effort will be measured through the establishment of the website within 12-18 months.

Recommendation 8. Develop guidelines on cases under which it may be permissible to allow children to remain in residence during abatement; in all other cases relocation will be required during abatement.

Current regulations require that the local Director of Health review Lead Abatement Plans for approval prior to initiation of abatement being done under orders of the health department (e.g., when there is a child in residence with an EBLL). Current regulations leave it to the discretion of the local Director of Health whether or not it is necessary to relocate the child (and other children within the apartment) during abatement and prior to clearance testing. Due to financial concerns (e.g., reluctance to draw on local government relocation funds) and family/landlord concerns (e.g., families that may wish to remain with their belongings), decisions are sometimes made that are not adequately protective of the child's health. Furthermore, there are no objective criteria for the local Director of Health to use when determining when relocation is necessary, and work is often conducted by the landlord or employee who may have no training in LSWP and may be ill-informed on how to maintain the integrity of the work site. As a result, children have been severely poisoned by remaining in residence during abatement work ostensibly being done to protect the child's health, which is an unnecessary tragedy.

As proposed, all abatement plans shall address relocation or provide justification for continued occupancy. Relocation will be required during abatement unless the circumstances are consistent with the DPH guidelines. In an exceptional situation where the Local Director of Health feels that the circumstances should not require relocation even though it does not fit into one of the permissible situations in the DPH guidance, the DPH will be asked to review the plan and grant approval.

Measurement and Evaluation of Recommendation 8:
The success of this effort will be measured through the development, approval and promulgation of guidelines within 6-12 months.

Screening, Case Management, and Surveillance

In developing this plan, the Screening, Case Management and Surveillance sections were combined – given the clear links between the three activities. When the Task Force began work several things were evident:

- Current lead screening and case management services in Connecticut vary in coverage and quality.
- Although the current statewide recommendation is to test all one and two year olds for lead poisoning, this recommendation stands amidst the perception that lead poisoning is an old problem that has already been solved.
- Surveillance of both screening efforts and results has been lacking historically. Without any regulation or systematic way to "catch" children and have them tested, a significant portion of children in Connecticut go untested for lead.
- For children who are tested and are found to have EBLLs, case management services are similarly fragmented. Responsibility for case management can be diffuse with the result that services range from excellent to non-existent.

These topics have been divided among three chapters: Screening, Case Management and Surveillance. Each chapter discusses ways to address current weaknesses and to build upon existing strengths to improve services. Finally, the topic of surveillance is considered as it relates to both screening and case management.

Chapter 3: Screening

Current resources and practices

Connecticut is the only state in the region that has screening recommendations, not a screening requirement. Bordered on all sides by states that require mandatory lead screening and boast overall screening rates of 80% and higher, Connecticut lags behind. It is not known with certainty what the overall screening rate in Connecticut is because of the way testing information is collected and maintained. One set of estimates puts overall, "ever screened" rates in the seventies, though difficulties with the way the data is kept make interpretation of these estimates difficult. We do know that there is tremendous regional variation throughout Connecticut in terms of screening coverage. By town, annual screening rates (as opposed to "ever screened" rates) range from a low of literally 0% for one and two year olds in 2002 (in a town which had 34 toddlers aged one or two) to a high of 100% in 2002 (in a town which had 30 toddlers). Besides these and a handful of additional extreme cases, the annual screening rates for one and two year olds by town ranged from the teens to the mid-seventies.

Blood lead screening is currently required for children who receive Medicaid Managed Care, and the overall screening rate for these children was calculated to range from 67% for children aged 1 year, 10 months through 2 years, 10 months, to 78% for children aged 3 years 10 months through 4 years 10 months, in 1991 (older children have higher "ever screened" rates since they have had more time to be tested). These estimates were the result of a special investigation conducted by the DPH. In the same analysis, screening rates for children not receiving Medicaid ranged from 74% to 78% for the same age groups. These rates are considerably higher than originally thought. Given that Medicaid children may be relatively difficult to follow-up on and maintain in preventive medical care, these relatively high screening rates for both Medicaid and non-Medicaid children are impressive. Still there is room for improvement. Moreover, rates vary greatly from one community to another. For more information on screening rates please refer to the Epidemiologic and Environmental Analysis section of Chapter One of this plan.

Proposed Plan

Given the inconsistency of screening coverage, agreement was reached that the strongest step toward comprehensive screening will be to mandate blood lead screening for one and two year-olds. The benefits of universal screening will be two-fold. First and most obviously, screening of all one and two year-olds will identify children with EBLLs who might otherwise go un-diagnosed. Second, requiring blood lead screening will yield comprehensive, statewide data which can then be used to: 1) identify the extent of lead poisoning, 2) provide baseline data against which to measure future improvement, and 3) identify geographic and demographic "hot spots," that is, neighborhoods and groups of children who may be at particularly high risk for lead poisoning. Such epidemiologic information can then be used to focus lead poisoning prevention resources in the areas and on the children who need it most. Such data will also provide proof to providers that lead poisoning does exist in their practices.

The plan for mandating and ensuring universal screening is complex since it involves a number of parties, including patients and their families, health care providers, allied service providers, the DPH, and LHDs. The strategy for achieving universal coverage can be broken into 3 stages. The first stage is to pass a bill in the Connecticut legislature to mandate lead screening for all one and two year-olds. The process of starting these legislative changes can begin immediately with the goal of having the

proposed bill and the proposed change to existing statute section 10-206 put before the Connecticut Legislature in the legislative session of 2005.

The second stage of promoting universal coverage is to work with service agencies that serve children and tie lead screening to their programming. Specifically, Medicaid Managed Care (Husky A in CT), child care centers and preschools, the WIC Program, Head Start Programs, and Department of Children and Families (DCF) Investigations Unit can each play a role in ensuring that one and two year-olds get tested for lead. The arrangements with each of these agencies will be different, and are described in detail below under "Recommendations". This second stage can also begin immediately, though inter-agency agreement and cooperation may take time and eventual working arrangements may take months to be fully implemented.

The third stage for ensuring universal screening is to identify children who have eluded testing and pursue avenues to get them tested. Since the DPH will have in-house statewide birth cohort data as well as lab test result data, it will be possible to generate a list of children who have not been tested (by comparing these two lists). The expectation is that the list of children who have not been tested will become shorter each year as the effect of the new law is felt and agencies that have not necessarily promoted lead testing adapt to their new role. Nonetheless, we expect to find in Connecticut an outcome similar to what other states that have mandated universal screening have found. That is, there will always be a group of children who are not tested. For these children, the DPH will enlist the services of local health departments and the RLTCs. This third stage is not expected to begin until the first two stages are well underway; that is, when mandated screening is law and a number of efforts are in place to ensure that children are getting tested. This third stage anticipates a time when screening rates are significantly higher than they are now, and attempts to develop the plan of action to make lead screening ultimately as comprehensive as possible.

Specific recommendations follow below. The recommendations are organized by the three stages outlined above: 1) mandate universal screening, 2) motivate and monitor compliance with this mandate through agencies which serve children, and 3) identify children who have eluded testing and pursue ways to get them tested.

Screening Recommendations

Recommendation 9. Legislatively mandate blood lead screening for all one and two year-olds in CT. Recommend blood lead screening for all children under five not previously screened.

Recommendation 10. Expand methods to motivate and monitor compliance with this new screening mandate by: (1) collaborating with Connecticut Department of Social Services and their Medicaid managed care organizations (MCO) to address provider compliance, (2) requiring that family, group, and center child care facilities monitor and report missing lead screenings of one and two year olds entering their programs, (3) exploring with the Women, Infants, and Children Program (WIC) the addition of lead screening as a condition of enrollment and recertification in the program as well as the training of WIC case workers to encourage lead testing with their clients (concurrent with currently required hemoglobin testing); and by (4) adding lead testing to the medical form required by DCF for new cases whenever a child under 5 years old is involved in a complaint of abuse or neglect.

<u>DSS, Medicaid and MCOs</u>

The DSS administers the HUSKY A Medicaid Managed Care program and the HUSKY B, State Children's Health Insurance Program. DSS and CLPPP currently have a Memorandum of Agreement (MOA) that allows for data sharing between the two agencies. Under this MOA, the names of children who are on Medicaid, together with the names of their health care providers, can be shared with the DPH. Staff at the DPH can then compare this Medicaid list with the list of children who have been tested for lead. The MOA comes with enormous implications for tracking lead screening among children, who receive Medicaid. Hence, the following recommendations pertain to HUSKY recipients:

- DSS together with CLPPP will move forward with the necessary arrangements to share screening data: specifically, the identifying information of children who have been screened and their health care providers. When this information is matched with lab result information, a list can be generated of children who are enrolled in the HUSKY program and who have not been tested for lead. Since it will be possible to determine screening rates for individual managed care organizations (MCOs), those rates can be monitored and incorporated into performance standards.
- The DPH and DSS will work toward incorporating screening rates into the performance standards for Husky A/B MCO contracts to encourage medical providers not complying with the law to increase their screening rates. This could be achieved by tying screening to compensation.
- MCOs are well-positioned to send notifications to parents of the importance of getting their children screened for lead. Parental concern may further encourage individual providers to obtain lead levels. Specifically:
  - Work toward incorporating parental notification in the protocols for lead screening in Husky A/B MCO contracts.
  - Lead screening is difficult to track among Medicaid patients partly due to the paperwork involved. The current Early Periodic Screening, Diagnosis, and Treatment (EPSDT) form has one checkmark box to indicate that a number of clinical tests have been done. The individual tests are not specifically identified and the box is often checked without careful regard as to whether all the tests have actually been performed. As a result, the current record keeping obfuscates how many lead tests were done and payments are issued for tests that may or may not have been performed. Advocate for change at the federal level in the EPSDT form used by DSS for children enrolled in Medicaid.

Daycare and preschools

Currently, pre-school/daycare school health assessment forms contain the medical information that is required for entry into preschool. A question about lead screening is on the current form, but often too little attention is paid as to how it is answered. The Task Force proposes that Connecticut require that family, group, and center child care facilities monitor and report missing lead screenings of one and two year-olds entering their programs.

WIC Program

The WIC Program is potentially an excellent partner in the promotion of lead screening since WIC provides services specifically to young children from low income families. We recognize that WIC case workers have a great deal of information already to communicate with the families that they work with, and are limited in time and resources. At the same time, it would be prudent to explore the ways in which case workers and the existing WIC enrollment protocol could promote lead screening.

- Explore with WIC the addition of lead screening as a condition of enrollment and recertification in the program as well as the training of WIC case workers to

encourage lead testing with their clients (concurrent with currently required hemoglobin testing).

DCF Investigations

DCF currently requires that a medical form be completed when any new DCF case is being investigated for a complaint of abuse or neglect.

- Add lead testing to the medical form required by DCF for new cases whenever a child under 5 is involved in a complaint of abuse or neglect.

Recommendation 11. Utilize the new CLPPP system to identify for LHD all children within their jurisdiction who have not been screened by the age of 2 to monitor and improve compliance with new screening requirements.

The expectation is that by mandating screening and incorporating screening into the services of many agencies, screening rates will rise over the next few years. At the same time, we recognize that there will need to be an avenue to reach children who will have escaped other efforts. To this end, we recommend that local health departments have the ultimate responsibility of ensuring that one and two year-olds get tested for lead poisoning. The DPH will be able to identify children who have not been screened by the age of 2, by name, age, town of residence or birth, and parents' names. The DPH will then produce town-specific lists to share with LHDs, detailing the children in each district who have not been tested. From there, it is proposed that LHDs locate these children and ensure that mandated blood lead screening is performed. The LHDs will report the children screened to the DPH on a monthly basis.

Recommendation 12. Increase the capacity to provide lead testing services at the State Laboratory including: private pay reimbursements for blood lead tests, and personnel and equipment to handle the anticipated increase in blood lead level screenings, as well as environmental testing (dust wipes, paint chips).

Currently all lead testing in Connecticut related to children under 18 years old is covered through state funds. This includes not only blood testing, but testing of all the related paint chip and dust wipe testing of a poisoned child's environment. Given the increased rate of screening anticipated by the new mandate and other steps taken to enhance screening efforts, as well as the lowered EBLL requiring environmental investigation, the amount of testing required at the State Laboratory may increase exponentially over the short term. Locating new sources of support for these expanded efforts will be necessary to ensure that testing timeliness and quality be maintained.

Recommendation 13. Investigate the possibility of generating revenue by creating a nominal tax or fee that would be tied to the housing market through closing costs to support lead screening and abatement efforts.

Another possibility for generating revenue for lead poisoning prevention is to create a tax on housing sales following the model of taxes levied on alcohol and cigarettes, the revenues from which are then channeled back into public health activities. The idea is that the problem of lead poisoning stems from the housing market through lead paint. Currently, a relatively small number of individuals bear the direct brunt of this lead poisoning burden, specifically the children who become poisoned and their families, and the home owners who must deal with remediation. A true public health approach would share this burden and the cost of the problem, across all home owners. If the cost were spread

out, it would amount to a tiny additional cost to home owners but the benefits to lead poisoning prevention and case management would be immense.

Measurement and Evaluation of Recommendations 9-13:
The success of this effort will be measured through the passage of legislation drafted within 12-24 months, with the goal of increased compliance to mandated blood lead screening of at least 85-90% of Medicaid and 80-85% of non-Medicaid children within two years of passage of legislation.

Chapter 4: Case Management

The definition of case management for children with lead poisoning, put forth by the CDC in 2002, is as follows:

> *Case management of children with EBLLs 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 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 phone, or other minimal activities.*

Current resources and practices

Case management for children with EBLLs in Connecticut is ultimately the responsibility of the LHDs. There are 96 local health departments and districts in Connecticut, and they vary greatly in size and in their capability to provide case management services. For many smaller departments, small staff sizes combined with budget constraints mean that lead inspectors and sanitarians, not public health nurses, are the ones who provide case management. So while the responsibility for case management lies with local health departments, there is great variation in how much this responsibility is accepted and acted upon. There are currently no regulations to ensure that case management is performed.

In addition to the LHDs, a number of other service providers currently provide case management services to children with EBLLs. Notable among these are physicians and hospitals, and the two RLTCs. In many cases, children's health care providers and/or the RLTCs are providing case management services and the respective local health departments need only to be nominally involved. This type of cooperation is vital in reaching as many children as possible, and should be encouraged.

Proposed Plan

There already exist clear guidelines and protocols for the case management of lead poisoned children. One problem is, however, that there is no way to enforce that any of the outlined actions are taken. If the current regulations were amended to include case management for children, it would raise the visibility and highlight the importance of this activity, and aid in ensuring that it happens. Therefore, the plan to improve case management services in Connecticut begins with establishing case management for lead poisoned children as a DPH regulation, and clarifying roles and responsibilities with the LHDs. At the same time, the crucial second part of the plan is to facilitate case management services.

Facilitating services, particularly for the already burdened local health departments, can be done on three fronts. First, the load on LHDs can be lightened by encouraging health care providers, MCOs, and the RLTCs to do more case management. This may only be possible if additional funding is secured.

Second, the load can be lightened by providing LHDs with technical assistance and training. There is a great deal of information and expertise contained within the DPH that, when shared with the LHDs, could help expand case management activities at the local level. CLPPP will launch an intensive case management effort in Connecticut's 5 largest cities. In addition to benefiting these cities directly, the experience of working closely with the LHDs will refine protocols and model-like "best practices" for coordinated case management services.

Third, obtaining additional funding for LHDs to conduct case management (or subcontract for their cases) would enable an expansion of services.

Specific recommendations follow below. The recommendations are organized as follows: 14) regulate case management; 15) increase case management among MCOs and the RLTC's; at the same time, develop the 5-city initiative to refine best practices; 16) pursue additional funding for case management for local health departments and the RLTCs; 17) promote the use of safe homes.

Case Management Recommendations

Recommendation 14. Establish regulations to require case management for all children in CT with blood lead levels of 15 µg/dL or greater.

The lead poisoning prevention and control regulations at the DPH currently provide for the investigation and management of *dwelling units* of children who are found to have EBLLs, under state statute section 19a-111-3. As the regulation stands, there is no provision for case management of the children themselves who are found to have EBLLs. Therefore, the specific recommendation is to:

- Add the phrase "case management is required for all children reported as having blood lead levels of $\geq$15 µg/dL" to the existing regulation that covers the epidemiologic investigation that is initiated when a child is found to have an EBLL.

Though case management will not be required for children with blood lead levels of 10-14 µg/dL, a similar protocol will be strongly recommended. This change in the regulation will be communicated to local health directors through the Health Alert Network and at the semi-annual health director's meeting. Compliance will be monitored through audits of the LHDs by DPH staff and by adding a case management section to the commissioner's quarterly report for environmental activities that is already required by law.

Measurement and Evaluation of Recommendation 14:
The success of this effort will be measured through the amendment of this regulation within 12-24 months.

Recommendation 15. Enhance and improve case management for children with EBLLs in CT by: (1) working with DSS to require more clinical case management by Medicaid MCOs; (2) building partnerships among MCOs and the RLTCs, and (3) piloting, evaluating, and then expanding intensive effort to improve case management in Connecticut's five largest cities.

<u>Case Management by MCOs</u>
The Memorandum of Agreement (MOA) between the DSS and the DPH for data sharing discussed under screening is relevant to case management as well. Once the data sharing between the two agencies is underway, it will be possible to determine, for all children who receive Medicaid: whether they have been screened for lead, their blood lead level, and the identity of their health care provider or MCO. DSS will share that information with the MCOs who will then have, for the first time, a list of their patients who have EBLLs. Hence, the specific recommendation is that the DPH identify children enrolled in Medicaid who have EBLLs and that DSS forward this information to the MCOs.

There are two types of case management that are covered under Medicaid: clinical and EPSDT (Early Periodic Screening, Diagnosis and Treatment). MCOs provide clinical case management for members who meet certain criteria. EBLL can be used as one of those criteria, though it is currently

not invoked very often. In addition to clinical case management, MCOs are required under EPSDT to provide case management to children under 21. Many of the elements that are recommended for a child with lead poisoning are *not* included under EPSDT case management and therefore would not be billable to Medicaid. However, to the extent that some lead case management activities are common to the EPSDT protocol, MCOs could be made responsible for case management. Hence, the specific recommendations are that DSS move to amend contracts to require more clinical case management by MCOs, with EBLLs used as the criteria that triggers and justifies this case management.

DSS should examine the overlap between environmental case management for children with lead poisoning and case management covered under EPSDT, and move toward requiring at least those elements of environmental case management that are included under EPSDT, and which therefore can be reimbursed. The DPH Lead Case Management Protocols will be shared with DSS to provide guidance to the MCOs for case management. The DPH's lead protocol could be integrated into existing case management protocols used currently (for other health issues) at MCOs. As part of this protocol, in the event of an EBLL, MCOs will be encouraged to contact parents of the affected children directly. A letter should be sent from the MCO to the parent stating that the patient's level is high and that the parent should call the child's physician and their LHD.

Link MCOs with the RLTCs

Since the RLTCs are already skilled at providing case management services to children with EBLL, the DPH will work with DSS to get technical assistance, and/or direct case management services, from this resource.

Five City Pilot Effort

The DPH will be launching an intensive, targeted effort to boost case management in "the big five" cities in Connecticut (Bridgeport, Hartford, New Haven, Stamford, and Waterbury). Waterbury will be the first city to receive additional services. The goal of this effort is to improve the coverage and quality of case management in the 5 cities. An additional goal is to develop a model for coordinated, high-quality services by joining the forces of local health departments, health care providers, and the DPH. This new service package includes an up-to-date case management protocol, revised quarterly reports, and technical assistance as needed. Compliance will be monitored through audits, site visits and quarterly reports that may be tied to continued funding, and will require summaries of all aspects of case management, as well as reporting of barriers that the local health departments encounter. Funding for this intensive effort will continue for two years with possible funding for year three to support the piloting, evaluating, and then expanding this intensive effort to improve case management in Connecticut's 5 largest cities. As the experiences in these first 5 cities inform practice, the DPH can continue to develop model-like "best practices" for case management to be used throughout Connecticut, including the following tools to assist local health departments:

- Reminder systems for children who should be re-tested
- Sample letters for LHD's to send to both parents of children with EBLLs and their health care providers
- Contact information for agencies that might be able to provide case management services (RLTCs, Birth to Three Program, Visiting Nurses Association (VNA) Home Care Agencies)
- Contact information for Safe Homes (for temporary relocation) and safe housing lists (for permanent relocation)
- Referral forms for one LHD to send to another when a poisoned child relocates so that the new health department is aware of the child, can assess the dwelling and continue case management

- Technical assistance in locating children who are lost to follow-up because they have moved
- On-site guidance and additional training to LHD staff

Moreover, as experiences with intensive case management in large cities may not be applicable to rural jurisdictions (such as the Northeast corridor), the DPH will consider how to adapt this model for those areas and offer support and technical assistance to LHD Directors and program staff in rural areas.

Measurement and Evaluation of Recommendation 15:
The success of this effort will be measured by the DPH staff by actual cases counts receiving intense oversight of the first two piloted cities with a target goal of 85% receiving case management in the first year and the other three cities achieving this in year three.

Recommendation 16. Expand resources for case management services of EBLL children in CT by restoring to previous levels, and securing additional funding for case management and other supportive services, provided by the two RLTCs. Seek opportunities for additional funding for LHDs to enhance their capacity to assist with case management.

Increasing case management for children with lead poisoning will require an increase in resources. In the current funding environment, increasing resources will require a mind set that anything less than responsive, quality case management for all children is not acceptable. There will need to be aggressive commitment to maintaining the current dollars that go to lead poisoning prevention and treatment, and constant attention to possible ways of augmenting those dollars from state, federal and private sources. Specific recommendations include:

- Advocate that funding to the DPH and LHDs be targeted to increasing the availability of public health nurses and services at the RLTCs.
- The DPH may explore putting out an RFP for LHDs to compete for state and federal funding for lead poisoning prevention activities, rather than continue giving LHDs the same funding amount each year. Such a change would force LHD's to examine their individual circumstances around lead poisoning and develop solutions that are consistent with the overall direction that lead poisoning prevention is going in Connecticut, and also solutions that will be specific to their local community.
- For known EBLL children enrolled in Husky A/B (Medicaid), seek additional reimbursement on an administrative level. Matching funds would be sought from the Federal Government to match state dollars spent on case management. The additional money would be directed to the state's general fund and appropriated by the legislature to MCOs and other agencies that provide case management. The two RLTCs would be excellent candidates to receive such additional funding earmarked to expand their case management services

Recommendation 17. Promote the use of Lead Safe Homes for families whose homes are being abated by: (1) enforcing requirement for LHDs to relocate families with a child with and EBLL, (2) building partnerships with other housing programs, and (3) expanding and supporting Lead Safe Homes by ensuring adequate resources for their survival.

<u>Family relocation</u>
Current regulations rely on the discretion of LHDs whether relocations of children and their families are necessary during abatement. Financial and logistic pressures tend to tacitly encourage families to

remain in hazardous residences, often resulting in further poisoning. The Environment and Housing chapter covers this issue in more detail, including the resulting recommendation for the DPH to issue guidelines to LHDs detailing situations under which children may and may not remain in residence during abatement.

Building partnerships with other programs

For children whose families are on the waiting list for HUD housing and whose existing homes are in need of lead abatement, it has been possible in some cities to move that family to the top of the waiting list when HUD is presented with a letter from the health department. Therefore, one specific recommendation is to investigate with HUD how this process works and how it could be institutionalized statewide, as well as to investigate with other housing assistance programs methods to increase timeliness of access to and entry into programs for families with an EBLL child.

Ensuring adequate resources for Safe Homes

Each town is required by Connecticut Statute to have monies available for the relocation of families whose homes are being abated. This money is usually included in the town's general funds; as a consequence, it is often over-looked and under-used. LHDs and town managers should be educated about the existing statute, and stakeholders in individual towns should be encouraged to clarify what resources are available to them for relocation.

Similarly, the DSS has monies to assist their clients who are having problems with lead. The options they offer include cash benefits for a motel, security deposits for relocation, and shelter spaces pending availability. The requirements for these benefits are that the property must be deemed uninhabitable, unsafe, or a health risk by the LHD, and that documentation of this condition must be in the form of a violation order. Hence, the recommendation again is to educate LHDs and town managers of existing services offered at the DSS, and encourage staff to clarify what resources are available to them.

Measurement and Evaluation of Recommendation 17:
The success of this effort will be measured by monitoring rates of relocation during ordered abatement through mandatory reporting by LHD to the DPH and periodic audits to verify accuracy of LHD self reports, with the goal of achieving increased compliance with guidelines on relocation.

Recommendation 18. Improve case management at the LHD by increasing oversight and support to local programs from CLPPP, LEMU, and the RLTCs.

There is much room for, and a need for, the DPH staff to educate LHD staff about their case management responsibilities and about the resources available to them. One informal survey conducted by the DPH found that many local health directors did not know about the RLTCs, even though in some cases they were located very close by. Trainings to LHDs, then, should include identifying the RLTCs and other resources available and sharing well-developed case management protocols. On a more on-going basis, technical assistance from the DPH should include guiding and encouraging case management and providing on-going support in the form of information, site visits, and management.

When a child has an EBLL, the *environmental* investigation is conducted by the LHD. LEMU provides training, audits, site visits, oversight and technical expertise to ensure that investigations are completed. This plan proposes similar mechanisms for the case management of the child. As listed above, it is proposed to mandate case management for children with EBLLs, as the DPH staff (preferably trained in nursing) will work closely with LHDs on case management. Case management

staff would also work in active partnership with the sanitarians in LEMU. The specific recommendation is that the DPH staff (preferably trained in nursing and field-oriented) act as liaisons between the LHDs, the RLTCs, and the DPH, including LEMU. This role must combine education for the LHDs including what is required of them, true assistance in the form of constant information and support, and frequent communication that encourages compliance with new and newly-enforced regulations and protocols.

Measurement and Evaluation of Recommendation 18:
The success of this effort will be measured by monitoring the attendance of each semi-annual case management training provided by CLPPP to LHDs, by pre and post-test evaluations of the training, and by monitoring case management quarterly reports to the commissioner.

Chapter 5: Surveillance

Current Resources and Practices

The DPH has maintained a blood lead surveillance system since 1994; since 1998, laboratory reporting of all blood lead tests for all ages has been required by state statute. A new enhanced surveillance system known as the Childhood Lead Poisoning Prevention Program system (or "CLPPP" system) will be implemented in 2004. The development of this system resulted from an active three state consortium among Connecticut, Massachusetts, and Rhode Island. Notable features of the new system include:

- Case-based meaning that each child uniquely defines a "case" with associated lab tests, address and other demographic information, and sibling information
- Address information can be geocoded so that records can then be used to generate maps
- Data about the child can be linked to data about property inspections and abatement
- Data quality, including the capacity to match client data with imported birth data, and algorithms that improve the accuracy of demographic information. These improvements make it possible to track children by birth cohort
- Client records matched with Medicaid enrollment data; this capacity significantly reduces the effort that has been historically required to produce data files of Medicaid enrollees who were screened (or not) for lead

The DPH is exploring the possibility of making the new CLPPP system available in a web-based format so that LHDs can enter case management information and the DPH will be able to view what has been done. When the system is fully implemented, the DPH will start entering encounter information as reported from local health departments and information related to environmental investigations.

At the same time that the new CLPPP system is being implemented, a second, much larger data system is also entering the early stages of implementation at the DPH. This larger effort is the Connecticut Electronic Disease Surveillance System (CEDSS). This system will provide a web-based disease surveillance application that captures and integrates many types of public health information from many sources department-wide. Electronic laboratory reporting will be one feature of the new system, supported both electronically (ELR) and through a web-based interface.

The CLPPP currently generates annual reports that include cross-sectional counts and rates of lead screening and lead poisoning, by two age groups and by town. The problem with the current counts and rates is that they do not take into account previous testing. Therefore, they are not able to answer the question "how many children *were* ever tested" for a given age group. For example, if 46% of all one and two year-olds were tested for lead in 2002, this is not the same as saying that 46% of all one and two year-olds have *ever* been tested for lead, since a two year-old who had only been tested in 2001 would not be included in the 2002 data. Birth cohort tracking is an alternate way to calculate rates that involves following children over time to determine their screening experience (and lead exposures) at ages one, two and six. Birth cohort tracking is a preferable way to calculate and depict screening and poisoning incidence rates since it incorporates the screening history for each child.

The new CLPPP system will greatly enhance the surveillance of screening and case management for lead poisoning. Similarly, the recent MOA between the DSS and the DPH to share Medicaid patient information will also aid greatly in the effort to identify children who are getting screened and those who are not, and children who are getting case management and those who are not. At the same

time, there are still some points in the management of information that could be improved. First, the laboratory reports of blood lead levels are often not filled out completely, lacking health care provider information, address information and/or race/ethnicity. Second, the use of hand held devices to test for blood lead level may threaten the compliance in data reporting. Third, partnering with the on-going immunization registry may offer a way to identify providers who are not routinely screening for lead. Finally, using GIS is an excellent way of portraying information spatially, especially in the case of lead given the unique interplay between clinical, environmental and demographic factors.

Surveillance Recommendations

Recommendation 19. Develop surveillance data for programmatic use, increase timely and complete compliance with existing reporting (lab-based) of blood lead levels, and utilize GIS mapping to match EBLL cases with abatement activities.

The uses of surveillance data have been discussed in the sections on "Screening" and "Case Management" since tracking of the data is integral to the provision of these services. Below is a summary of the proposed uses of surveillance data that can be used to evaluate successful implementation.

- Yearly, cross-sectional screening and poisoning prevalence rates will continue to be calculated by town. However, once the new CLPPP system is fully functional, birth cohort data will be used to calculate rates to determine overall screening rates of children "ever tested" for lead.
- Screening rates for HUSKY A and B recipients will be calculated for each MCO. These rates can then be used for quality assurance.
- Lists of children who have not been screened will be generated for LHDs. These lists will contain contact information and it will be the health director's responsibility to see that the children in their district get screened.
- Lists of children who have not been screened will be generated for MCOs. Similarly, the MCO will have the responsibility for following up with these children.

Laboratory reports of blood lead levels provide the basis for lead screening data. However, the lab data that is reported is often not complete. By state statute, the following information (among other) is required to be reported: the child's name, date of birth, address, gender, race and ethnicity, and contact information of the provider who ordered the test. Quite often, some or much of this information is absent. Two approaches are possible to try to obtain missing information. The first approach would be to try to enforce the mandate of complete reporting. The second approach would be to recover missing information from other sources. The CEDSS system may allow for some variables that are currently missing (such as race/ethnicity) to be filled in from other sources.

- As the new data systems become fully functional, CLPPP can determine whether incomplete lab reporting still results in significant gaps in information, or whether these gaps can been filled in from other sources. If significant gaps remain and are deemed crucial, then the possibility of educating health care providers and lab and LHD personnel as to the importance of correct data input will be pursued. The identification of an effective deterrent to laboratory non-compliance might also be helpful.

Since EBLLs are lab-reportable, this responsibility falls to health care providers if they do their own blood test analysis. Currently it is a very small number of providers who do their own analysis. However, hand held devices are starting to be used in some settings. If the use of these devices becomes wide-spread, it may provide a challenge to ensure that results are reported to the DPH.

- Lead testing results obtained with hand held devices should be reportable to the DPH, just as other venous and capillary blood tests are. CLPPP will monitor the extent of

the use of these devices; if it becomes a problem in that many blood test analyses are not reported, then avenues for reporting enforcement will be explored. Efforts may include educating providers directly and/or providing notices regarding the reporting mandate upon purchase of a device.

- Geographic representations of blood lead level data combined with housing data and risk factor information can powerfully inform the epidemiology of lead poisoning for a given geographic region. Geographic information permits overlays of data and therefore opportunities to make connections and see relationships. Geographic data also has the advantage of taking potentially complex sets of information and portraying them in ways that are intuitive and readily grasped. As such, city and neighborhood-specific maps could be useful tools for the DPH staff to use with LHD staff and others, to inform lead poisoning prevention work and help set priorities for areas in the most need of prevention services.

Recommendation 20. Partner with the immunization registry to identify providers who are routinely not having their patients screened for lead.

There is currently an immunization registry in Connecticut called CIRTS (Connecticut Immunization Registry and Tracking System) that tracks immunizations from the time of birth. This registry is voluntary on the part of parents, though it appears that the majority of parents participate, meaning that they share their child's immunization history with the registry. Partnering with this initiative would have the advantage of documenting provider information. Specifically, it would be possible to identify providers who serve many children (as witnessed by immunization records) but who tend not to have their patients tested for lead (as seen when the immunization list is compared to lab report data).

Chapter 6: Training and Public Information

The Task Force considered what has been demonstrated as effective in terms of training and public information efforts to achieve behavior change. A review of behavioral science literature on achieving behavior change of any sort highlights key principles to successful training and public information efforts. Relevant theoretical models include the health belief model, social learning theory, and the theory of reasoned action. Each of these theories has as its core the need to educate and enhance the skills to perform risk reduction activities and the need to affect the community norms to support behavior change. Hence, in the case of the elimination of lead poisoning, successful efforts must both change community norms around screening, abatement, enforcement, and lead-safe work practices, and training must provide the groups involved in those activities with the skills and tools necessary to accomplish those tasks. The Task Force has, therefore, organized its recommendations into two categories: public information and training. The public information/social marketing effort is designed to change community norms, by reaching targeted groups at a variety of levels and in a variety of ways. The Task Force has highlighted ideas that may be cost-effective in these efforts. The training components focus on building skills and knowledge of targeted groups to increase screening rates, to increase lead testing of properties, and to promote lead-safe work practices in rehabilitation and abatement work.

Social Marketing links behavioral science theory and marketing concepts in an effort to improve marketing efforts on a variety of fronts. In recent years the CDC and other leaders in public health have adopted these marketing concepts to better reach populations targeted for public health interventions. Applying social marketing concepts such as brand awareness, repeated message delivery, and the use of "tie-ins" (giveaways) to underscore important messages have been very successful. The Task Force has sought to include lessons learned both from behavioral science theory and from the business sector to develop the best plans to change community norms around lead poisoning prevention efforts in CT.

In a review of programs occurring in the state, key groups have been targeted at a number of levels and from a number of perspectives – parents are sought through their health care providers and their case workers (WIC, Medicaid clients). Contractors are sought to be educated through the people that hire them (homeowners/property owners), through professional organizations, and through licensing. The Task Force has sought to develop a plan to reach target audiences on a variety of levels, and from "where they are" to successfully change their norms around these activities. However, to date, this targeting has occurred without coordination of effort or planning to build upon programs.

A review of successful similar public health efforts in CT led the Task Force to consider childhood immunization. While the state lags in rates of screening for lead poisoning (estimated at around 70%) it is among the highest for rates of childhood immunizations (97%). This seems counterintuitive given that this is the same population being sought for lead poisoning. The success of the immunization program, however, has not been without exertion of considerable effort to train and educate both medical providers and members of the general public about the importance of immunization. Tactics such as close monitoring of immunization rates by medical practice, and follow up with in-person training, outreach and support have brought CT's rates to their current levels. Many lessons can be learned from these efforts to increase lead screening rates.

The Task Force chose to model its training and public information planning based on these demonstrated best practices – by clearly considering its target audiences and the best ways to reach them. The Task Force also considered the limited resources available to undertake these efforts and sought, whenever possible, to uncover low-cost or no-cost options for getting the message out, building upon existing initiatives and programs and utilizing train the trainer, cross training, and other methods. The Task Force's resulting recommendations hence are presented on the groups targeted for these efforts. Below is a list of all the groups prioritized as in need of public information and training efforts, as well as groups who might be utilized to reach them:

Target Audience	Additional ways to reach target audience
Policymakers (Federal, State and Local)	Constituents including: local groups and community leaders, the DPH and LHDs
Parents, Guardians, Expectant parents, Other primary care givers	Children, medical providers, schools, child care providers, family resource centers, WIC
Homeowners	Hardware stores/paint stores, mortgage lenders, second mortgage lenders
Child care providers	Parents
Renovators & Remodelers	Customers, trade schools, licensing of contractors, unions/trade organizations, hardware stores, paint stores
Do It Yourselfers	Hardware stores/paint stores (displays and personnel) , lenders giving home improvement loans, building inspectors
LHDs (Directors, Lead Inspectors, Environmental Sanitarians, Lead Program Coordinators, Health Educators, HUD Coordinators, Local Health Case Managers)	CT Association of Directors of Health
Medical Providers (pediatricians, Family Practitioners, Nurse Practitioners, Physician Assistants, nurses, school nurses, child care medical providers)	Parents, professional organizations, RLTCs
Hardware Store/ Paint store employees	LHDs
Volunteers doing renovations	Volunteer Organizations

Resource Inventory/Gap Analysis

The members of the Task Force compiled information on current resources available in CT to provide training and public information to the groups prioritized. Additional interviews were conducted with individuals who identified a program or model strategy for further clarification. A complete resource inventory is attached as Appendix D.

Policymakers (Federal, State and Local)	There is no ongoing organized effort to educate and inform policy makers on the issue of lead poisoning in CT.
Parents, Guardians, Expectant parents, Other primary care givers	While the *Keep It Clean* campaign may reach parents who are engaged in home improvement efforts, there has been no statewide public information effort targeted at parents. City-wide efforts in Hartford and Manchester were highlighted (please refer to Appendix E: City of Hartford Public Information/Social Marketing Campaign as a best practice example.) Training efforts for parents have focused on lead-specific or "healthy homes" trainings which incorporate both asthma and lead. These training efforts are offered as requested, while publicized by the agencies offering them, they have no mechanism to draw large numbers of participants. The CLPPP offers trainings to parents on lead screening, parents' rights and responsibilities, legal issues as they pertain to housing, and the importance of follow-up for lead poisoned children. Trainings are offered via a number of community vehicles on an as requested basis.
Homeowners	No specific ongoing training or public information efforts have been targeted to homeowners broadly, though programs seeking to reach do-it-yourselfers or parents may serve the same audience.
Child care providers	Programs are seeking to educate child care providers through both Head Start and through the CT program which accredits day care centers (CT Charts A Course). These efforts seek to educate day care providers about risks to children within the center and some provide materials for distribution to parents. However, the majority of daycare providers in CT are neither accredited nor affiliated with Head Start.
Renovators & Remodelers Do It Yourselfers (Note: campaigns targeted to paint store/ hardware store employees also seek to reach this audience and hence is included here.)	The Keep It Clean Campaign, operating largely out of home improvement and paint stores on a voluntary basis, is the only statewide campaign reaching this target audience. It is currently being evaluated which will provide valuable insight on its successes. HUD approved (and adaptations of the HUD approved) LSWP trainings are offered by a wide variety of individuals and organizations. The adaptations have not been studied, and have grown out of necessity rather than being based in knowledge about what might work most effectively for the target audiences it has been adapted for. Again, these are mandated trainings through HUD but not currently mandated for contractors or homeowners. Recommendations in the Environment and Housing chapter address these shortfalls and may greatly increase the request for these trainings.

LHDs (Directors, Lead Inspectors, Environmental Sanitarians, Lead Program Coordinators, Health Educators, HUD Coordinators, Local Health Case Managers)	Training for the DPH and other inspectors is carried out largely in CT by LEMU. These refresher trainings, offered at set times throughout the year (8 times annually, 8 hour sessions each time) are supported with additional technical assistance and support from LEMU staff. The course covers local code enforcement requirements for lead inspection and risk assessment activities. LEMU also sponsors initial lead inspector/ risk assessor training courses on an as-needed basis (usually 2-3 courses/year) conducted by a licensed lead consultant contractor. It was identified that the State does not offer a training course designed for other types of housing inspectors on lead hazard evaluation. Moreover, the trainings must be mandatory for all inspectors, with support from their agencies. Finally, additional trainings for LHD and the DPH staff who have a one-on-one relationship with at-risk clients (e.g. case managers) could greatly enhance the "reach" of lead poisoning education.
Medical Providers (pediatricians, FP, NP, PA, nurses, school nurses, child care medical providers)	While efforts have been undertaken in the past by the RLTCs, there is no ongoing training or public information effort targeted to the medical community. Given their role in providing screening and in advising parents, expansion of these efforts to educate the medical community is important. The use of CEUs, of delivery of the message by medical providers (physicians and nurses to physicians and nurses for instance), and the use of in-person approaches such as medical office detailing were suggested as possible methods to get the word out.
Volunteers doing renovations	A brief video-based training for volunteers to programs such as Habitat for Humanity has been developed and funded by HUD. The short video seeks to educate these individuals not only as they work on these homes but may also reach them as they do work or hire contractors themselves. The short video could be adapted for other audiences. Moreover, the Task Force noted as a gap the training for the individuals overseeing these volunteer efforts.
General public PI campaign in the City of Hartford.	The Task Force highlighted a large public information effort undertaken by the city of Hartford. This program, funded by HUD and evaluated, sought to reach Hartford residents with the prevent lead poisoning message through a variety of methods (billboards on public property, advertisements on the side of city vehicles, milk cartons, imprints on letters postmarked in high risk neighborhoods, kiosks in housing court, etc.). These low-cost options, many of which were structural in nature and last long beyond the program's initiation/funding, have been evaluated and determined to be effective. Given the innovative nature of this campaign and its demonstrated success in CT, a brief overview of this "best practice" has been included in Appendix E.

Training and Public Information Recommendations

As discussed above, the Task Force Committee believes that the elimination of childhood lead poisoning in CT by 2010 will require substantial efforts to train, educate, and raise public awareness of the issue to:

- Increase child screening rates – particularly among high risk populations
- Enhance services provided to children even with low (10-19) poison levels.
- Increase property screening rates – all pre-1978 construction should be screened
- Decrease the number of high risk properties
- Increase the availability, awareness of, and demand for lead safe work practices in CT.

Training and public information will need to be addressed to a number of key groups/ target audiences:

- Policy makers
- Parents, guardians, expectant parents, other primary care givers
- Homeowners & do it yourselfers
- Child care providers (including Head Start providers)
- Renovators, remodelers, home repair and maintenance personnel
- Medical providers
- LHDs
- Licensing, building inspectors
- Volunteers doing renovations

Recommendation 21. Coordinate all lead poisoning public information and training efforts statewide. Establish an organization/body to serve as a central clearinghouse for training and public information activities.

- This organization should establish a web-based training calendar – kept up-to-date and widely publicized and including all training and outreach efforts statewide would be publicized.
- This lead poisoning web-site should also be used for dissemination of public information materials at low or no cost.
- Coordinate public information and media efforts statewide with use of a single statewide toll-free number to follow up for additional information, referral, and materials.
- Coordination of outreach to all community groups, community-based providers, and publicly funded programs (WIC, Head Start) to disseminate and distribute training information.

The organization would need an active advisory board of lead organizations and at-risk community representatives, academic research centers, medical providers, LHDs, and legislators from around the Connecticut[7]. The advisory group would oversee and monitor progress on the recommendations of this Task Force related to training and public information.

This organization could also operate the lead-safe housing registry and link it to the same website as the web-based training calendar. (See Recommendation 7)

[7] Advisory board should be no more than 20 individuals and include: DSS, DEP, OPM, DPH, DECD, OCM, RLTCs, Training specialists, housing advocates, managed care representatives, evaluation experts, and at large or community reps.

Recommendation 22. Increase the level of awareness, concern, and compliance among target audiences through a statewide public information/social marketing campaign:[8]

Policy Makers	Establish a recurrent year long educational initiative for policy makers about the effects of lead poisoning in CT, the costs of prevention (and of not undertaking prevention), and the need to eradicate lead poisoning in the state. Dissemination of this plan utilizing multiple methods would be a key component and might include: distribution of informational packets, community meetings/events, and visits from constituents (trained) to discuss the issue of lead poisoning and the need for universal screening, tax incentives for remediation, and other initiatives to meet the goals of this plan.
Parents & Expectant Parents, Other Primary Care Givers, Tenants	Develop a statewide public information campaign directing interested/concerned members of the public to contact the program created in Recommendation 21 for more information on lead poisoning, screening, and abatement. Messages should include: health risks of lead poisoning, ways that children become poisoned, the importance of screening one and two year-olds and housing. The PI campaign should include a wide range of media outlets (internet, radio, television, billboards, brochures, etc.) and methods of distribution of materials (such as inclusion of information in hospital discharge packets for new parents).
Homeowners, Property Owners & Do It Yourselfers	As part of the statewide public information campaign (and expansion of Keep it Clean efforts), messages should be delivered to this group regarding lead-safe work practices, lead testing of properties, legal requirements for landlords, etc. These messages could be delivered through mortgage lenders, tax mill mailings, and other alternative modes of communication.
Renovators, Contractors, Remodelers	Continue and expand "Keep it Clean Campaign" efforts through hardware and paint stores. This expansion might tie into the new statewide public information effort or utilize existing materials, logos, etc. Expansion might include development of a training disk to be included when contractors register with the DCP. LEMU should continue to provide assistance through ongoing "educational interventions" for Pre 406B Disclosure Rule compliance by LEMU staff. Encourage renovators and contractors to attend a one-day lead-safe workers training course offered by certified trainers.
Medical Providers	Mailing of informational materials to all medical providers providing care to children in the state on current recommended practices and standard of care with regards to lead poisoning, services and supports available, links to web training calendar, etc.

[8] NOTE: While the messages and methods may vary from target group to target group a common logo or other component should be maintained to ensure the recognizability of efforts from locale to locale

Recommendation 23. Enhance ongoing statewide training efforts through better coordination, expanded availability, better recruitment, and enhanced publicity/recruitment through the organization/program developed in Recommendation 21 to include the following training efforts:

Parents & Expectant Parents, Other Primary Care Givers, Tenants	Continue to provide in-service trainings for parents via Parent Teacher Organizations.(PTOs) and teen parents (via alternative education programs) regarding lead screening, parents' rights and responsibilities, and legal issues as they pertain to housing. • Develop statewide network of peer educators through train-the-trainer workshops for parents. This will enhance the capacity of communities to educate themselves. • Establish workshops, trainings, presence at health fairs, mailings, flyer distribution, newsletters to train – teachers and family resource centers on lead awareness and the need for lead screenings. • Reach parents/expectant parents through PTO meetings, family resource centers, places of worship, schools, community centers, libraries, lectures, Q&A sessions, and health events to teach them about: the need to screen 1 & 2 year-olds, the need for LSWP in the home, what to teach children, property owner and tenant rights and responsibilities, what homeowners/tenants need to know. • Link with Legal Aid offices to provide information about state and federal legislation, and to offer technical support wherever necessary. • Continue with neighborhood intervention initiatives currently undertaken through the DPH that provides education on keeping a lead-safe home with distribution of lead survival kits for families completing the training. • Increase outreach to community sites such as: churches, synagogues, and other places of worship, local ethnic organizations, and immigrant populations, through partnerships with social and human services agencies to share resources and offer links to needed services for families. The CLPPP is currently involved in a partnership with the Connecticut Association for Human Services (CAHS) for this purpose.
Homeowners, Property Owners & Do It Yourselfers	• Adapt current volunteer video for use by this group and seek distribution through the lead poisoning prevention website, public libraries, video store "free PSA" video programs, local health departments, and family resource centers. • Continue and expand "Keep it Clean Campaign" efforts through hardware and paint stores. • Provide free lead-safe work practices training to community members so that they may be better prepared to conduct their own home repairs in a safe manner. • Seek donations for a lead prevention kit distribution program. Establish a distribution program in targeted, high-risk neighborhoods and provide lead prevention kits, education, and blood lead screenings to children under the age of six for families living in units identified as having lead hazards. • Train community members to teach lead-safe work practices trainings.

Child care Providers

Expand and continue trainings for both in-home and center based day care providers on lead safety, lead-safe work practices, teaching children about hand washing, and the need for parents to have their children screened. Training should target owners through lectures, training sessions, health events, and by offering to hold screening events at centers.

- Continue work with CT Charts A Course to integrate training for all approved child care centers.
- Integrate outreach to centers through the DPH's division of Community Based Regulation.

Renovators, Contractors, Remodelers

Generally trainings for these groups need to be promoted more widely – perhaps through increasing of customer (homeowner/property owner) demand for lead-safe work practices. Each of the trainings below should have the following outcomes/objectives:

- *Recognition of the importance of using LSWP*
- *Recognition of the value to customers (homeowners) of working lead-safe*
- *Impart the dangers of lead, the methods to work lead-safe, safe disposal, and state and federal regulations in regards to lead safety.*
- *Impart legal guidelines/requirements for lead-safe work practices and disclosure.*

- Expand the Keep it Clean Campaign through home improvement/paint stores. The existing program provides a video training for store employees, posters, and a lead-safe work practices brochure for customers. A new pilot training effort for employees and a new video and interactive classroom training efforts is currently underway.[9]
- Continue lead-safe work practices trainings through state approved trainers – tie to website/training calendar in Recommendation 21 above. Consider offering through adult education courses in local communities as well.
- Continue to expand training and provide compliance assistance through "educational interventions" conducted by LEMU staff. Promote, encourage, and recommend attendance in lead-safe work practices training courses by contractors.
- Develop web-based training in lead-safe work practices for renovators and remodelers based on Connecticut's HUD-approved classroom training; the web-based training course would provide self-paced, interactive instruction, over the World Wide Web.

[9] NOTE: This is a voluntary program. Currently funded through EPA/NELCC at $10K annually – first evaluation to be conducted by UCONN in 2004. Pilot training effort ongoing at 11 stores.

Medical Providers	• Develop a Speaker List to be used to increase education of medical providers including pediatricians, family practitioners, obstetricians, nurse practitioners, physician assistants and nurses (including school nurses and daycare provider consultants) RLTCs would serve as an excellent resource for inclusion in the speaker list. • Undertake a statewide effort to reach medical providers through local hospital Grand Rounds focusing the message on current screening recommendations or mandates, preventative anticipatory guidance during well child care visits, CT statistics on incidence of lead poisoning and current screening rates, current research on toxicity of low lead levels, services of the RLTCs, and the legal rights of families. • Identify medical practices with low screening rates and target those offices' providers and office staff. • Continue to work with Medicaid MCOs providing HUSKY benefits to improve screening rates among their physicians, educate parents about lead poisoning, and increase lead screening as is mandated by federal EPSDT requirements. • Integrate lead poisoning into curricula of medical and nursing schools in CT to further spread the word about the need for lead screening. • Work with Area Health Education Centers (CAHEC) already engaged in other types of medical education to integrate lead poisoning prevention and treatment into ongoing training activities.
Local Health Departments, Licensing, Building Inspectors, Section 8 Inspectors	Continue training to LHDs through lead inspector/risk assessor refresher trainings and lead inspector/ risk assessor initial courses and provide updates on key issues at semiannual meetings conducted by the CLPPP and LEMU. • Train all HUD HQS inspectors to perform a "Limited Lead Hazard Evaluation" as part of HQS, within 1 year. The HQS inspection training must include a visual evaluation of paint conditions and limited dust wipe sampling. (this latter activity is **not** currently performed by HQS inspectors). Expand lead inspector/lead hazard evaluation trainings to include others performing housing inspections, not just lead inspectors. • Train at multiple levels – beginning with local health directors through the CT Association of Directors of Health (CADH) through the CT Environmental Health Association and the CT DOH Local Health Administration Offices. • Utilize new guidelines for local health departments as a "jump start" for programs to participate in training efforts and provide yearly, mandatory trainings for all levels of LHD staff.
Volunteers Doing Renovations	• Expand provision of HUD volunteer training tapes. • Initiate LSWP training for leaders of volunteer groups and establish an inventory of training and supports available.

Measurement and Evaluation of Recommendations 21-23**:**

The success of the Training and Public Information Recommendations will be evaluated by:

- *Tracking growth of participation in trainings*
- *Tracking calls into the Lead Hotline, as well as types of topics and information requested, and types of referrals made.*
- *Tracking growth of training calendar.*
- *Tracking "hits" on lead website (training calendar and lead safe housing registry)*

- *Evaluation of social marketing efforts through methods such as pre-post intervention surveying, focus groups, or key informant interviews of representatives of target audiences to determine penetration, recognition, recollection, and actions taken by members of target audiences.*

Appendices

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Appendix A:

CT Childhood Lead Poisoning Elimination Task Force Committee Membership

CT Childhood Lead Poisoning Elimination Task Force Committee Membership

Environment and Housing Committee	
James Bryson	EPA Region 1
Al Buzzetti	CT Department of Public Health
Louis Carta	Middletown Health Department
Judith Dicine (co-chair)	Division of Criminal Justice, Housing Matters
Peter Folino	Eagle Environmental
Neal Freuden	EnviroScience
Robert Jase	West Haven Health Department
Erin Kemple	CT Fair Housing Center
Ronald Kraatz (co-chair)	CT LAMPP Project
Martin Nee	US Dept. of Housing and Urban Development
Leonard Nelson	Risk Assessor/ Lead Inspector
Sally Odle	Safe Homes, Inc.
Brad Parandes	CT Environmental Health Assoc., Meriden Health Department
Edith Pestana	CT Department of Environmental Protection Environmental Equity Program
Karen Pio	CT Rental Housing Alliance
Erik Plimpton	TRC Environmental
Kristin Rinehart-Totten	New Haven Legal Assistance Association
Bethany Sanderson	Community Renewal Team Inc., Home Solutions Program
Brian Testut	New London Department of Health and Social Services
Screening/Case Management/Surveillance Committee	
Patricia Beckenhaupt	Northeast District Department of Health
Eileen Boulay	CT Department of Public Health
Donna Buntaine Brewer	CT Department of Public Health Public Hearing Office
Rose Ciarcia	CT Department of Social Services
Holly Frost	Grove Hill Clinic
Audrey Gaines	Bridgeport Health Department
Philip Greiner (co-chair)	Fairfield University School of Nursing
Alfred May	Stamford Health Department
Andrew McBride	Milford Health Department
Kathleen McKay	CT Children's Medical Center
Mikki Meadows-Oliver	Yale New Haven Regional Lead Treatment Center
Justin Peng	CT Department of Public Health
Mark Schaefer	CT Department of Social Services
Sharon Sharp	CT Department of Public Health
Hilda Slivka (co-chair)	Hartford Regional Lead Treatment Center
Bruce Wallen	CT Department of Public Health Data Processing

Primary Prevention Committee	
Mark Aschenbach	CT Department of Public Health
Joan Bothell	New England Lead Coordinating Committee, UCONN Healthy Environments for Children Initiative
Liz Brown	CT Commission on Children
Cheryl Ann Carotenuti	CT Department of Education
Ana Chambers	CT Department of Public Health
Richard Davis	CT Remodelers Association
Mary-Margaret Gaudio	UCONN Cooperative Extension System
William Gerrish	CT Department of Public Health Communications
John Latour	Access Agency, Inc.
Kathleen Lovell	Manchester Lead Action
Amy McLean-Salls (co-chair)	CT LAMPP Project
Lisa Menillo (co-chair)	Hartford Regional Lead Treatment Center
Lisa Stapleton	CT PULSE

Appendix B:

Environmental and Housing Resource Inventory

Table I. Existing Funding Programs for Lead Hazard Control in Housing

Table II. Companies Available in Connecticut Working in Industry

Table III. Regulatory and Enforcement Agencies

Table I. Existing Funding Programs for Lead Hazard Control in Housing

Agency/ Program Name	Program Goals	Funding Source	Who oversees the program?	Target audience	How is audience referred to the program	How are goals tracked/ measured	Partners
CT Lead Action for Medicaid Primary Prevention (LAMPP) at Connecticut Children's Medical Center	Early intervention and preventive program to reduce lead hazards	HUD Office of Healthy Homes and Lead Hazard Control (OHHLHC) through March 2007	CT Department of Social Services LAMPP Project Director	Medicaid enrolled children under 6, property owners providing housing to eligible population	Medical care providers, local health and community development departments, courts, and others	Milestones set for inspections, cleared housing units and training sessions	CT DPH, CT Dept. of Economic Development, CT Get the Lead Out Coalition, Regional Lead Treatment Centers at Yale-New Haven and Hartford, 11 partner communities, and CRT Home Solutions
Community Renewal Team (CRT), Home Solutions Program	Provide financial assistance to qualified home owners for the purpose of lead/ asbestos remediation	Dept. of Economic and Community Development (DECD)	DECD CRT	Homeowners and landlords of residential units needing lead/ asbestos remediation.	Through Health Depts., other social service programs/ organizations, self referral	Tracked monthly by receipt of unit clearance documentation. Measured by ability to provide funds and create lead-safe housing through abatement procedures	LAMPP, other lead programs, HD's and social services agencies

Agency/ Program Name	Program Goals	Funding Source	Who oversees the program?	Target audience	How is audience referred to the program	How are goals tracked/ measured	Partners
CDBG Small Cities Program – Wolcott, Prospect, Branford, Mansfield Center, Mansfield, Willimantic, Middlebury, Southbury, Newington, Rocky Hill, Granby, Terryville, Norfolk, Colebrook, North Canaan, Litchfield, Windham, Wethersfield – applicants apply for funding in their respective towns.	Housing rehabilitation and lead hazard control	CDBG Small Cities Program	DECD Individual Towns	Varies			
The ACCESS Agency, Lead Elimination Action Program (LEAP)	Remediate lead hazards in homes with Lead Safe Work Practices	HUD OHHLHC through June 2005	HUD LEAP Project Director	Home owners	WIC, DSS, Energy & Weatherization, Local Community Programs	By units complete	Other community development offices
Bridgeport Health Dept., CLPPP	Screening and case management of child; source identification and elimination, relative code enforcement; prevention	CLPPP, CDBG, EPA and City General Fund	CT CLPPP Director of Health	Children 6 and under; parents; property owners	Doctors, program soliciting	Pre-determined performance standards	Community health clinics, (BCHC) Hospital Lead Safe House; Fairfield U. Health Promotions, East End Community Council; EPA-Healthy Communities; Americorps; all inter-municipal divisions

Agency/ Program Name	Program Goals	Funding Source	Who oversees the program?	Target audience	How is audience referred to the program	How are goals tracked/ measured	Partners
East Hartford Lead Hazard Control Program		HUD OHHLHC through March 2007	HUD Director of Grants Office	Owners of housing with 1-4 units		HUD Performance Standards	
City of Hartford Lead Hazard Control Program		HUD OHHLHC ending in 2004	HUD Director of Health and Human Services			HUD Performance Standards	
Town of Manchester Lead Action Project	Lead hazard control in target housing, increased capacity of housing market to deal with lead	HUD OHHLHC through Sept. 2004, CDBG	HUD Director of Health & LAP Administrator	Property owners, families, workforce, real estate, mortgage lenders	Outreach, advertising, health department	HUD Performance Standards	Schools, Real Estate, Mortgage Lenders, Contractors
City of Meriden, Neighborhood Preservation Program	Neighborhood Improvement	Local Bonds and CDBG	Department of Development and Enforcement	Property owners in target neighborhoods			LAMPP
City of New Britain Lead Hazard Control Program		HUD OHHLHC through Feb. 2004, CDBG	HUD Department of Municipal Development			HUD Performance Standards	LAMPP
City of New London, Dept. of Health & Social services, CLPPP/ Lead Hazard Reduction Program	Educate general public, landlords, parents, contractors; Follow mandates, enforce laws/ codes; run HUD grant program. Sponsor 1-day LSWP course	CLPPP + local CDBG funds and City General Fund, HUD OHHLHC through 2004	HUD Director of Health and Social Services	Families with children under 6, landlords, contractors, and general public	Other city agencies, doctors/clinics, Word of mouth,	HUD Performance Standards	ODP – HCP program

Agency/ Program Name	Program Goals	Funding Source	Who oversees the program?	Target audience	How is audience referred to the program	How are goals tracked/ measured	Partners
City of New Haven Lead Hazard Control Program		HUD OHHLHC through 2004, CDBG	HUD Health Department			HUD Performance Standards	LAMPP
City of Norwalk Residential Rehabilitation Program		CDBG	Redevelopment Agency				LAMPP
City of Stamford Health and Social Services, Lead Poisoning Prevention Program	Use risk mapping of target census tracks and/or neighborhoods to: improve screening rates of high-risk children, improve awareness of lead poisoning to physicians and clinics, and create about 110 newly lead-safe housing units	HUD OHHLHC through 2004	HUD Stamford Community Department Programs with HD doing case management, inspection, clearance.	Multi-family dwelling owners, low and moderate income families, single family dwelling sources	EBLL $\geq$ 10, Complaint process, new ownership or Community Development "Home" Program	Screening rates per year (+/-), Housing units completed, Time frame for abatement being completed, improvements in physician/ clinic communication	Joint program between 2 city agencies: Community development and Health & Social services, LAMPP
City of Waterbury Housing Rehabilitation Program		CDBG					LAMPP
City of West Haven Community Development		CDBG					LAMPP

Table II. Companies Available in Connecticut Working in Industry

Category	Services	Number of Firms Licensed or Listed
Lead Consultant	Inspection, Risk Assessment, Project Design, Supervision, Clearance Testing	35
Lead Consultant and Abatement Contractor	Combined Services (above and below)	36
Lead Abatement Contractor	Lead Abatement in housing	91
Home Improvement Contractor with Workers Trained in Lead-safe Work Practices *	Remodeling, Painting, Maintenance in housing with lead-based paint	129

* Listed on CT DPH website

Table III. Regulatory and Enforcement Agencies

Agency/ Program Name	Program Goals	Funding Source	Who oversees the program?	Target audience	How is audience referred to the program	How are goals tracked/ measured	Partners
Dept. of Public Health, Lead Environmental Management Unit (LEMU)	Elimination of lead, overseeing local health departments and districts	EPA	Al Buzzetti	Contractors, sanitarians, environmental companies, general public	Licensing and general public		
Hearing Office, LEMU + CLPPP	Hear appeals of local health director orders to abate lead	State and federal funds				Data received/ reviewed/ complied/ tracked	Local Health Directors
State of CT, Div. of Criminal Justice, Office of the Chief States Attorney	Enforcement of general statutes requiring abatement of lead through criminal	State of CT, Div. of Criminal Justice	Chief States Attorney	Property owners cited for lead paint or other lead violations who have failed to comply	Local HD or district	Records of compliance are a mandatory part of the file. For the case to reach disposition, compliance is demanded	Housing court prosecutors in Bridgeport/ Norwalk, Hartford/ New Britain, Eastern CT
CT Dept. of Environmental Protection, Environmental Justice	Ensure equal environmental protection under the law, and equal access to State resources	General Fund, Solid Waste Fund	General Fund, Solid Waste Fund	Low income populations in distressed communities	Invite from DPH Commissioner's Office	Inspection Case Log	EPA, DPH, local HD, Mayors' Offices, State Prosecutor's Office, Police Depts.

Agency/ Program Name	Program Goals	Funding Source	Who oversees the program?	Target audience	How is audience referred to the program	How are goals tracked/ measured	Partners
Local Health Departments and Districts	Prevention of lead poisoning, enforcement of related regulations	Local governments and State per capita funding	Local Director of Health	Children under 6, property owners	Mandated reporting of EBLL in child, complaints	Oversight from DPH	
U.S Department of Housing and Urban Development	Compliance with Lead Safe Housing Rule	U. S. government	Regional Office in Boston	HUD supported programs			State and Local agencies administering funding programs
U.S. Environmenta l Protection Agency	Compliance with federal regulations at 40 CFR Part 745 regarding lead-based paint poisoning prevention in residential structures	U. S. government		Real estate industry, consultants, contractors, property owners			State approved enforcement programs

Appendix C:

Model Ordinances for Cities and Towns

I. Model Ordinance for Deteriorated Paint and Lead-Based Paint Hazards

II. Model Ordinance for Paint Removal from the Exterior of Buildings and Structures

I. Model Town Ordinance or Regulation[1]
Deteriorated Paint and Lead-Based Paint Hazards

(1.) **Paint Condition**
All portions of buildings used in whole or in part for human residence, as well as any accessory structures on the premises thereof, shall be kept free of deteriorated paint including, but not limited to, conditions such as cracking, chipping, blistering, flaking, or loose paint. Such deteriorated paint conditions shall be properly prepared, treated, and corrected in accordance with the standards of the Regulations of Connecticut State Agencies (RCSA) §19a-111-1 et seq. (the Lead Poisoning Prevention and Control Regulations) when applicable and otherwise, in a safe manner such that any existing lead hazards will be eliminated and new lead hazards will not be created. Any paint that will be used to repaint such surfaces shall conform to the standards of the Lead-Based Paint Poisoning Prevention Act, Chapter 63 of the Social Security Act, the RCSA §19a-111-1, and the RCSA §21a-336-1.

(2.) **Lead-Based Paint Testing (General)**
The director of health may require the owner of a dwelling where lead-based paint may be present to engage the services of a State of Connecticut licensed lead consultant contractor at the owner's expense. The licensed lead consultant contractor shall utilize a State of Connecticut certified lead inspector or lead inspector/risk assessor to conduct paint testing, document paint conditions, and evaluate compliance with the requirements of the provisions of the Connecticut General Statutes (CGS) §19a-111c, §47a-54f, and the RCSA §19a-111-1 et seq. The owner shall provide a copy of the report that is generated by the lead consultant contractor to the director of health within a timeframe that is specified by the director of health.

(3.) **Lead-Based Paint Testing, Abatement, and Lead Hazard Elimination Associated with Lead Poisoned Children**

(A) **Inspection and Testing** Whenever the director of health receives a report of lead poisoning or otherwise determines that a child under the age of six (6) has an abnormal body burden of lead, the director of health may require the owner of the dwelling in which such child resides to engage the services of a State of Connecticut licensed lead consultant contractor to inspect and test the paint, soil, water, and dust on the premises for toxic levels of lead at the owner's expense. The owner shall provide a copy of the lead inspection report that is generated by the lead consultant contractor to the director of health within a timeframe that is specified by the director of health. The licensed lead consultant contractor shall utilize a State of Connecticut certified lead inspector or lead inspector/risk assessor to conduct the lead inspection and testing.

(B) **Abatement and Lead Hazard Elimination** The director of health shall order the abatement or elimination of hazardous conditions if the lead content of paint, soil, water, and dust on such premises exceeds the permissible limits thereof as established and/or referenced in this subsection.

(a) **Paint** Abatement shall be required if the lead content and condition of paint on the premises do not conform to standards established in the RCSA §19a-111-1 et seq.

(b) **Soil** Abatement shall be required by the director of health if the lead content of bare soil areas on the **premises** exceeds four hundred (400) mg/kg [400 parts

per million (ppm)] or any applicable standard as may be established in the RCSA §19a-111-1 et seq.

(c) **Dust** The director of health shall require the elimination of hazardous lead dust conditions. Hazardous lead dust conditions are lead dust levels greater than or equal to forty (40) micrograms per square foot ($\mu g/ft^2$) on floors, two hundred and fifty (250) $\mu g/ft^2$ on window sills, and/or four hundred (400) $\mu g/ft^2$ on window wells or any applicable standard as may be established in the RCSA §19a-111-1 et seq. The director of health may determine that hazardous lead dust conditions exist on surfaces other than those listed above.

(d) **Water** The director of health shall require appropriate action to reduce the potential for lead exposure when the lead content of potable water exceeds 0.015 mg/l [15 parts per billion (ppb)].

(4.) **Lead Abatement Contractor**

The director of health may require the owner of a dwelling to engage the services of a State of Connecticut licensed lead abatement contractor, at the owner's expense, to ensure compliance with standards established in the RCSA §19a-111-1 et seq. and to abate and eliminate lead hazards as described in subsection three (3) above where, in the sole discretion of the director of health, the scope of work will exceed the capability of the owner and the owner's regular employees.

(5.) **Penalty**

Any person, persons, or entities who are found in violation of any provision of this ordinance, shall be subject to a fine of ***[Insert written dollar amount]*** dollars ($XXX.XX) per day or per occurrence.

RATIONALE OF PURPOSE

Per various Connecticut statutes and regulations local health departments are designated as responsible parties for the comprehensive public health oversight and management of lead poisoned children. Additionally, local health departments must assume a proactive role in the development and implementation of measures that reduce the potential for lead exposure and promote the primary prevention of lead poisoning (i.e., prior to an individual becoming lead poisoned). In the event that a child is lead poisoned the local health department must require that appropriate measures be instituted to prevent further lead exposure. This amendment will enable the ***[Insert name of local health department]*** to provide these services and fulfill these obligations in a more effective manner.

1. Please note that, as with any local regulatory initiative, a draft ordinance or regulation should be referred to Legal Counsel for review and comment. In this regard it is recommended that Corporation Counsel be asked to review the Model Ordinance.

Model Local Ordinance or Regulation to Regulate Paint Removal from the Exterior of Buildings and Structures

Scope of Regulation

The director of health proposes regulations that will: (1) require that notice be given to the director, five business days prior to the commencement of any abrasive blasting, power sanding, hydro-blasting, open flame burning, power washing to be performed with the intent of removing paint, or similar abrasive paint removal operation that will disturb more than two (2) square feet of paint and that may result in the release of visible dust, mist or contaminated liquids from the exterior of a residential, commercial or public building that was constructed prior to December 31, 1978 or from the exterior of a structure regardless of the date of construction, (2) authorize the health department to establish and collect notification fees to offset costs related to program administration, oversight and management, and (3) establish: (a) definitions, (b) applicability and exemption criteria, (c) procedures for submission of notifications, (d) appropriate work practices and (e) penalties for non-compliance.

II. Model Local Ordinance or Regulation
Paint Removal from the Exterior of Buildings and Structures

-xxx-1 Definitions. As used in sections -xxx-1 through -xxx-5 inclusive:

(1) "Commercial building" means any building that is used or is intended to be used for commercial purposes including, but not limited to, a building where retail, wholesale, storage or manufacturing activities occur.

(2) "Commissioner" means the commissioner of public health.

(3) "Containment" means a physical system to protect workers, residents, and the environment by controlling exposures to lead dust and debris that are created during a paint removal project.

(4) "Department" means the State of Connecticut, Department of Public Health.

(5) "Director of health" or "Director" means [***the municipal health director for the _____ of _____ or the district health director for the _____ Health District***] as defined in chapters 368e and 368f of the Connecticut General Statutes.

(6) "Entity" means any person, partnership, firm, association, corporation, sole proprietorship or any other business concern, state or local government agency or political subdivision or authority thereof, or any religious, social or union organization, whether operated for profit or otherwise.

(7) "High efficiency particulate air" (HEPA) means a type of filtering system capable of removing and retaining particles of three-tenths (0.3) microns or larger diameter from a body of air at 99.97% efficiency or greater.

(8) "Lead-based paint" means paint that contains a toxic level of lead as defined below.

(9) "Owner" means any person, partnership, firm, association, corporation, sole proprietorship or any other business concern, state or local government agency or political subdivision or authority thereof, or any religious, social or union organization, whether operated for profit or otherwise, who, alone or jointly with others owns, holds, or controls the whole or any part of the deed or title to any property. No holder of an easement, mortgagee, bank or lender holding the mortgage shall be considered an owner except when the holder of an easement, mortgagee, banker, or lender takes physical possession of the property.

(10) "Paint" means any substance that has been or may be applied to a surface as a surface coating, including, but not necessarily limited to, paints, varnishes and stains.

(11) "Paint removal project" means any project that will disrupt and remove more than two square feet of paint from the exterior surfaces of a commercial, public or residential building that was constructed prior to December 31, 1978 or from the exterior surfaces of a structure regardless of the date of construction of the structure.

(12) "Power washing" means operations that utilize sufficient water pressure to remove more than two square feet of paint from the exterior surfaces of buildings and structures.

(13) "Public building" means any building that is owned, leased or occupied by the State or any of its subdivisions, or by any town, city or borough in the State that includes, but is not limited to, a courthouse, town or city hall, statehouse, or offices used for public transactions.

(14) "Residential building" means any building, or portion thereof, that is occupied or is intended to be occupied as a home or residence by one or more persons that includes, but is not limited to, a dwelling and outbuildings, and associated fences and play equipment.

(15) "Structure" means any large metal edifice that includes, but is not limited to, a bridge, dam, framework or tank.

(16) "Toxic level of lead" means a level of lead that when present in a dried paint on an exterior surface of a residential building, commercial building, public building or structure, contains (a) greater than 0.50 percent lead by dry weight as measured by flame atomic absorption spectrophotometry (FAAS), graphite furnace atomic absorption spectrophotometry (GFAAS), inductively coupled plasma-atomic emission spectrophotometry (ICP-AES) or another testing protocol deemed acceptable by the commissioner by a laboratory approved by the department for lead in paint analysis, or (b) equal to or greater than 1.0 milligrams lead per square centimeter of surface as measured on site by an x-ray fluorescence analyzer or another testing protocol deemed acceptable by the commissioner.

-xxx-2 Applicability and Exemptions.

a) The provisions of this regulation shall apply to any paint removal project that involves the exterior surfaces of a building or structure that contain, or may contain, lead-based paint and to the building or structure owner and all entities that are engaged in such paint removal, unless exempted per subsection (b) of this section.

b) Activities that are exempted from the requirements of these regulations shall include: (1) ordered lead abatements that are conducted pursuant to section 19a-111-1 et seq. of the Regulations of Connecticut State Agencies (RCSA); (2) paint removal that is conducted at residential, commercial or public buildings that were constructed in their entirety after December 31, 1978; and (3) the removal of paint from buildings, structures, building components or components of structures that have been assessed by a State of Connecticut certified lead inspector or lead inspector risk assessor and found not to contain lead-based paint. To qualify for the exemption as provided in item (3) of this subsection, a representative sample of paint from each exterior surface that has a different painting history and from which paint is to be removed, must be tested prior to the initiation of paint removal or disturbance. The owner shall retain proof of such testing and copies of analyses results for a period of at least three (3) years. These records shall be available for review by the Director. Sampling and analysis of the paint must be conducted in accordance with procedures established in section 19a-111-1 et seq. (RCSA).

c) Any such testing of paint for the purpose of exemption from this regulation, is the sole responsibility of the property owner.

-xxx-3 Work Practices.

a) If testing reveals the presence of lead-based paint, or if the property owner has chosen not to test paint that may be lead-based, work shall be performed in a manner so as to ensure that expended abrasive blasting material, paint particulate, lead contaminated liquid, dust and other debris are properly contained and collected and shall not escape into the atmosphere, onto soil, onto adjoining property or onto public streets nor be released in any other way to the environment. All lead contaminated residue that is generated, shall be properly contained, collected and disposed of per applicable federal, state and local regulations.

b) Paint removal operations shall be suspended during adverse weather conditions such as heavy rain and high wind or other circumstances during which containment systems are not or are unlikely to be effective in capturing and controlling lead dust and lead debris.

c) Site preparation for exterior paint removal projects during which abrasive removal techniques such as abrasive blasting, power sanding, grinding or scraping, or similar abrasive paint removal

operations will be used, shall be adequate so as to protect against the deposition of lead contaminated waste or debris onto any soil, surface water or public street. A plan describing these protective procedures shall be submitted to the director of health at the time of notification pursuant to subsection -xxx-4(a) of these regulations, for review and comment, prior to the initiation of paint removal. The following site preparation requirements shall apply to the abrasive removal of lead-based paint, or paint that may be lead-based, from the exterior surfaces of buildings and structures:

1) Remove or cover with 6-mil polyethylene sheeting or an equivalent material, all toys, play equipment, furnishings and similar items that cannot be moved and are located within 50 feet of the work area. If, in the opinion of the director of health, expended abrasive blast material, paint particulate, lead contaminated liquid, dust or other debris that will be generated during the paint removal operation, may travel beyond 50 feet from the work area, this protective distance shall be increased in a commensurate manner.

2) Place 6-mil polyethylene sheeting or an equivalent material, on the ground surface at the work area, so as to capture and contain any and all expended abrasive blast material, lead contaminated liquid, paint particulate, dust and other debris that will be generated during the paint removal project and eliminate any deposition of such waste materials on the ground surface. Such sheeting shall extend a minimum of five feet from the base of a building from which paint is being removed. The sheeting shall extend an additional three feet from the building for each additional story of the building above the ground floor, up to a maximum of twenty feet of sheeting as measured from the base of the building.

3) Vertical shrouding may be required by the director of health if:

   A) Public, commercial or residential buildings are located on adjoining properties less than 20 feet from the building or structure that will undergo the paint removal activity; or

   B) In the opinion of the director, wind or other conditions exist that may cause the deposition of expended abrasive blast material, paint particulate, dust or other debris beyond the ground covering

d) Site preparation for exterior paint removal projects during which wet paint removal techniques such as hydro-blasting or power washing will be used shall include containment procedures that will capture and contain any and all liquid residues that may be generated. A plan describing these protective procedures shall be submitted to the director of health at the time of notification pursuant to subsection -xxx-4(a) of these regulations, for review and comment, prior to the initiation of paint removal. The following site preparation requirements shall apply to the removal of lead-based paint, or paint that may be lead-based, from the exterior surfaces of buildings and other structures using such wet removal techniques:

1) Remove or cover with 6-mil polyethylene sheeting or an equivalent material, all toys, play equipment, furnishings and similar items that cannot be moved and are located within 50 feet of the work area. If, in the opinion of the director of health, expended abrasive blast material, paint particulate, lead contaminated liquid, dust or other debris that will be generated during the paint removal operation, may travel beyond 50 feet from the work area, this protective distance shall be increased in a commensurate manner.

2) Place 6-mil polyethylene sheeting or an equivalent material, on the ground surface at the work area, so as to capture and contain any and all expended abrasive blast material, lead contaminated liquid, paint particulate, dust and other debris that will be generated during the paint removal project and eliminate any deposition of such waste materials on the ground

surface. Sheeting employed in these operations shall be constructed so as to contain liquid runoff by placing raised berms at the perimeter of the sheeting.

e) The following general site preparation and work practice requirements shall apply to all paint removal projects.

1) All doors and windows on any side of a building that is subject to exterior paint removal shall be closed. Additionally, all doors and windows on the side(s) of the building that is to be treated shall be securely sealed so as to prevent the migration of debris to the interior of the building. All air conditioning units and air handling systems shall be turned off and securely sealed so as to prevent the migration of debris to the interior of the building. Compliance shall be maintained with all building and fire code requirements regarding access to or egress from the building.

2) Open flame and high heat paint removal procedures shall not be used. Heat guns shall be operated at a temperature of 700^{0}F or below.

3.) Wet methods shall be used for manual sanding and scraping paint removal activities. The director of health may permit dry sanding and scraping of small areas such as the immediate vicinity of electrical receptacles and switches that may present safety hazards.

f) Alternate technology that is proposed for use during a paint removal project may be approved by the director of health if, in the opinion of the director, sufficient evidence is provided by the owner that indicates that the alternate technology provides protection that is equal to or better than the protection that is described in subsections (c) and (d) of this section. Reduction of the extent of ground and vertical containment systems may be considered when power tools such as sanders, grinders or scrapers that are to be used during paint removal projects, will be properly fitted with shrouding and a HEPA filtered dust collection exhaust system.

-xxx-4 Notifications.

a) The owner of the building or structure shall notify the director of health a minimum of five (5) business days prior to the start of the paint removal project. The notification shall be submitted on forms prescribed by the director and accompanied by a notification fee of $***. A plan that documents the method of removal, containment, clean-up and disposal of waste and debris, shall be included with the notification. Written documentation of this notification shall be retained by the director and the property owner for a period of at least three (3) years.

b) The persons listed below shall also be notified by the owner or by the entity that will conduct the paint removal operation. Notification shall be in writing on forms prescribed by the director. Notification shall be provided a minimum of five (5) business days prior to the start of any exterior paint removal project. Written documentation of these notifications and the persons so notified shall be maintained by the property owner for a period of at least three (3) years.

1) All adults who reside in the building from which the paint is to be removed and all owners of adjoining properties; and

2) The owner, agent or manager of any business or organization that is located in the building from which the paint is to be removed; and

3) The owner(s) of any residence, business or organization whose property line is located within 100 feet of the building or structure from which paint is to be removed; and

4) The principal or the chief administrative officer of any school whose property line is located within 500 feet of the building or structure from which paint is to be removed or that is located on adjoining property.

c.) The director may require that the owner or the entity that will conduct the paint removal operation post notice on the property. The notice shall be readily visible to the public from the principal public thoroughfare that abuts the property. The director may waive any of the notification requirements that are specified in subsection (b) of this section when such notice is posted on the property a minimum of five (5) business days prior to the start of any exterior paint removal project.

d) An acknowledgment of receipt of the notification required in subsection (a) of this section may be issued by the local health department and may include information on safe work practices.

-xxx-5 Penalties.

a) When in the opinion of the director of health any paint removal project causes a nuisance, such director may order the owner of the property on which said nuisance has occurred or is occurring or other person or persons responsible for creating the nuisance, to remove or abate the same within the time established by the director. If such order is not complied with within the time established by the director: (1) the director or his designated agent authorized to institute actions on behalf of [***Insert Name of Town or Health District***], may institute and maintain a civil action for injunctive relief in any court of competent jurisdiction to require the abatement of the nuisance, the removal of debris created by paint removal practices and the restraining and prohibition of acts that caused the nuisance and debris and that court shall have the power to grant injunctive relief upon notice and hearing; (2) the owner of such property or the person or persons responsible for such activities, or both, shall be subject to a civil penalty of two hundred and fifty dollars per day for each day such nuisance is maintained or such paint removal debris is allowed to remain after the time established by the director in his order has expired.

b) If the director of health institutes an action for injunctive relief seeking abatement of a nuisance that has been created as the result of a paint removal project, the maintenance of which is so serious in nature as to constitute an immediate hazard to the health of persons, he may, upon a verified complaint stating the facts which show immediate hazard, apply for an ex parte injunction requiring the abatement of such nuisance or the removal of such debris and the restraining and prohibiting of the acts which caused such nuisance or debris to occur and for a hearing on an order to show cause why such ex parte injunction should not be continued pending final determination of the merits of such action.

Appendix D:

Training and Public Information Resource Inventory

Target Audience (who attends) Languages available	***Training Objectives***	***Program Name*** ***Who conducts*** ***Who funds***	***Length of training & How often given***	***Limits/Barriers***
Parents	Provide in-service trainings for parents (via Parent Teacher Organizations (PTOs), community action groups, etc.) and teen parents (via alternative education programs) regarding lead screening, parents' rights and responsibilities, legal issues as they pertain to housing, and the importance of follow up for lead poisoned children	CLPPP CLPPP CDC, State funds	1-2 hours as often as requested	
Parents (through family resource center staff)	Reach parents/expectant parents through PTO meetings, family resource centers, places of worship, schools, community centers, libraries, screening events, lectures, Q&A sessions, health events; teach them about the need to screen 1 & 2 year olds, need for lead safe work practices in the home, what to teach children, rights and responsibilities, what homeowners/tenants need to know, via local ethnic organizations, etc. Also offer health fair participation (where appropriate)	CLPPP Trainings CLPPP CDC, State funds	1-2 hours as often as requested	
Parents (Head Start Program Staff)	Reach parents/expectant parents through PTO meetings, family resource centers, places of worship, schools, community centers, libraries, screening events, lectures, Q&A sessions, health events; teach them about the need to screen 1 & 2 year olds, need for lead safe work practices in the home, what to teach children, rights and responsibilities, what homeowners/tenants need to know, via local ethnic organizations, etc. Also offer health fair participation (where appropriate)	CLPPP Trainings CLPPP CDC, State funds	1-2 hours as often as requested	
Parents (program targets are residents, tenants, and parents)	Teaches how to assess homes for lead hazards, and perform dust wipe, clearance in non-abatement renovations/rehab	Lead Sampling Training CT PULSE EPA, CEHRC	8 hrs	

Target Audience (who attends) Languages available	***Training Objectives***	***Program Name*** / ***Who conducts*** / ***Who funds***	***Length of training & How often given***	***Limits/Barriers***
Children (Grades K-3) [1] *English and Spanish books available*[2]	Lead awareness for young children, with additional info for teachers, parents/guardians Lead-safe practices for children Curriculum/activity book & teacher guide for use in classroom	Adventures of the Lead Busters Club. UCONN CES conducts training for classroom teachers UCONN CES funds teacher trainings and provides books	Several hours over the course of a week or more Interactive version available on the Web	Requires liaison with school districts to implement in the schools.
Tenants/residents property owners	General overview of all aspects of Lead Poisoning, Awareness, and Prevention	Lead Awareness Training CT PULSE Unfunded	1 hour	
Paint/home improvement store employees [3] *Brochures in English & Spanish*	Lead awareness: Importance of talking to customers about lead safety How to do lead safe home maintenance	Keep It Clean DPH/ LEMU/ NELCC/ DPH EPA/ NELCC/DPH	1 hour, as stores allow –	Uncertainties about how accurately and frequently store employees transmit information; limited time for training store employees; turnover of store employees; limited time employees have to spend with customers.

[1] May also reach teachers, and parents as secondary.
[2] Manchester Lead Action has a partner elementary school that has participated for 3 years in 2nd grade classes. Kathleen Lovell has been able to attract interest of the Girl Scouts to use the program in their local day camp and the Cub scouts who used the program in a unit on the environment.
[3] To pass information (especially brochures) to do-it-yourselfers and contractors

Target Audience (who attends) Languages available	***Training Objectives***	***Program Name***	***Length of training & How often given***	***Limits/Barriers***
Contractors Painters Maintenance staff (property owners) *English and Spanish training available*	Lead awareness Lead-safe work practices for painting, remodeling, and maintenance	Lead-Safe Work Practices Training Statewide Approved Trainers (including MasiMax) UConn CES provides train-the-trainer Tuition or grant funding[5]	8 hr[4]	Requires full day to complete
Childcare providers[6] [7] *English and Spanish training available*	Lead awareness State regulations concerning childcare facilities • Lead-safe practices for childcare providers • Lead-safety learning activities for young children	What You Should Know about Lead Poisoning: A Resource Manual for Childcare Providers	2-4 hours CEU version w/CT Charts a course is 90 minutes	Currently manual but no general training program available. With CT Charts a Course requires dedicated individual to call to schedule trainings. Best if offered as part of staff development.
Local Health Depts., lead inspectors	* Initial Lead Inspector/ Risk Assessor training for local code enforcement officials and Lead Inspector/ Risk Assessors.	Initial Risk Assessor/Risk Assessor Training, Lead Inspector/Risk Assessor Refresher DPH LEMU[8]	Initial – 2-3 times/ year, 3-5 days/ course; Refresher - 8 times/yr 8 hours course at each offering	Local health directors seldom attend, some inspectors not up to date on trainings. Lead consultant contractors utilized; depends on availability of funding Lead hazard evaluation training needed.

[4] Originally offered quarterly in Manchester but demand has increased number of training sessions. Since 9/02 295 people trained.
[5] MasiMax training is paid for under joint agreement between NCPA and state attorneys general
[6] This is for all Child Care Providers – both in home and center based and in a secondary way may be reaching children & Parents/guardians/other primary caregivers
[7] Manchester Lead Action has materials in prenatal packets at the hospital classes and has done training of early Head Start staff who make home visits very soon after discharge
[8] Ongoing sustainable program; contract with certified trainer to perform 3 day and 5 day initial courses.

Target Audience (who attends) Languages available	***Training Objectives***	***Program Name***	***Length of training & How often given***	***Limits/Barriers***
Individuals at private companies performing lead consulting activities or lead abatement	Certification of individuals and licensure of companies performing lead abatement/ consultant activities	Lead Abatement Activities Training Private Lead Consultant trainers Fee for Service	3, 4, or 5 day course, depending on demand. Variable frequency	Licensure/ certification process through DPH with fees.
Rebuilding Together; Habitat for Humanity; & other rehab volunteers[9] *English and Spanish videos available*	Lead awareness How to perform lead-safe work practices	Volunteer Video Training	20-minute video; organization may include additional training	Designed for short-term volunteers. Should be adapted if used for other audiences–
Physicians	Training efforts, largely discontinued at this point, focused on practices with low immunization rates and gave individual training and technical assistance (office detailing)			

[9] Has been adapted for use by homeowners, do-it-yourselfers

Target Audience (who attends) Languages available	***Training Objectives***	***Program Name***	***Length of training & How often given***	***Limits/Barriers***
Contractors Painters Maintenance staff (property owners) *English and Spanish training available*	Lead awareness Lead-safe work practices for painting, remodeling, and maintenance	Lead-Safe Work Practices Training	8 hr[10]	Requires full day to complete
		Statewide Approved Trainers (including MasiMax) UConn CES provides train-the-trainer		
		Tuition or grant funding[11]		
Childcare providers (both in-home and center based)[12] [13] *English and Spanish training available*	Lead awareness State regulations concerning childcare facilities • Lead-safe practices for childcare providers • Lead-safety learning activities for young children	What You Should Know about Lead Poisoning: A Resource Manual for Childcare Providers	2-4 hours CEU version w/CT Charts a course is 90 minutes	Currently manual but no general training program available. With CT Charts a Course requires dedicated individual to call to schedule trainings. Best if offered as part of staff development.

[10] Originally offered quarterly in Manchester but demand has increased number of training sessions. Since 9/02 295 people trained.
[11] MasiMax training is paid for under joint agreement between NCPA and state attorneys general
[12] In a secondary way may be reaching children & Parents/guardians/other primary caregivers
[13] Manchester Lead Action has materials in prenatal packets at the hospital classes and has done training of early Head Start staff who make home visits very soon after discharge

Target Audience (who attends) Languages available	***Training Objectives***	***Program Name***	***Length of training & How often given***	***Limits/Barriers***
Local Health Depts., lead inspectors, private cos.[14]	Refresher training and new employee training for lead inspectors and risk assessors covers local code enforcement requirements.	Lead Inspector/ Risk Assessor Training DPH LEMU[15] DPH LEMU	8 times/yr 8 hours course at each offering	Local health directors do not participate, some inspectors not up to date on trainings. Need lead hazard evaluation training for housing inspectors.
Rebuilding Together; Habitat for Humanity; & other rehab volunteers[16] *English and Spanish videos available*	Lead awareness How to perform lead-safe work practices	Volunteer Video Training	20-minute video; organization may include additional training	Designed for short-term volunteers. Should be adapted if used for other audiences

[14] Private companies, individuals receive training from certified trainers.
[15] Ongoing sustainable program; contract with certified trainer to perform 3 day and 5 day initial courses
[16] Has been adapted for use by homeowners, do-it-yourselfers

Target Audience (who attends) Languages available	***Public Information Objectives/Description***	***Program Name***	***Length of campaign & How often given***	***Limits/Barriers***
General public (Hartford only)	A multifaceted public health campaign including use of municipal sanitation trucks, milk cartons, newspaper advertisements, postage stamp cancellation, billboards, kiosks, and street signs. Evaluation of campaign efforts found that Hartford residents recalled the effort, 45% reported taking steps to prevent lead poisoning due to one or more of campaign components.	Getting the Lead Out City of Hartford HUD	Much of the campaign is structural and hence ongoing.	Depth of understanding was limited (awareness of how medical personnel and procedures can detect and prevent lead poisoning was low) though general awareness and initiative to prevent was high.
General public (Manchester only)	Manchester Lead Action Project (LAP) has undertaken public awareness in a number of ways – each of which utilizes a standard logo and colors to highlight the issue: • Quarterly newsletter distributed through a free local newspaper (The Reminder) very low cost way to get message out includes information about Lead Safe Work Practices trainings, seasonal educational messages for parents, and other program updates. • 5000 Annual calendar distributed through schools, child care centers, doctors officers and libraries. Gives 12 messages – from the mouths of children such as "make an appointment to get my blood lead level tested. • Lawn signs with logo and in LAP colors on every home rehabbed – "we're making Manchester lead safe one home at a time" with program phone number.	Keep the Lead Awareness Message Alive Manchester Lead Action Project HUD Title X Grant	Newsletter – quarterly Calendar – annually Lawn signs – ongoing	Could be expanded statewide using low cost distribution methods such as the internet.
Statewide IMMUNIZATION	Public Information efforts include information on immunization schedules given to parents of newborns upon hospital discharge	CT DPH Immunization Program		

Appendix E:

Best Practices – City of Hartford Public Information/Social Marketing Campaign

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