National Center for Healthy Housing

NEW YORK STATE'S CHILDHOOD LEAD POISONING PRIMARY PREVENTION PROGRAM:

Implementation Report for Year Four, October 1, 2010 – September 30, 2011

Prepared for the New York State Department of Health
Bureau of Community Environmental Health and Food Protection
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REVISED DRAFT

EXECUTIVE SUMMARY

Despite substantial progress, childhood lead poisoning remains a serious health threat, both in New York State (NYS) and around the nation. Since there is no medical treatment that permanently reverses the neurodevelopmental effects of lead exposure, primary prevention (taking action before a child is harmed) is critical to address the problem. Primary prevention marks an important augmentation of the traditional approach of responding to children who have already been poisoned.

Primary Prevention Program Year Four Goals

1. Identify housing at greatest risk for lead-based paint hazards;
2. Develop partnerships and community engagement to promote primary prevention;
3. Promote interventions to create lead-safe housing units;
4. Build Lead-Safe Work Practice (LSWP) workforce capacity; and
5. Identify community resources for lead-hazard control.

In 2007, NYS undertook a new primary prevention initiative, with the Governor proposing and the NYS Legislature agreeing to dedicate $3 million in new state funding for fiscal year 2007-2008. A new subdivision 3 was added to PHL § 1370-a, creating the NYS Childhood Lead Poisoning Primary Prevention Program (Primary Prevention Program) as a pilot program.

Specifically, the new statutory provision required NYS Department of Health (DOH) to "identify and designate a zip code in certain counties with significant concentrations of children identified with elevated blood lead levels for purposes of implementing a pilot program to work in cooperation with local health officials to develop a primary prevention plan for each such zip code identified to prevent exposure to lead-based paint." In granting DOH authority to designate zip codes as "areas of high risk," the amended statute permitted DOH as well as local health departments to adopt a proactive approach to reducing children's exposure before harm occurred. This allowed health departments to gain access to homes for the purposes of education and inspection, even if no child with an elevated blood lead level (EBLL) currently resided in the unit and even if the unit was not currently occupied by a child (but one day could be). Local health departments in the eight counties (Albany, Erie, Monroe, New York City[i], Oneida, Onondaga, Orange, and Westchester) with the highest number of incident cases of lead poisoning among children under age six annually received funding in 2007.

For 2008-09, the Governor proposed and the NYS Legislature committed to additional funds for the Primary Prevention Program that brought the total funded amount to approximately $5 million. This increased the funding allocated to the eight renewing grantees, and provided funds for four new grantees: Broome, Chautauqua, Dutchess, and Schenectady Counties.

[i] The five boroughs within New York City are considered a single county for the purposes of the Primary Prevention Program.

In 2009, based on the promising results of the Primary Prevention Program, Governor Paterson successfully sought to make the program permanent by amending PHL § 1370-a(3) (see L. 2009, C. 58, pt. A, § 4). In addition, funding was further increased to approximately $7.7 million for fiscal year 2009-10. Two new grantees (Niagara and Rensselaer counties) were added to the program. Increased funding to $10.1 million in 2010-11 resulted in the addition of a new grantee, Ulster County, bringing the total number of grantees to fifteen. Together they are implementing a housing-based primary prevention initiative that will reach tens of thousands of housing units.

The Primary Prevention Program has made a significant difference in the lives of children and their families and in the infrastructure for primary prevention of lead-based hazards. Since its inception on October 1, 2007, over 10,000 children have been directly affected by the Primary Prevention Program through visits to their homes, and nearly 6,000 have been referred for blood lead testing as a result of those visits.[ii] Over 21,000 housing units have been inspected, and nearly 10,000 of them were found to have potential and/or confirmed lead-based paint hazards (see Chapter 4).

Since its beginning in October 2007, Primary Prevention-funded inspections and follow-up to ensure remediation of identified hazards have produced 5,302 lead-safe housing units.

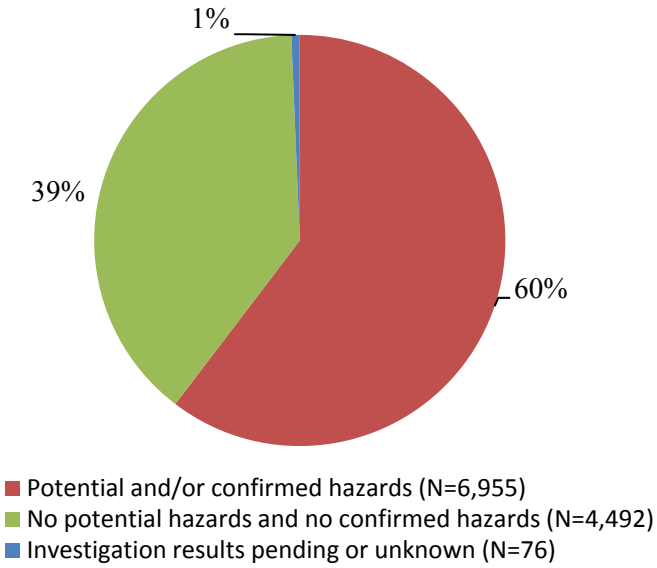
Work is underway in 3,697 more units that were found to have potential and/or confirmed hazards and have not yet been cleared of all hazards.

This report focuses on the cumulative impact of the Primary Prevention Program over the past four years as well as on its implementation in Year Four (October 1, 2010 through September 30, 2011). During Year Four, grantees made dramatic progress. Grantees:

1. Visited, conducted inspections, or followed up to ensure remediation in homes with 5,664 children age six and under – those most vulnerable to neurodevelopmental damage.
2. Referred 2,315 children for blood-lead testing from homes with identified hazards.
3. Determined that 6,955 units had potentially hazardous conditions or confirmed lead hazards (see Figure A).
4. Produced 2,448 units of lead-safe housing (see Figure B). Over 1,700 children age six or under lived in these homes.

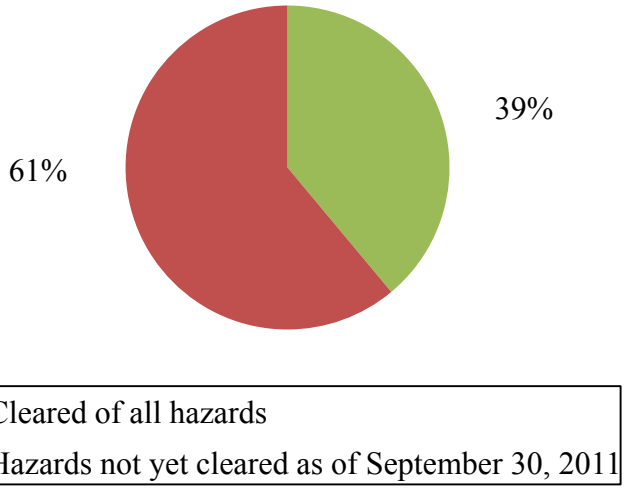
[ii] Note: Prior to May 2012, Onondaga County did not include data on inspections of housing units where children with BLLs between 10 and 14 µg/dL resided in their Primary Prevention Program data system. Given that the DOH regulations require comprehensive follow-up and environmental interventions for all children with BLLs ≥15 µg/dL, inspections of housing units of children with BLLs of 10-14 µg/dL are considered primary prevention inspections in New York State. The data included in the Executive Summary and Chapters 3 and 4 of this report therefore do not reflect the complete efforts of the Onondaga County Primary Prevention Program. However, the Onondaga County Program Summary in Appendix B has been updated to reflect the 175 inspections Onondaga County conducted in housing units of children with BLLs of 10-14 µg/dL since the program's inception.

Figure A. Hazard Status of All Units in Year Four (N=11,523)



Source: Unit-based data for units first inspected in Year Four or carried over from previous years.

Figure B. Clearance Status of Housing Units with One or More Confirmed or Potential Hazards, Year Four (N=6,287)



Source: Unit-based data for units first inspected in Year Four or carried over from previous years.

Note 1: Excludes 668 units with "unspecified hazards" only. Unspecified hazards are hazards identified prior to the changes to the Primary Prevention data collection system in April 2011 that are unknown to be exterior, interior, or both.

DOH encourages grantees to tailor their programs to local needs and conditions and experiment with different approaches for education, outreach, targeting high-risk populations, and service delivery.[iii] Grantees enhanced their partnerships with other local governmental agencies and community organizations in Year Four. Renewing grantees experimented with a variety of strategies to improve compliance with orders to eliminate lead hazards, coordinate with code enforcement, streamline policies and procedures, and leverage funding or activities with other community programs.

The National Center for Healthy Housing (NCHH) provides ongoing technical and evaluation assistance to the DOH and to Primary Prevention grantees. The observations and recommendations in this report are based on NCHH's review of grantee work plans, quantitative data, quarterly reports and other program documents, joint site visits with DOH staff, and participation in conference calls and meetings hosted by DOH. NCHH has the following recommendations for new and continuing grantees in Year Five:

1. Encourage code enforcement officials to adopt systematic rental property inspection programs and to use the Property Maintenance Code for citing deteriorated paint in pre-1978 housing.
2. Consider developing agreements with local Section 8 administrators to improve housing quality in Section 8 housing units and increase the ease with which families with young children are able to use Section 8 vouchers.
3. Consider funding partner agencies with Primary Prevention funds to assist in identification of high-risk units and inspection strategies.
4. Forge partnerships with public agencies to ensure that families receiving government assistance have access to lead-safe housing.
5. Use cost analysis to examine effective referral sources and partnerships, identify opportunities for process improvement, and quantify the benefits of the Primary Prevention Program to health, juvenile justice, education, and other areas.
6. Examine the monetary benefits of lead hazard control through primary prevention efforts in terms of child health, property values, and energy efficiency.
7. Identify and actively seek out opportunities to diversify financial resources. This includes exploring funding from local philanthropic organizations and exploring opportunities for generating or increasing revenue internally through permits, fines and other fee structures.
8. Identify and actively seek out opportunities to diversify and increase non-financial resources, including but not limited to: leveraging other programs and service systems, partnerships with colleges and universities; hosting fellows from national organizations such as the Centers for Disease Control and Prevention; and

[iii] These strategies are highlighted in the grantee summaries included in Appendix B of this report, as well as in the reports NCHH has already issued on Years One, Two, and Three of the Primary Prevention Program, which can be found at http://www.health.state.ny.us/environmental/lead/programs_plans/index.htm.

developing partnerships to shift LSWP and RRP training capacity to local community colleges and vocational schools.

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GLOSSARY AND ABBREVIATIONS

BLL	Blood-Lead Level, a measure of concentration of lead in blood.
BOCES	Board of Cooperative Educational Services. A state program that provides shared specialized educational programs and services to school districts in order to reach diverse populations and improve educational achievement.
CDBG	Community Development Block Grant, a source of federal funding for community and economic development and housing rehabilitation for low- and moderate-income families.
CDC	U.S. Centers for Disease Control and Prevention.
Clearance	Procedures to verify that no lead-based paint chips or dust particles remain after repairs have been completed. A visual clearance involves assessment of the work areas to determine that no paint chips remain. A dust lead clearance test requires analysis of dust samples collected according to federal protocol and analyzed by an EPA-accredited laboratory. Results of the analysis must comply with EPA/HUD hazard standards before the location is considered cleared.
DOH	NYS Department of Health.
DSS	NYS Department of Social Services.
EBL or EBLL	Elevated Blood-Lead Level. In this report, a BLL over the CDC level of concern of greater than or equal to 10 µg/dL is considered an EBLL.
EPA	U.S. Environmental Protection Agency.
HNP	NYS Healthy Neighborhoods Program.
HPD	NYC Department of Housing Preservation and Development.
HUD	U.S. Department of Housing and Urban Development.
LBP	Lead-Based Paint.
LHD	Local Health Department.
LHC	Lead-Based Paint Hazard Control.
LPPP	NYS Lead Primary Prevention Program

LSWP	Lead-Safe Work Practices.
MOU	Memorandum(a) of Understanding.
Notice and Demand	The primary method by which local health departments notify property owners when lead-based paint hazards are identified during an inspection.
NCHH	National Center for Healthy Housing.
NYC	New York City.
NYS	New York State.
PHL	NYS Public Health Law.
Primary Prevention Program	NYS Lead Poisoning Primary Prevention Program
PSA	Public Service Announcements.
RRP	Renovation, Repair, and Painting Rule (40 CFR 745.80, Subpart E).
Section 8	Federal tenant-based rental assistance, or vouchers, given to low-income renters to subsidize rentals in market-rate apartments.
µg/dL	Micrograms per Deciliter.
XRF	X-Ray Fluorescence, a method for assessing the concentration of lead on painted surfaces in a field setting.

1. INTRODUCTION

A National Perspective on Primary Prevention

Although lead poisoning is a preventable disease, it continues to be a major children's environmental health problem in the United States.[1] According to the U.S. Centers for Disease Control (CDC), the recent recommendation by the CDC's Advisory Committee on Childhood Lead Poisoning Prevention (ACCLPP) to change the level at which children are considered to have too much lead in their blood will increase the number of children in the United States requiring medical care and follow-up environmental services to an estimated 450,000 children with blood lead levels above 5 ug/dL.[2] Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. Lead is particularly dangerous to children under the age of six due to the rapid growth and development of their nervous systems and their greater lead uptake from what they consume.

Communities engaging in lead poisoning prevention can reap large monetary benefits. In the U.S., IQ loss related to lead exposure is estimated to result in a loss of $50.9 billion in lost economic productivity resulting from reduced cognitive potential from preventable childhood lead exposure and 5.9 million in medical care costs. This does not include other social benefits, such as avoided special education, crime, stress on parents and children, behavior problems, and many other preventable adverse health effects.[3]

The most common source of childhood lead poisoning is lead-based paint (LBP) in older homes, and the primary exposure pathway is the ingestion of lead-contaminated settled interior dust and contaminated soil.[4] [5] Although New York City banned the use of LBP in homes in 1960 and the federal government banned LBP use in residential paint and other consumer products in 1978,[6] there are still an estimated 38 million pre-1978 dwellings nationwide that contain LBP,[7] and 24 million have deteriorated (chipping, peeling, flaking) LBP and dust and/or soil hazards.[8] [9] More than four million of these dwellings are homes to one or more young children.[10]

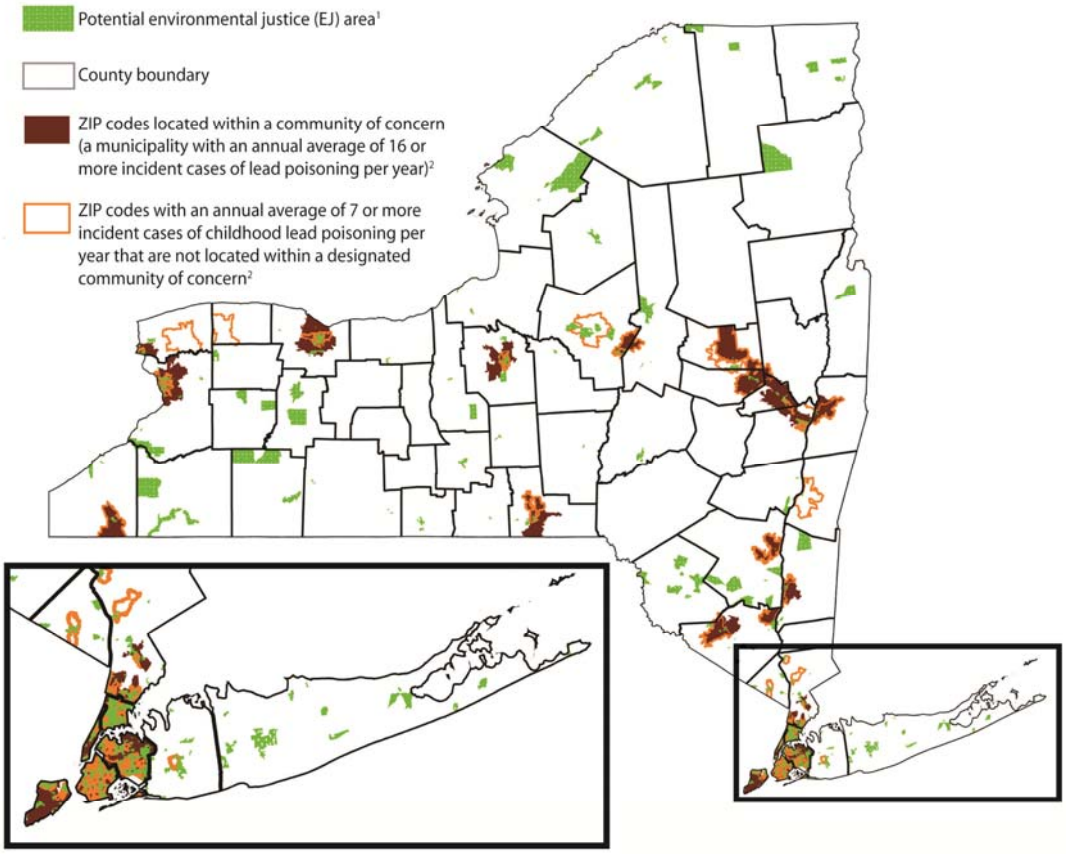
Years of federal, state, and local activity have resulted in a decline in the number of children with elevated blood lead levels. From 1994 to 2006, the number dropped by 86 percent, from 890,000 to 120,000 (from 4.4 percent of all children to 0.6 percent).[11] Recognition that lead exposure affects IQ even when BLL levels are lower than10 µg/dL has added new urgency to the call for primary prevention.

The LBP exposure burden still occurs disproportionately in deteriorated or unsafely-renovated pre-1978 homes, with communities of color and low-income families disproportionately impacted. New York State is no exception. Figure 1.1 shows the strong relationship between potential environmental justice communities as designated by the New York State Department of Environmental Conservation (NYSDEC).

Potential Environmental Justice Areas are 2000 U.S. Census block groups of 250 to 500 households each that, in the 2000 Census, had populations that met or exceeded at least one of the following statistical thresholds[iv]:

1. At least 51.1 percent of the population in an urban area reported themselves to be members of minority groups; or
2. At least 33.8 percent of the population in a rural area reported themselves to be members of minority groups; or
3. At least 23.59 percent of the population in an urban or rural area had household incomes below the federal poverty level.

Figure 1.1. Potential Environmental Justice Areas and Childhood Lead Poisoning Communities of Concern in New York State



[1] Communities that qualify as a potential environmental justice area under NYSDEC critiera. Source: NYSDEC

[2] Based on the average # of incident cases of childhood lead poisoning per year among children under six years of age, by municipality and ZIP code, NYS, 2005-2007. Source: NYSDOH

Source: New York State Task Force on the Prevention of Childhood Lead Poisoning, Final Report 2010

[iv] New York State Department of Environmental Conservation. *County Maps Showing Potential Environmental Justice Areas.* http://www.dec.ny.gov/public/899.html.

In 2004, the ACCLPP called for a more aggressive housing-based primary prevention approach: "To ensure successful elimination of EBLLs in children, programs must not rely solely on screening and secondary prevention but also focus on preventing lead exposure through the implementation of housing-based primary prevention."[12] In 2009, the U.S. Surgeon General's *Call to Action to Healthy Homes* explicitly recommended "test[ing] houses occupied by children less than six years of age for lead and control or eliminate lead hazards…." as a necessary step to achieve national objectives.[13] The U.S. Environmental Protection Agency (EPA) implemented its Renovation, Repair, and Painting Rule in April 2010. It requires contractors who disturb LBP in pre-1978 homes and child-occupied facilities to be certified as renovators and to follow specified work practices strictly to prevent lead contamination.[14]

In January 2012, the ACCLPP voted to recommend a significant change in the level at which children are considered to have too much lead in their blood. The change will increase the number of children requiring medical care and follow-up environmental services from less than 100,000 to 450,000.[15]

Currently, CDC recommends action at a blood lead level of 10 micrograms per deciliter (µg/dL). The new reference value, which is based on population blood lead levels, would focus action on those children with the highest blood lead levels (i.e. those above the 97.5th percentile). The revised value would be 5 µg/dL.

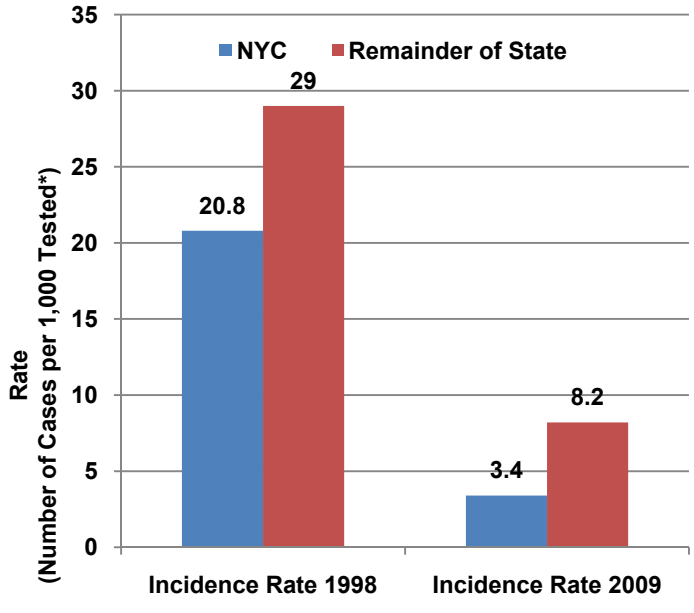
The ACCLPP statement also underscores the need to focus on prevention, since the damage caused by lead poisoning is irreversible. Older housing with lead-based paint, and the dust and soil it generates, are the key sources of exposure for children.

Lead Poisoning in New York State

New York consistently ranks high on key risk factors associated with lead poisoning including many young children living in poverty, a large immigrant population, and an older, deteriorated housing stock.[16] Additional aggressive action to reduce children's exposure to lead remains a state public health priority.

Although the overall incidence (newly diagnosed cases) of lead poisoning among NYS children under age six steadily declined from 1998 to 2008,[17] thousands of children are still at risk because EBLL rates vary greatly across the state (see Figure 1.2)[18] [19] For the

Fig. 1.2. Incidence Rate* BLL ≥ 10 ug/dL, 1998 and 2009



three-year period between 2006 and 2008, 80 percent of children under age six years, with newly identified BLLs 10 µg/dL and above, resided in the thirteen highest incidence counties (ordered from high to low): Kings, Queens, Erie, Bronx, Monroe, New York, Onondaga, Westchester, Oneida, Orange, Nassau, Albany, and Richmond.

Primary Prevention in New York State

Primary prevention has been a critical component of New York State's efforts to address childhood lead poisoning for many years.[21] Local health departments (LHD) receiving state funding for Childhood Lead Poisoning Prevention Programs incorporate primary prevention into their programs, including the following activities:[v]

1. Identify and partner with other local agencies, organizations, and stakeholders to develop a shared local approach for primary prevention.
2. Identify local communities, neighborhoods, and buildings with the highest need for primary prevention strategies.
3. Develop strategies that are consistent with local resources to provide primary prevention services to the areas of highest need.

Several localities have adopted primary prevention laws. For example, since 1982 New York City has had a local ordinance requiring inspection and remediation of LBP hazards in dwellings that house young children.[vi] The City of Rochester's lead ordinance applies to all rental units, regardless of child occupancy.[vii]

Other communities rely on a combination of state and local authorities to inspect and enforce remediation of homes or apartments. Funding for this remediation commonly comes from the property owner, federal lead hazard control grants, or other state and federal housing rehabilitation funds. A detailed description of the authorities and procedures has been previously provided in reports for Years One through Three[viii], including blood-lead screening requirements that apply to Childhood Lead Poisoning Prevention Programs activities and local ordinances.

The 2007 Pilot Lead Primary Prevention Program

In 2007, Public Health Law Section 1370(a) (3) was amended to create a pilot Childhood Lead Poisoning Primary Prevention Program:

> *The department shall identify and designate a zip code in certain counties with significant concentrations of children identified with elevated blood-lead levels for purposes of implementing a pilot program to work in cooperation*

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[v] Minimum required activities to be consistent with contractual obligations for Primary Prevention Program work plans.

[vi] New York City's "Local Law #1 of 2004 – The New York City Childhood Lead Poisoning Prevention Act" and "NYC Health Code."

[vii] City of Rochester's "Lead-Based Paint Poisoning Prevention Act."

[viii] See Appendix A of prior year reports, available at: http://www.health.ny.gov/environmental/lead/programs_plans/

with local health officials to develop a primary prevention plan for each such zip code identified to prevent exposure to lead-based paint.

In granting the New York State Commissioner of Health authority to designate zip codes as "areas of high risk," the DOH as well as the local health departments adopted a proactive approach to reducing children's exposure before harm occurred. Using the legislation's authority, health departments could gain access to homes for the purposes of education and inspection, even in the absence of a child or a child with an EBLL.

The legislation required pilot-funded recipients to:

1. Use the "area of high risk" designation within "communities of concern" and the Notice and Demand or equivalent process to inform owners and require repairs as appropriate to complete remediation work in targeted areas.
2. Identify geographic areas within high-risk zip codes that had a high prevalence of actual or presumed LBP hazards, based on lead surveillance data, prior case histories, demographic information, age and condition of housing, and other factors.
3. Refer children under age six who had not received required lead screenings to their primary care providers and/or LHD lead prevention program for follow-up.
4. Develop a housing inspection program that included the following:
    a. Prioritization of dwellings within target areas for inspections;
    b. Inspection of high-risk dwellings for potential lead hazards;
    c. Correction of identified lead hazards using effective lead-safe work practices (LSWP);
    d. Appropriate oversight of remediation work; and
    e. Clearance by certified inspectors.
5. Develop formal partnerships, including formal agreements or Memoranda of Understanding (MOU), with other county and municipal agencies and programs. Prospective partners included code enforcement offices, local Departments of Social Services, local housing agencies, U.S. Department of Housing and Urban Development (HUD) Lead Hazard Control grantees, weatherization programs, and community groups with interest in lead poisoning prevention.
6. Develop new or use existing enforcement policies and activities to assure safe and effective remediation of identified lead hazards.
7. Coordinate available financial and technical resources to assist property owners with remediation.
8. Develop and implement lead-safe work practices (LSWP) training for property owners, contractors, and residents and promote development and use of a certified workforce for lead remediation activities.

9. Collect and report data to DOH to evaluate the progress and effectiveness of the Initiative.

The Eight Original FY 2008 Grantees (October 1, 2007-September 30, 2008):

Albany, Erie, Monroe, Oneida, Onondaga, Orange, and Westchester Counties and New York City.

Pilot grantees targeted one or more of the state-designated zip codes and worked in other high-risk areas within the targeted county as resources permitted. DOH also encouraged them to tailor their work plans to the needs, resources, and capacities in their jurisdictions. Grantees could implement activities as part of an existing program, including their Childhood Lead Poisoning Prevention Program or their NYS Healthy Neighborhoods Program (HNP), or they could develop new infrastructure. An NCHH study provides a detailed evaluation of the strategies, obstacles, costs, and accomplishments during Year One.[1]

2008-2011 Expansion of the Program

Year Two (FY 2009) Additional Grantees:

Broome, Chautauqua, Dutchess, and Schenectady Counties.

In 2008, the Governor proposed and the NYS Legislature committed to additional funds for the Primary Prevention Program, bringing the total funded amount for Year Two to approximately $5 million. This increased the funding allocated to the eight renewing grantees and provided funds for four new ones: Broome, Chautauqua, Dutchess, and Schenectady counties. DOH asked renewing grantees to refine their outreach and inspection efforts, engage more community partners, and look for ways to build toward sustainability. DOH also expanded its technical support to grantees through its website, teleconferences, and a two-day conference during which grantees explored ways to increase partnerships with community-based organizations, housing agencies, and code enforcement.

The 2009 amendments made a direct and positive impact on grantees' work plan activities and goals. The new law gave grantees the flexibility to define their "areas of concern" beyond the original high-risk zip code(s) and continued the requirement for grantees to contract with their housing code enforcement agencies. It also encouraged coordination between weatherization and other programs that could fund required lead hazard control work and ensured a mechanism for referral for lead testing of pregnant women and children encountered during a Primary Prevention Program visit.

Year Three (FY 2010) Additional Grantees:

Niagara and Rensselaer Counties

In June 2009, the New York State Health Commissioner issued a letter to health care providers on the importance of monitoring BLLs below 10 µg/dL, released new educational materials to help families understand the meaning of these lower levels, and required that the following comment be added to all laboratory reports for BLL values: "Blood lead levels in the range of 5-9 µg/dL have been associated with adverse health effects in children aged 6 years and younger. The term 'normal' should no longer be used to describe BLLs less than 10 µg/dL."[20]

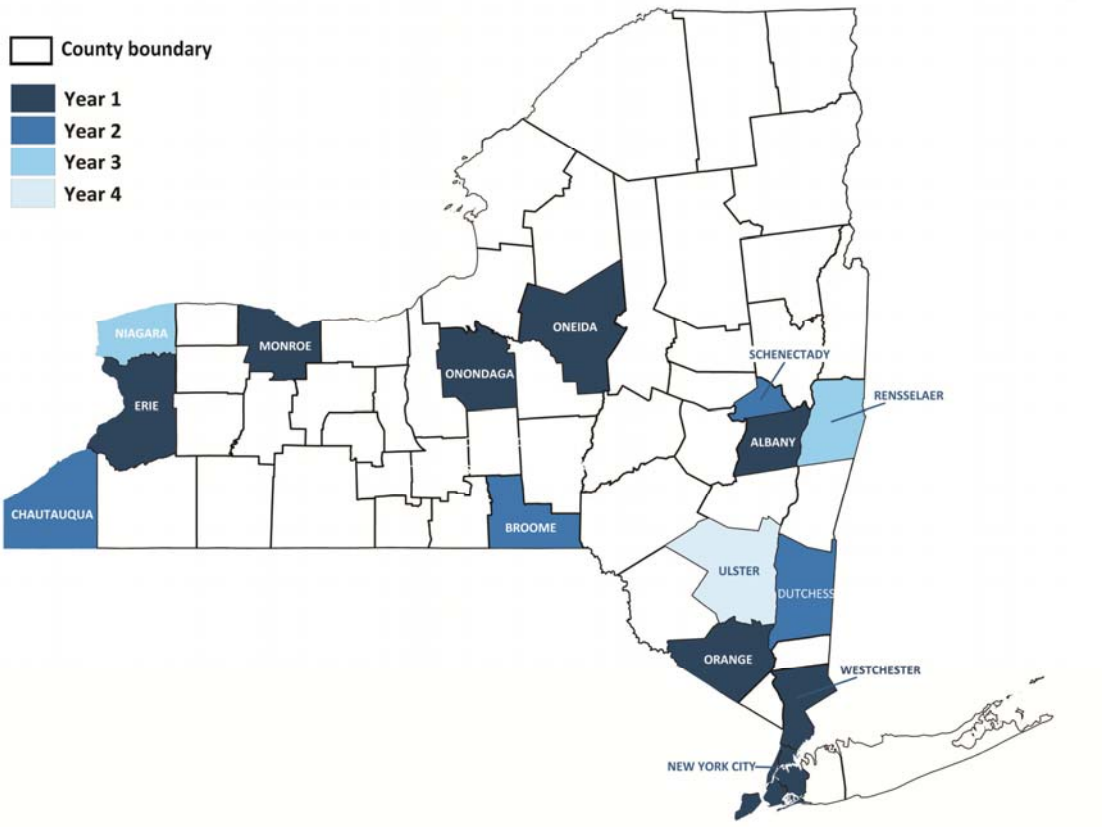
Year Four (FY 2011) Additional Grantees:

Ulster County

In June 2009, the Governor also announced DOH's revised regulations to require comprehensive follow-up and environmental interventions for all children with BLLs of 15 µg/dL or greater (reduced from 20 µg/dL or greater). This latter change affected Primary Prevention grantees by restricting their visits to those homes where children with EBLLs under 15 µg/dL resided.

In 2009, based on the promising results of the Pilot, Governor Paterson successfully sought to make the Primary Prevention Program permanent under an amendment to PHL 1370-a(3), and funding was further increased to $7.7 million. With the addition of two new grantees in 2009 (Niagara and Rensselaer Counties), 14 grantees implemented a housing-based primary prevention initiative. In 2010, the addition of Ulster County brought the total number of grantees to 15 (see Figure 1.3).

Figure 1.3. Primary Prevention Program Grantees by Year of Entrance, FY 2008 – FY 2011



Source: New York State Department of Health

Evaluation Design and Methodology

Under contract with DOH, the NCHH team:

1. Consults on how to implement the Primary Prevention Program;

2. Provides training and hands-on consultation to grantees and their partners in coordination with DOH; and
3. Develops and implements a comprehensive evaluation of the Primary Prevention Program for DOH.

The contract enables NCHH field investigators to work with each grantee to provide feedback on work plans, models for practice, and technical support on program design and implementation issues. Investigators also participated in joint site visits with DOH staff and in conference calls and meetings hosted by DOH. A *Technical Assistance and Networking Gathering* in April 2011 was particularly useful in informing sections of this report.

NCHH developed a standardized reporting system during Year One to gather information from grantees about their actions and progress toward achieving each of the Primary Prevention Program's five goals. The system consists of a quarterly report and a Microsoft ACCESS database. In April 2011, NCHH worked with DOH to implement significant changes to the quarterly report form and Microsoft ACCESS database. These changes are described in detail in Chapter 2. These changes to the data collection system should be considered when comparing this Year Four implementation report to the prior years' reports. Specific changes, such as the clarification that potential hazards are those identified through visual assessment alone and the removal of the requirement to confirm hazards prior to ordering remediation, result in a different method of reporting hazards that is reflected in the data included in this report.

Chapter 3 of this report highlights the cumulative impact of the program over the past four years (October 1, 2007-September 30, 2011), while Chapter 4 focuses on Primary Prevention Program implementation from October 1, 2010 through September 30, 2011 (Year Four). Chapter 4 uses a database of 11,523 housing units that were first inspected in Year Four or are carried over from previous years to ensure follow-up and remediation of hazards. Of these units, 8,534 were first inspected in Year Four and 2,989 were carried over from previous years. Chapter 5 includes highlighted models and approaches taken by grantees in the Year Four cost analysis reports. Of particular note in this year's report is the inclusion of summaries for each of the fifteen Primary Prevention grantees (See Appendix B). These program summaries provide a snapshot of the cumulative impact these programs have had on the local housing quality and the health of children in their target communities. These summaries are intended to be used by grantees to highlight their program's impacts to residents, public officials, department leadership, and community partners.

The intent of this report is to summarize the progress of grantees and of the Primary Prevention Program as a whole and to provide useful information to grantees as they implement their programs. Grantees have varying institutional infrastructures and local conditions that need to be considered when comparing across grantees. Most notably, grantees differ in their level of established relationships with code enforcement agencies as well as in the capacity, resources, and support they receive from within their health departments. They also differ in their amount of personnel and in their level of financial

resources for the Primary Prevention Program. Finally, grantees use varying strategies and approaches depending on the types of housing found within their target areas (e.g., proportion of single-family homes vs. multi-family homes) that need to be considered when interpreting the findings in this report.

2. EVALUATION METHODS AND CHANGES TO THE PRIMARY PREVENTION DATA COLLECTION SYSTEM

This chapter summarizes the evaluation methodology used for this report. Of particular importance, this chapter describes major changes made to the Primary Prevention data collection system during Year Four that impacts the types of data collected and presented in this report.

Evaluation Overview

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Changes to the Primary Prevention Data Collection System in Year Four

NCHH developed a standardized reporting system during Year One to gather information from grantees about their actions and progress toward achieving each of the Primary Prevention Program's five goals. The system consists of a quarterly report and a Microsoft ACCESS database.

In April 2011, NCHH worked with DOH to implement significant changes to the quarterly report form and Microsoft ACCESS database. The overall goals in making these changes were to:

1. Respond to the feedback regarding the quarterly reporting process and ACCESS database NCHH and DOH heard at the *Technical Assistance and Networking Gathering* in September 2010;
2. Improve the data collected in the ACCESS database to better reflect the varying strategies and program models that different grantees are using;
3. Reduce the amount of time it takes Primary Prevention grantees to complete the quarterly report.

The following summarizes the major changes to the data system:

1. Removal of 'skip patterns' in the ACCESS database to allow grantees to enter data in any field at any time;
2. Collection of additional information on which agency is conducting inspection activities to better reflect the diversity of partnerships Primary Prevention Programs have developed;
3. Collection of additional information on the location and type of hazards identified, including clarifying that "potential" hazards are those identified through visual inspection alone;
4. Allowing grantees to report orders to remediate and clearance of potential (identified through visual inspection only) hazards;
5. Collecting additional information on the status of each unit in the Primary Prevention database in order to allow grantees to track internally which cases are active and which are closed;
6. Separation of the Quarterly Report into Part A (unit data submitted by running unit reports in ACCESS) and Part B (additional information on training, outreach, and media activities).

NCHH and DOH undertook a comprehensive strategy to gain feedback from all grantees on the changes to the data collection system and to field test the new system with several grantees (See Appendix A for a sample of the feedback solicited from grantees). NCHH worked with each grantee to convert their ACCESS database from the old system to the new system in April 2011.

These changes have resulted in an improved data collection system that reduces the time it takes for grantees to complete quarterly reports and more accurately reflects the diversity of partnerships and intervention strategies programs undertake. Yet, the changes also impact one's ability to compare data from prior reports regarding the Primary Prevention Program. Some data elements previously reported are no longer collected, and the new system added a number of new data elements. NCHH worked with each program to convert old data elements into the new format. Of particular note is the distinction made in the April 2011 changes to the data collection system that potential hazards are those hazards identified through visual inspection only. If programs use dust sampling, XRF testing, or other laboratory testing methods to confirm the presence of lead hazards during the inspection process, they are instructed to note these hazards in the confirmed hazards section only. The change results in a change in the number of units reflected to have potential hazards as it eliminates duplication from units that previously were identified as having both potential and confirmed hazards. Additionally, grantees are now able to indicate whether potential hazards are interior or exterior.

The central part of the reporting system is a quarterly report form, which is organized into Parts A and B. Part B is organized by program goals and requests primarily narrative

descriptions.[ix] Part A consists of quantitative reports generated from the Microsoft ACCESS database described below.

To help grantees capture the unit-based housing data, grantees use the Microsoft ACCESS database developed by NCHH. Grantees can either use the database provided or import data into it from their own systems. The database contains reports that can be used at the end of each quarter to generate the summary data needed for the quarterly report. The grantees can also run these reports throughout the year in order to assess progress at any time.

The ACCESS database also contains a form on which grantees can record information about each marketing and outreach event used to raise awareness about their programs and the risks of lead exposure. As with the housing unit data, grantees can use a report from the database to generate the quantitative data requested in the quarterly report form about these activities.

[ix] Those five goals are (1) Identify housing at greatest risk of lead-based paint hazards, (2) Develop partnerships and community engagement to promote primary prevention, (3) Promote interventions to create lead-safe housing units, (4) Build LSWP workforce capacity, and (5) Identify community resources for lead-hazard control.

3. IMPACT OF THE PRIMARY PREVENTION PROGRAM IN NEW YORK STATE: 2007-2011

Since its inception in October 2007, the Primary Prevention Program has had a significant impact on housing quality and health in New York State. This chapter summarizes the cumulative impact of the fifteen Primary Prevention Programs over the past four years.[x] Appendix B contains individual impact summaries for each of the fifteen programs. These program summaries provide a snapshot of the cumulative impact these programs have had on the local housing quality and the health of children in their target communities. These summaries are intended to be used by grantees to highlight their program's impacts to residents, public officials, department leadership, and community partners.

This chapter addresses the following evaluation questions:

1. What have been the cumulative activities and results from Year One through Year Four?

2. What have been the cumulative benefits for children and housing quality from Year One through Year Four?

Visits and Inspections

Between October 1, 2007 and September 30, 2011, the Primary Prevention programs visited over 21,000 housing units and conducted inspections in 19,703 of these units (see Figure 3.1).

Grantees used a variety of inspection techniques, with interior and exterior visual assessments most frequently reported (see Figure 3.2). Units are counted as "inspected" if techniques such as visual assessments, XRF, dust sampling, soil sampling, or other sampling techniques are used. If a unit receives only educational materials, that unit is not counted as inspected. XRF testing was reported for almost half (45 percent) of the units inspected. Overall, dust wipes were rarely used in inspections[xi,xii] (used in about16 percent).

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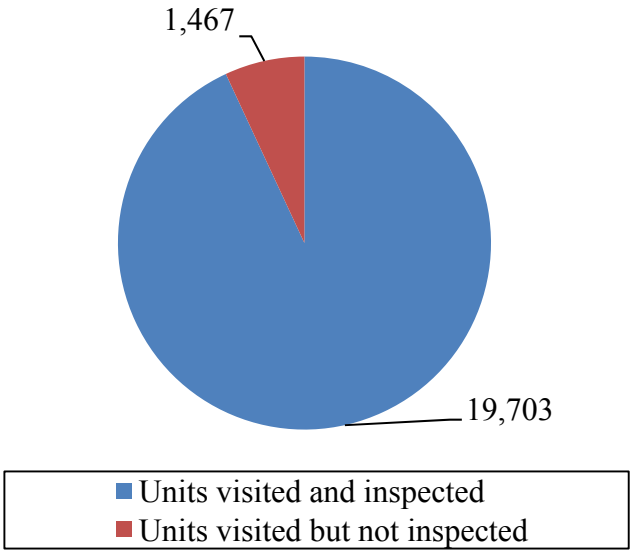
[x] Note: Prior to May 2012, Onondaga County did not include data on inspections of housing units where children with BLLs between 10 and 14 µg/dL resided in their Primary Prevention Program data system. Given that the DOH regulations require comprehensive follow-up and environmental interventions for all children with BLLs ≥15 µg/dL, inspections of housing units of children with BLLs of 10-14 µg/dL are considered primary prevention inspections in New York State. The data included in the Executive Summary and Chapters 3 and 4 of this report therefore do not reflect the complete efforts of the Onondaga County Primary Prevention Program. However, the Onondaga County Program Summary in Appendix B has been updated to reflect the 175 inspections Onondaga County conducted in housing units of children with BLLs of 10-14 µg/dL since the program's inception.

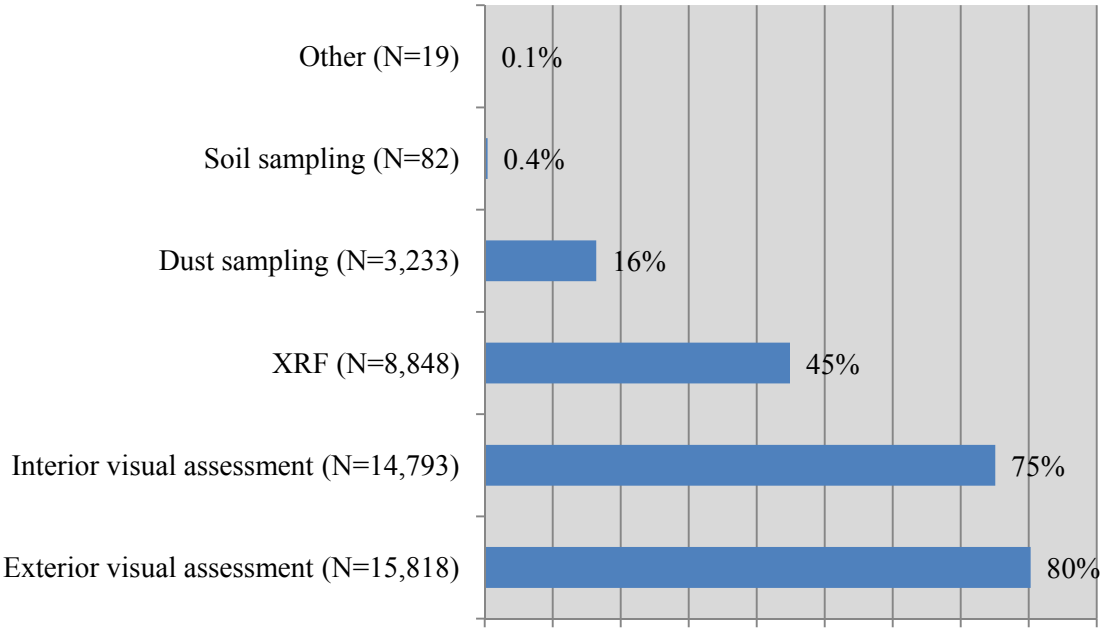
[xi] Note: This section discusses the use of dust wipe sampling during the inspection process. It does not include information on dust wipe sampling used during clearance.

Figure 3.1. Housing Units Visited by Primary Prevention Programs
October 1, 2007-September 30, 2011
(N=21,170)



Source: Unit-based data.

Figure 3.2. Percentage of Inspections in Which Each Inspection Activity Was Used
(N=19,703)

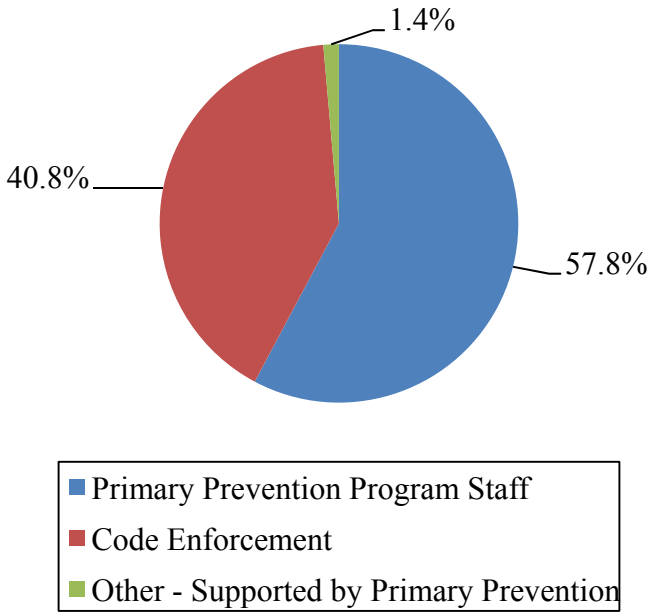


Source: Unit-based data. All inspected units.

[xii] These data reflect use of dust wipe sampling during the inspection process across all Primary Prevention Programs. Some programs, such as Oneida County, regularly use dust wipe sampling during their inspection process.

A major change to the data collection system in Year Four was the addition of a question to track the organization conducting the inspection activities. This change reflects the diversity of partnerships developed by Primary Prevention Programs over the past four years, and allows programs to better reflect their partnerships in their inspection data. Programs report if the inspection activities were conducted by: (1) Primary Prevention Program staff; (2) by staff of a code enforcement agency that is supported or deputized the Primary Prevention Program to conduct inspections and order remediation; or (3) by staff of another organization that is supported or deputized by the Primary Prevention Program to conduct inspections and order remediation. In order for a code enforcement or other agency to be considered an agency "supported by" the Primary Prevention Program, two criteria have to be met: (1) this is an agency that could issue an order for remediation if lead hazards or potential lead hazards are identified, or could forward inspection reports to the Primary Prevention Program to issue orders for remediation; and (2) the Primary Prevention Program gave the agency direct or in-kind funding for activities related to lead hazards such as inspections, staff training to initiate or improve lead inspections, case follow-up (such as occupant education, referrals for blood lead testing, compliance inspections, and clearance dust sampling), or LSWP training for owners that the agency had cited for hazards. Over the past four years, nearly 58 percent of the inspections were conduced by Primary Prevention staff, 40.8 percent of inspections were conducted by code enforcement agencies, and 1.4 percent were conducted by other agencies supported by the Primary Prevention Program.

Figure 3.3. Percent of Inspections Activities Conducted, by Organization Type
October 1, 2007 - September 30, 2011
(N=19,707)



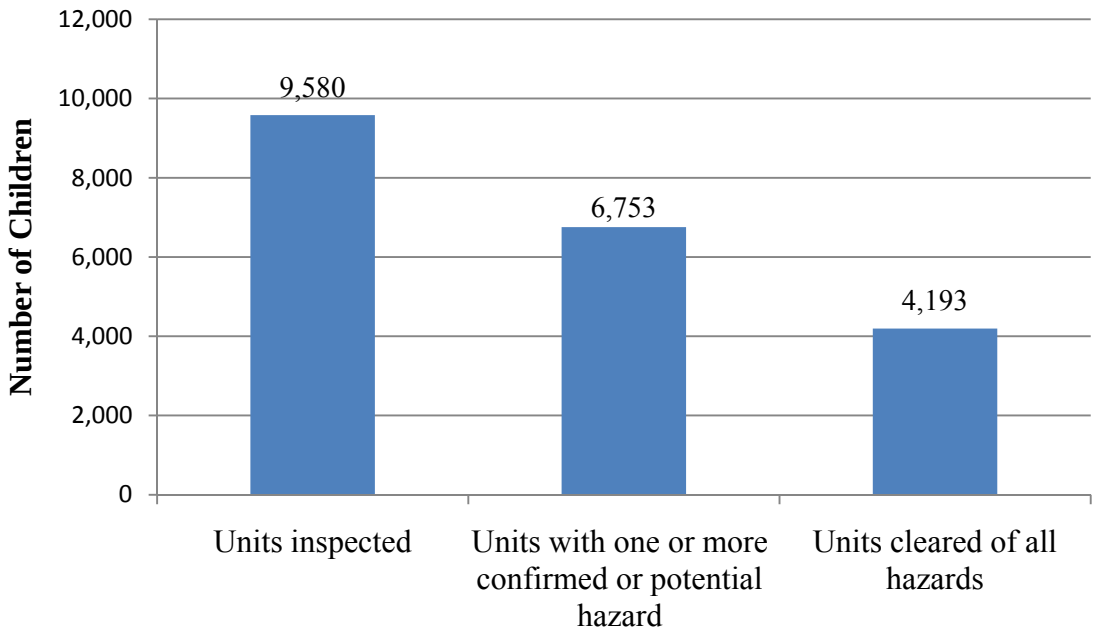
Source: Unit-based data.

Note 1: Since multiple inspection activities may occur at a housing unit, this figure includes the total number of inspection activities conducted by programs over the past four years.

Children Impacted by the Primary Prevention Program

Since its inception, the Primary Prevention Program has impacted over 10,000 children through visits, inspections, and referrals for blood lead testing. Between October 1, 2007 and September 30, 2011, Primary Prevention Programs visited 7,197 housing units in which at least one child lived, impacting a total of 10,248 children residing in those housing units. The program referred nearly 6,000 of these children for blood lead testing as a result of their visits.

Figure 3.4. Number of Children in Units Inspected, in Units with Hazards, and in Units with All Hazards Cleared
October 1, 2007 - September 30, 2011



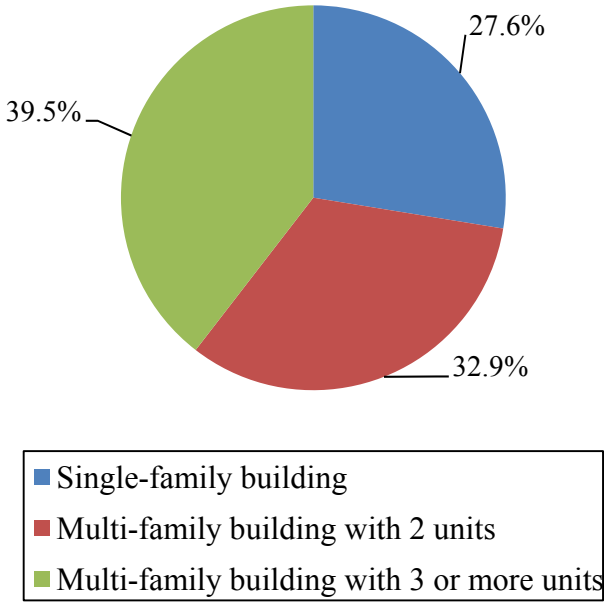
Source: Unit-based data

Housing Characteristics

Primary Prevention Programs target the highest-risk housing in their communities, focusing primarily on renter-occupied housing units built before 1940. Between October 1, 2007 and September 30, 2011, 84.3 percent of the units visited through the program

were built before 1940[xiii], and 82.5 percent of the units were renter-occupied. [xiv] Nearly 40 percent of the units visited were multi-family buildings with 3 or more units, 33 percent were multi-family buildings with 2 units, and 27.6 percent were single-family buildings (See Figure 3.5).

Figure 3.5. Percentage of Units Visited, by Building Type
October 1, 2007 - September 30, 2011
(N=20,959)



Source: Unit-based data
Note 1: Excludes 211 units where the building type was unknown or not reported.

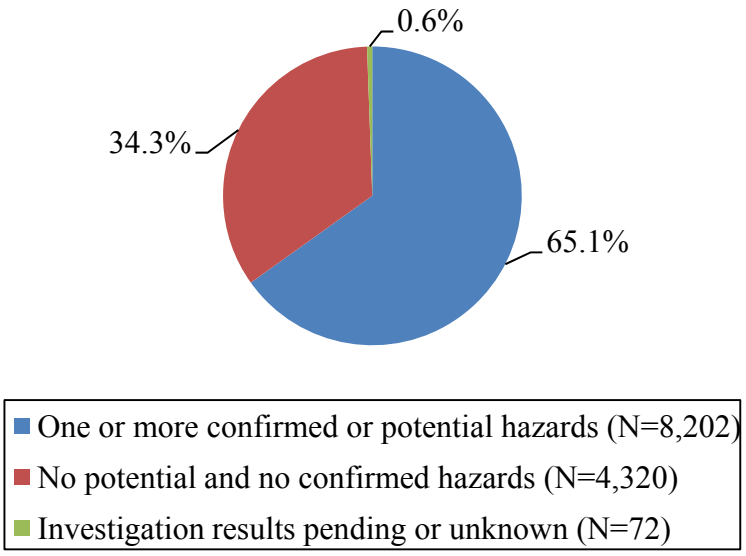
Inspections and Clearance Results

Nearly two-thirds of the units inspected by the Primary Prevention Program over the past four years were found to have one or more confirmed or potential hazards, excluding data from Monroe County[xv] (See Figure 3.6). Over the past four years, including data from

[xiii] *Excludes 948 visited units where the age of the property was unknown or not reported.*
[xiv] *Excludes 382 visited units where the occupancy status was unknown or not reported.*
[xv] In Monroe County, the Primary Prevention Program has integrated the majority of its inspection activities into the work of the City of Rochester Code Enforcement process. City code enforcement officers conduct a visual inspection for deteriorated paint on the interior and exterior of properties during their routine inspection efforts. By including primary prevention efforts into this systematic code enforcement process, many more units are reached by the program; however, the number of units found not to have hazards also increases due to the quantity of units inspected and the systematic process in place. Other Primary Prevention Programs, including Dutchess and Oneida Counties and New York City also work with code enforcement offices within their high-risk zip codes to target properties through their jurisdictions' code enforcement process. In these jurisdictions, the quantity of inspections is smaller, and therefore does not result in an overall skew of the Primary Prevention Program data as a whole, or these inspections are

Monroe County, nearly half of the units inspected by Primary Prevention Programs were found to have one or more confirmed or potential hazards (See Figure 3.7).

Figure 3.6. Hazard Status of All Units, Monroe Excluded
October 1, 2007 - September 30, 2011 (N=12,594)



Source: Unit-based data
Note 1: Excludes data from Monroe County. By including primary prevention efforts into the City of Rochester's systematic code enforcement process, many more units are reached by the program; however, the number of units found not to have hazards also increases due to the quantity of units inspected and the systematic process in place. Other Primary Prevention Programs, including Dutchess and Oneida Counties and New York City also work with code enforcement offices within their high-risk zip codes to target properties through their jurisdictions' code enforcement process. In these jurisdictions, the quantity of inspections is smaller, and therefore does not result in an overall skew of the Primary Prevention Program data as a whole, or these inspections are not captured in the Primary Prevention data system because the code enforcement agency does not meet the NYSDOH definition of an agency that is "supported or deputized" by the Primary Prevention Program.

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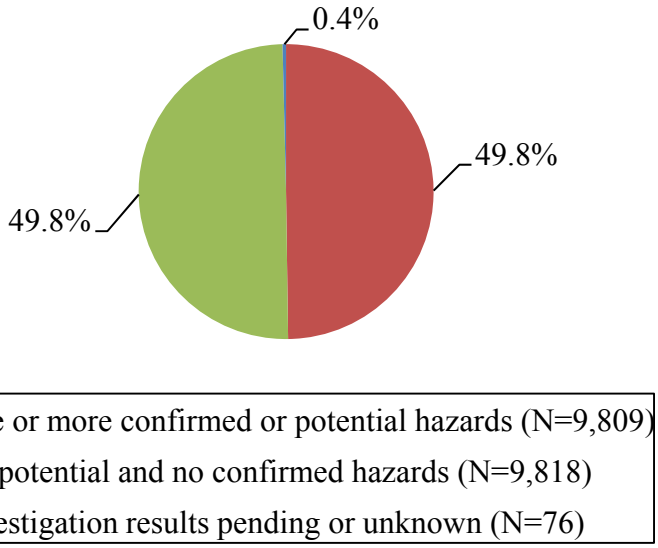
not captured in the Primary Prevention data system because the code enforcement agency does not meet the NYSDOH definition of an agency that is "supported or deputized" by the Primary Prevention Program.

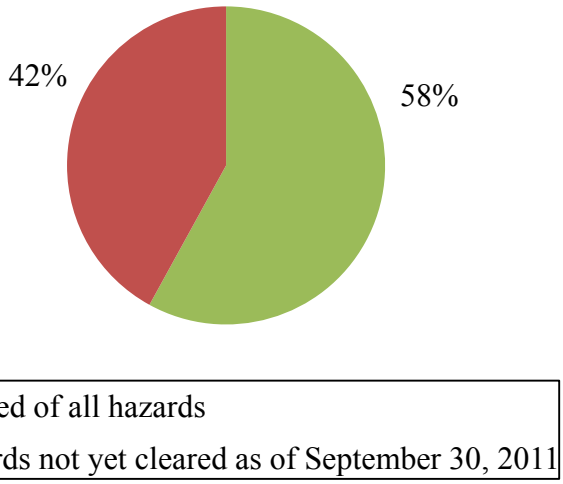
Figure 3.7. Hazard Status of All Units, Monroe Included
October 1, 2007 - September 30, 2011 (N=19,703)



Source: Unit-based data

Of units identified to have one or more confirmed or potential hazards since the program's inception, Primary Prevention Programs have cleared nearly 60 percent of those units. An additional 42 percent of units were not yet cleared as of September 30, 2011 (See Figure 3.8). Primary Prevention Programs used additional enforcement actions beyond the initial notice of hazards for nearly 3,000 units between October 1, 2007 and September 30, 2011 to help facilitate remediation and clearance of units with identified hazards.

Figure 3.8. Clearance Status of Housing Units with One or More Confirmed or Potential Hazards
October 1, 2007 - September 30, 2011 (N=9,141)



Source: Unit-based data

Note 1: Excludes 668 units with "unspecified hazards" only. Unspecified hazards are hazards identified prior to the changes to the Primary Prevention data collection system in April 2011 that are unknown to be exterior, interior, or both.

4. PRIMARY PREVENTION PROGRAM IMPACTS IN YEAR FOUR

This chapter describes the impacts of the Primary Prevention Program on housing units in NYS, LSWP capacity, and partnership developed to sustain lead poisoning prevention activities across NYS. The housing-unit data described in this chapter include data on units newly inspected in Year Four or carried over from previous years to ensure follow-up and remediation. This chapter also includes a description of the methodology specifically related to data on individual housing units; a more general description of the evaluation methodology is in Chapter 2.

This chapter addresses the following evaluation questions:

1. How many housing units were investigated, and what were the characteristics of those housing units?
2. How many units were determined to have hazards and cleared of hazards, and how was the identification and clearance of hazards related to other factors, such as housing characteristics?
3. What actions did grantees take to enforce remediation and to confirm clearance?
4. What were the direct and indirect benefits of the housing intervention for children?
5. In what ways have grantees collaborated with other agencies, programs, and coalitions in carrying out their primary prevention activities, and what approaches have they found to be most productive?
6. How many LSWP training sessions did the grantee sponsor, what type of training did they offer, and how many individuals were trained?
7. What barriers have grantees encountered and what solutions have they found?

Promoting Interventions to Create Lead-Safe Housing Units

Methodology

This chapter's description of grantees' interventions to create lead-safe housing units is based on two general sources: (1) narrative descriptions in grantee work plans and quarterly reports and (2) unit-based quantitative data that grantees entered into a Microsoft ACCESS database. At the end of the fourth quarter, grantees sent that database to NCHH for analysis along with their quarterly reports.

Units described in this chapter include units first visited in Year Four and units that were first visited in Year One, Year Two, or Year Three and carried over into Year Four for remediation or clearance. These units comprise the "Year Four database." Units that were inspected in Year One, Two, or Three and found to have no hazards or that were cleared of all hazards before Year Four began are excluded from analysis in this section of the report. Appendix C contains additional information regarding the methodology used in this report.

Defining Target Zip Codes and Conducting Inspections within Them

When NYS identified communities of concern and areas of high risk for the Primary Prevention Program, it used a two-step process. First, municipalities with an annual average of sixteen or more incident cases of childhood lead poisoning were identified.[xvi] Next, to refine target areas within municipalities, the analysis was repeated at the zip code level to identify zip codes with an annual average of seven or more incident cases. Both of these criteria were required to qualify as a target zip code. In their applications for funding and their annual work plans, grantees identified the communities of concern and target zip codes for their programs.

Table 4.1 shows the municipalities and target zip codes used by grantees during Year Four.

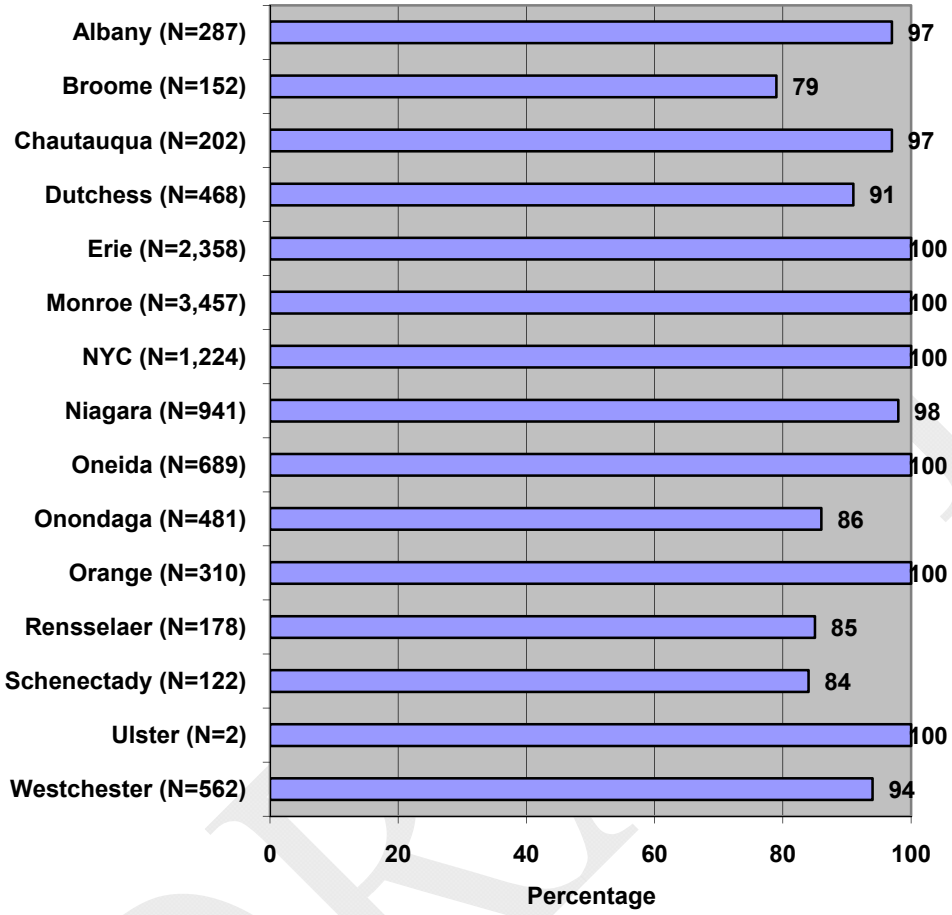
Table 4.1. Communities of Concern and Zip Codes in Year Four, by Grantee

Grantee	Municipality	Zip Codes
Renewing grantees		
Albany	Albany	12206, 12210, 12202, 12208, 12209
Broome	Binghamton	13905
Chautauqua	Jamestown	14701
Dutchess	Poughkeepsie	12601
Erie	Buffalo	14207, 14208, 14211, 14212, 14213, 14215, 14209, 14201
Monroe	Rochester	14605, 14609, 14611, 14621, 14604, 14606, 14607, 14608, 14610, 14612, 14613, 14614, 14615, 14619, 14620
Niagara	Niagara Falls	14301, 14303, 14305
New York City	Bronx, Kings, New York, Richmond, and Queens Counties	Program operates in high risk housing in all NYC zip codes.
Oneida	Utica	13501, 13502
Onondaga	Syracuse	13204, 13205, 13208, 13202, 13203, 13207, 13210, 13224
Orange	Multiple communities	12550, 10940
Rensselaer	Troy	12180, 12182
Schenectady	Schenectady	12303, 12304, 12307,12308
Westchester	Multiple communities	10550, 10606, 10701, 10705, 10801
New grantees		
Ulster	Kingston	12401

Grantees conducted most of their inspections within those target zip codes, ranging from 79 percent of inspections conducted within the target zip codes in Broome County to 100 percent of inspections within the target zip codes in six jurisdictions (see Figure 4.1).

[xvi] Incident cases are children under age six that have been newly identified with a blood lead level greater than or equal to 10 µg/dL.

Figure 4.1. Percentage of Inspected Units within Target Zip Codes Year Four



Source: Unit-based data. All units first inspected or continuing work in Year Four.

Note: Excludes 34 units with missing zip code data.

Defining Target Units within High-Risk Areas

Grantees refined their efforts by identifying specific target housing or populations within the areas of highest risk. Some grantees identified specific neighborhoods or census blocks/tracts within the designated high-risk areas by using data such as age of housing, history of EBLLs, socioeconomic status of residents, and percentage of rental properties. Some grantees focused on specific high-risk populations, such as children with BLLs between 5-9 and 10-14 µg/DL, pregnant women, or refugees.

The following are examples of targeting strategies used in Year Four:

1. Dutchess, Monroe, and Oneida Counties and New York City work with code enforcement offices within their high-risk zip codes to target properties through their city's code enforcement process.

2. Oneida County matches birth registry data to lists of high-risk streets, and uses these data to target inspections to housing units with newborns at highest risk for lead poisoning.
3. Nearly all grantees targeted units where children with BLLs between 5-9 and 10-14 µg/dL reside, as well as units adjacent to them.
4. Albany, Chautauqua, Niagara, Oneida, Onondaga, Orange, Rensselaer, Ulster, and Westchester target housing units with a history of EBLL cases or other units in the same building, and New York City also targets units with a history of multiple lead-based paint violations.
5. New York City targets homes of newborns living in high-risk neighborhoods and children visited by the Asthma Initiative. Albany, Broome, Chautauqua, Monroe, Niagara, Oneida, Rensselaer, Schenectady, also visit homes of at-risk newborns or pregnant women.
6. Albany, Monroe, Oneida, and Onondaga target the homes of resettled refugees.
7. Numerous counties, including Broome, Niagara, New York City, Onondaga, Orange, Rensselaer, Schenectady, Ulster, and Westchester work with partner agencies and programs such as the Healthy Neighborhoods Program, newborn home visiting programs, and the Department of Social Services (DSS) to target high-risk units and families.
8. New York City and Orange County respond to tenants' complaints of unsafe work practices in the apartments and common areas of residential buildings with children less than 18 years of age.

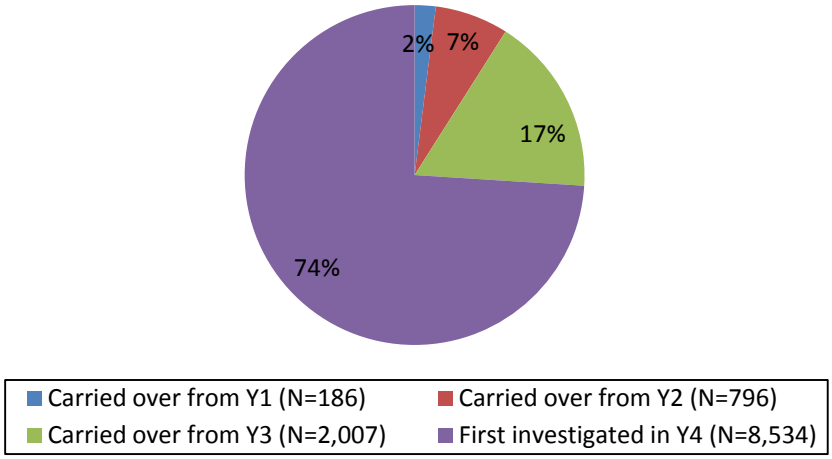
In addition to targeting neighborhoods and individual housing units, grantees also inspected units in response to requests from tenants and/or owners.

Inspections, Clearance, and Enforcement

Grantees first inspected or carried over from previous years a total of 11,523 housing units during this report period. Of these units, 8,534 were first visited in Year Four and 2,989 were carried over from previous years (see Figure 4.2). Of the 15 grantees, Monroe reported the most inspections: 3,460 (30 percent) of the total. Erie, Monroe, and New York City together accounted for 7,042 (61 percent) of the units inspected.[xvii]

[xvii] Programs vary in a number of ways that need to be considered when interpreting these findings, such as: amount of personnel; level of financial resources for the Primary Prevention Program; inspection strategies and approaches; and type of housing in their target area (e.g., proportion of single-family homes vs. multi-family homes).

Figure 4.2. Percentage of Units First Inspected or with Continuing Work in Year Four, by Year of Inspection (N=11,523)



Source: Unit-based data for all units first inspected in Year Four or carried over from previous years.

Inspection Protocols

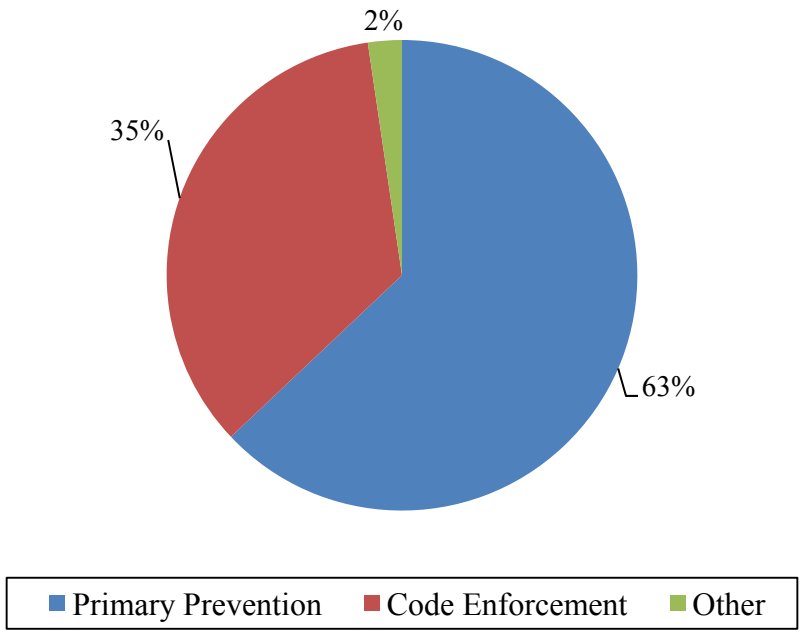
As the Primary Prevention Program has evolved over the past four years, Primary Prevention grantees have developed innovative partnership models for conducting inspections. While Primary Prevention staff continued to conduct the majority of inspections on units first inspected in Year Four or carried over from previous years, 35 percent of these units were inspected by code enforcement agencies and 2 percent were conducted by another agency supported by the Primary Prevention Program.

In Monroe, most (92 percent) of the Primary Prevention inspections are performed by City of Rochester code enforcement as part of their activities under the city's lead law. Some units identified by the Primary Prevention Program on the basis of a child's BLL are also referred to code enforcement for inspection and enforcement. Dutchess County has an agreement under which the units for inspection are selected by the City of Poughkeepsie building inspectors, who use housing complaints and building permit requests to identify residences.[xviii] Oneida County partners with the City of Utica Codes/Rental Inspection Departments, which inspects homes in the high risk designated areas for the Primary Prevention Program and cites them for any violations of New York State Property Maintenance Codes. Rensselaer has a contract with Cornell Cooperative Extension for the performance of initial inspections and inspection follow-up activities by

[xviii] Building inspectors perform visual assessments of deteriorated interior and exterior paint for units in target areas they had already planned to inspect. After final inspection, owners are requested to contact the grantee to perform dust wipe clearance. Noncompliant owners are referred to the grantee for a full LBP risk assessment, followed by issuance of a Notice and Demand.

EPA-certified staff. Ninety-eight percent of Rensselaer's inspection activities on units first inspected in or carried over into Year Four were performed by Cornell Cooperative Extension staff.

Figure 4.3. Percent of Inspections Activities Conducted by Organization Type, Year Four (N=11,523)

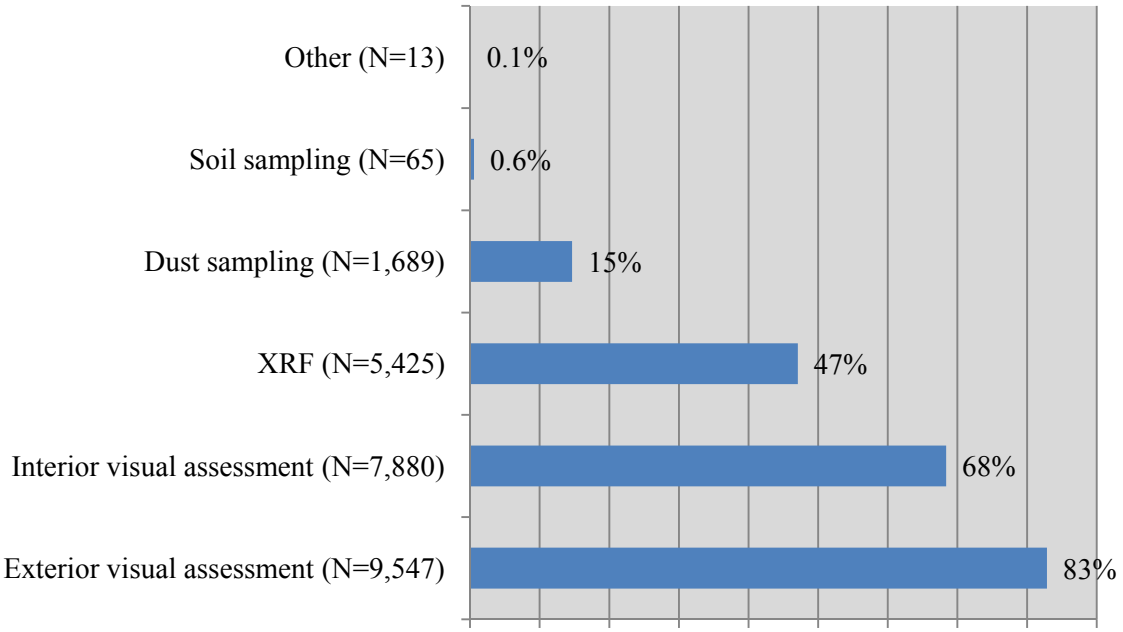


Grantees used a variety of inspection techniques, with interior and exterior visual assessments most frequently mentioned (see Figure 4.4). The only units counted as "inspected" were those in which an assessment questionnaire or techniques such as visual assessment, XRF, or dust, soil, or other sampling were used.

XRF testing was reported for almost half (47 percent) of the units inspected. Overall, dust wipes were rarely used in inspections[xix] (used in about 15 percent). Oneida used dust wipes in 49 percent of inspections and Broome used dust wipes in 36 percent of inspections. Albany, Monroe, and Onondaga have policies of contingent use of dust wipes; that is, dust wipes will be used if the interior visual inspection does not show hazards, in order to confirm that dust hazards are not present. Monroe reported using dust wipes in 27 percent of units, Albany in 36 percent of units, and Onondaga in 6.6 percent of units. A number of counties, including Chautauqua, Dutchess, Orange, and Ulster reported that they did not use dust wipes in any inspections first conducted in or carried over into Year Four.

[xix] Note: This section discusses the use of dust wipe sampling during the inspection process. It does not include information on dust wipe sampling used during clearance.

Figure 4.4. Percent of Inspections in Which Each Inspection Activity Was Used, Year Four (N=11,523)



Source: Unit-based data for all units first inspected in Year Four or carried over from previous years.

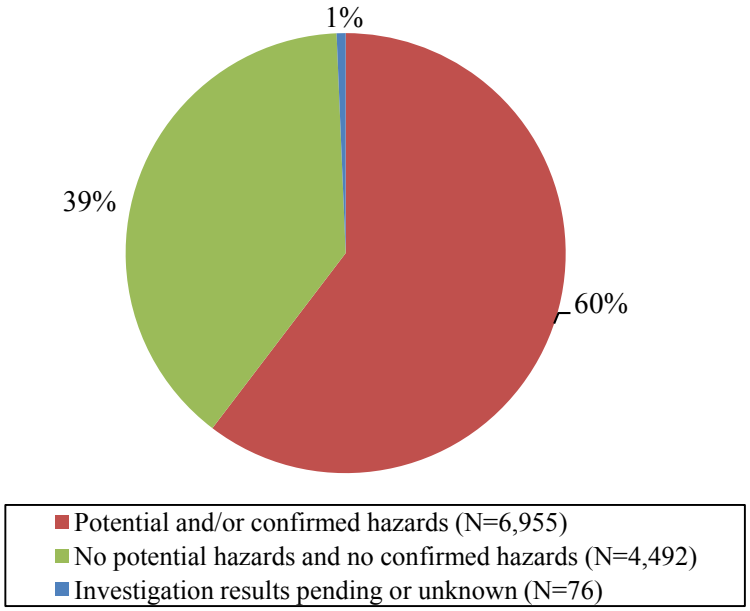
Note: Does not sum to 100 percent because multiple inspection activities could be used in any single inspection.

Inspections and Clearance

Of the 11,523 housing units that grantees first inspected in Year Four or followed from previous years to ensure remediation of hazards, 60 percent (6,955) had potential and/or confirmed hazards (see Figure 4.5). Excluding data from Monroe County[xx], of the 8,063 housing units first inspected in Year Four or followed from previous years by the other 14 grantees, 72 percent (5,773) were found to have one or more confirmed or potential hazards (See Figure 4.6).

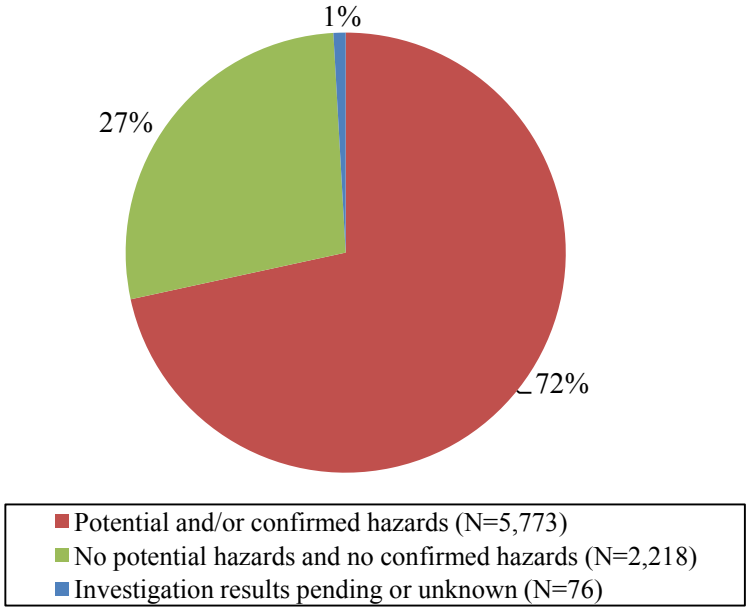
[xx] As noted in Chapter 3, in Monroe County, the Primary Prevention Program has integrated the majority of its inspection activities into the work of the City of Rochester Code Enforcement process. City code enforcement officers conduct a visual inspection for deteriorated paint on the interior and exterior of properties during their routine inspection efforts. By including primary prevention efforts into this systematic code enforcement process, many more units are reached by the program; however, the number of units found not to have hazards also increases due to the quantity of units inspected and the systematic process in place. Other Primary Prevention Programs, including Dutchess and Oneida Counties and New York City also work with code enforcement offices within their high-risk zip codes to target properties through their jurisdictions' code enforcement process. In these jurisdictions, the quantity of inspections is smaller, and therefore does not result in an overall skew of the Primary Prevention Program data as a whole, or these inspections are not captured in the Primary Prevention data system because the code enforcement agency does not meet the NYSDOH definition of an agency that is "supported or deputized" by the Primary Prevention Program.

Figure 4.5. Hazard Status of All Units in Year Four, Monroe Included (N=11,523)



Source: Unit-based data for units first inspected in Year Four or carried over from previous years.

Figure 4.6. Hazard Status of All Units in Year Four, Monroe Excluded (N=8,063)



Source: Unit-based data for units first inspected in Year Four or carried over from previous years.

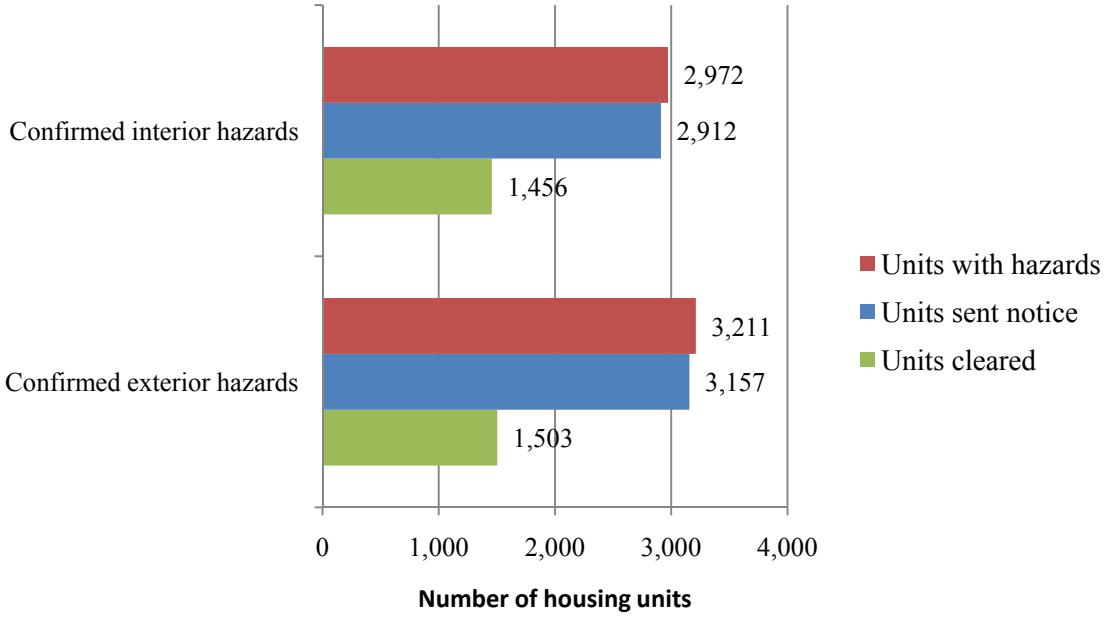
Note 1: Excludes data from Monroe County. By including primary prevention efforts

into the City of Rochester's systematic code enforcement process, many more units are reached by the program; however, the number of units found not to have hazards also increases due to the quantity of units inspected and the systematic process in place. Other Primary Prevention Programs, including Dutchess and Oneida Counties and New York City also work with code enforcement offices within their high-risk zip codes to target properties through their jurisdictions' code enforcement process. In these jurisdictions, the quantity of inspections is smaller, and therefore does not result in an overall skew of the Primary Prevention Program data as a whole, or these inspections are not captured in the Primary Prevention data system because the code enforcement agency does not meet the NYSDOH definition of an agency that is "supported or deputized" by the Primary Prevention Program.

In Year Four, NCHH began collecting information regarding the location of potential hazards in units inspected by the Primary Prevention Program. In prior years, grantees could only indicate if potential hazards were identified; they could not indicate if those hazards were exterior, interior, or both. In addition, NCHH and DOH clearly defined "potential hazards" during Year Four as hazards identified exclusively by visual assessment where no confirmatory testing is planned or conducted. In prior years, units could be identified as having both potential and confirmed hazards.

Among units inspected by the Primary Prevention Program in Year Four or carried over from previous years, nearly 3,000 units had confirmed interior hazards and 3,211 units had confirmed exterior hazards. An additional 510 units were found to have potential interior hazards (hazards identified through visual assessment alone), and 1,526 units had potential exterior hazards (See Figures 4.7 and 4.8).

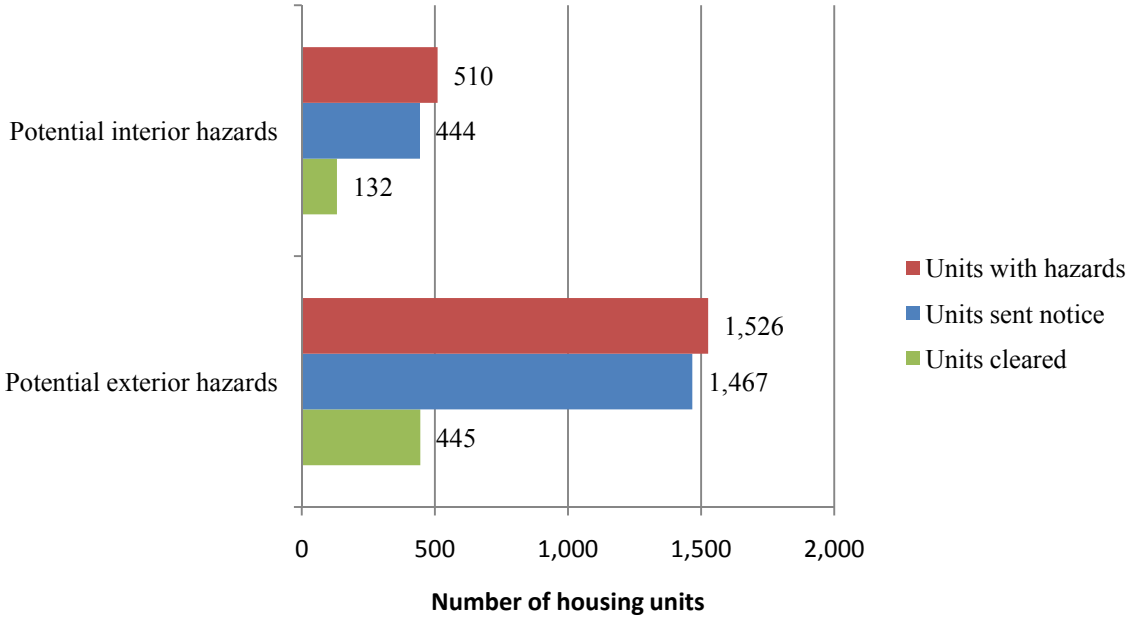
Figure 4.7. Confirmed Hazards, Notices, and Clearance, Year Four



Source: Unit-based data for units first inspected in Year Four or carried over from previous years.

Note 1: Excludes 668 units with "unspecified hazards" only. Unspecified hazards are hazards identified prior to the changes to the Primary Prevention data collection system in April 2011 that are unknown to be exterior, interior, or both.

Figure 4.8. Potential Hazards, Notices, and Clearance, Year Four



Source: Unit-based data for units first inspected in Year Four or carried over from previous years.

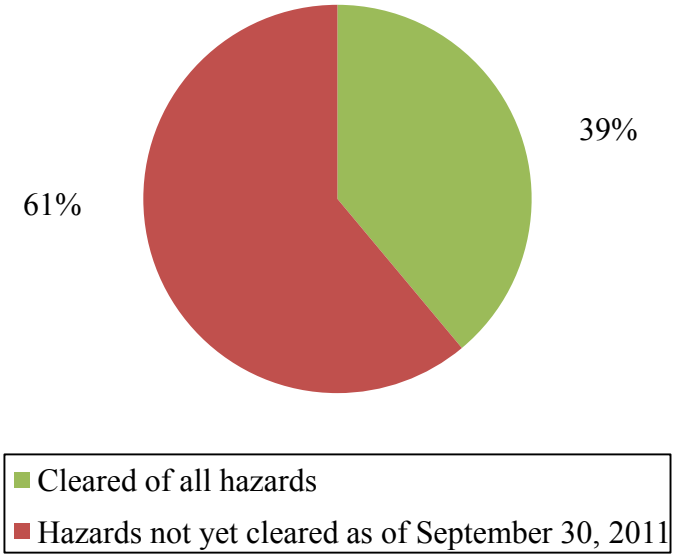
Note 1: Potential hazards are hazards identified exclusively through visual assessment, without testing to confirm the presence of lead.

Note 2: Excludes 668 units with "unspecified hazards" only. Unspecified hazards are hazards identified prior to the changes to the data collection system in April 2011 that are unknown to be exterior, interior, or both.

Contrary to prior years, as Figures 4.7 and 4.8 show, interior and exterior hazards had approximately the same rate of clearance among all grantees. Thirty percent of units sent a notice about potential exterior hazards had achieved clearance of those hazards by the end of Year Four, compared to 29.7 percent of units sent a notice about potential interior hazards. However, units with confirmed hazards were more likely to achieve clearance compared to units with potential hazards. Nearly 47 percent of units sent a notice about confirmed exterior hazard achieved clearance, and 49 percent of units sent a notice about a confirmed interior hazard achieved clearance by the end of Year Four.

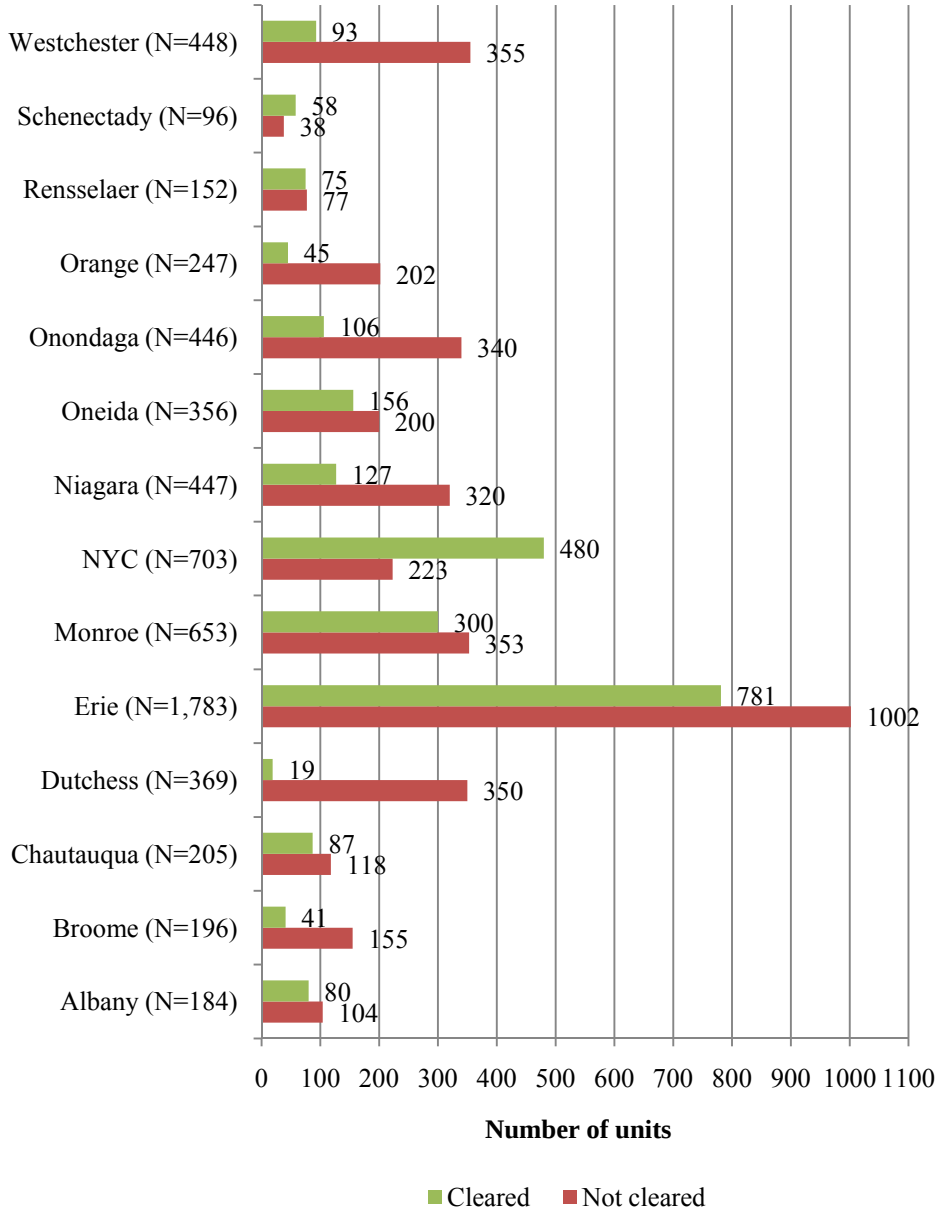
Of units identified to have one or more confirmed or potential hazards, Primary Prevention Programs cleared nearly 40 percent of those units by the end of Year Four. An additional 61 percent of units were not yet cleared as of September 30, 2011 (See Figure 4.9). Grantees differed widely in the number of inspections conducted and the percentage of units cleared of all hazards in Year Four. Among the 14 renewing grantees, the percentage of units with one or more confirmed or potential hazard that were cleared of all hazards ranged from 5 percent in Dutchess County to 68 percent in New York City (See Figure 4.10).

Figure 4.9. Clearance Status of Housing Units with One or More Confirmed or Potential Hazards, Year Four (N=6,287)



Source: Unit-based data for units first inspected in Year Four or carried over from previous years.
Note 1: Excludes 668 units with "unspecified hazards" only. Unspecified hazards are hazards identified prior to the changes to the data collection system in April 2011 that are unknown to be exterior, interior, or both.

Figure 4.10. Clearance Status of Units with One or More Confirmed or Potential Hazard, by Renewing Grantee, through the Fourth Quarter, Year Four



Source: Unit-based data for units first inspected in Year Four or carried over from previous years.

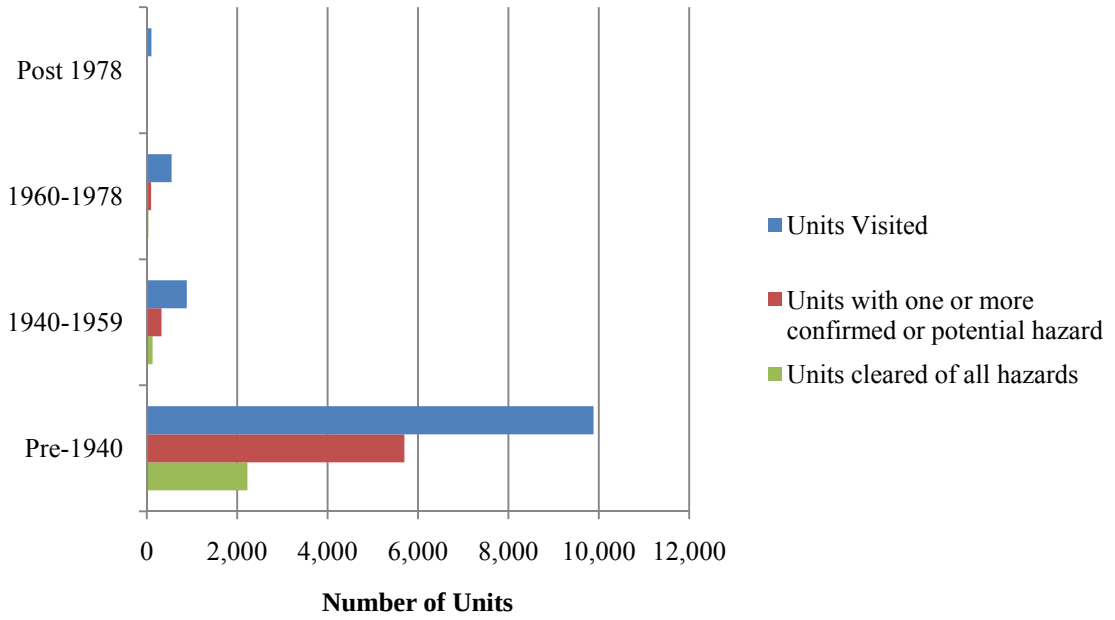
Note 1: Ulster County, the new grantee in Year Four, is not included in the figure due to the comparatively small number of housing units they inspected in Year Four and the short amount of time in which units could have been cleared.

Note 2: Many factors need to be considered when examining differences among Primary Prevention Programs, including: the types of housing found within target areas; inclement weather in the winter season that can impact time from inspection to clearance; and differing program infrastructure and levels of resources.,

The vast majority of units visited by the Primary Prevention Program (87 percent) were built before 1940 (See Figure 4.11), and 77 percent were rental units. Twenty-nine percent of the units visited through the program were owner-occupied, 34.6 percent were multi-family properties with 2 units, and 36.5 percent were multi-family properties with 3 or more units (See Figure 4.12). Four percent of units visited through the program were vacant.

Again, grantees differed widely in the types of properties visited through the program. In Erie County, 45 percent of units visited were owner-occupied, compared to New York City and Ulster County which did not visit any owner-occupied units. In Albany, Oneida, Onondaga, Schenectady, and Ulster Counties, over half of the units visited were multi-family buildings with two units. Conversely, over 80 percent of the units visited by both New York City and Westchester County were in buildings with three or more units.

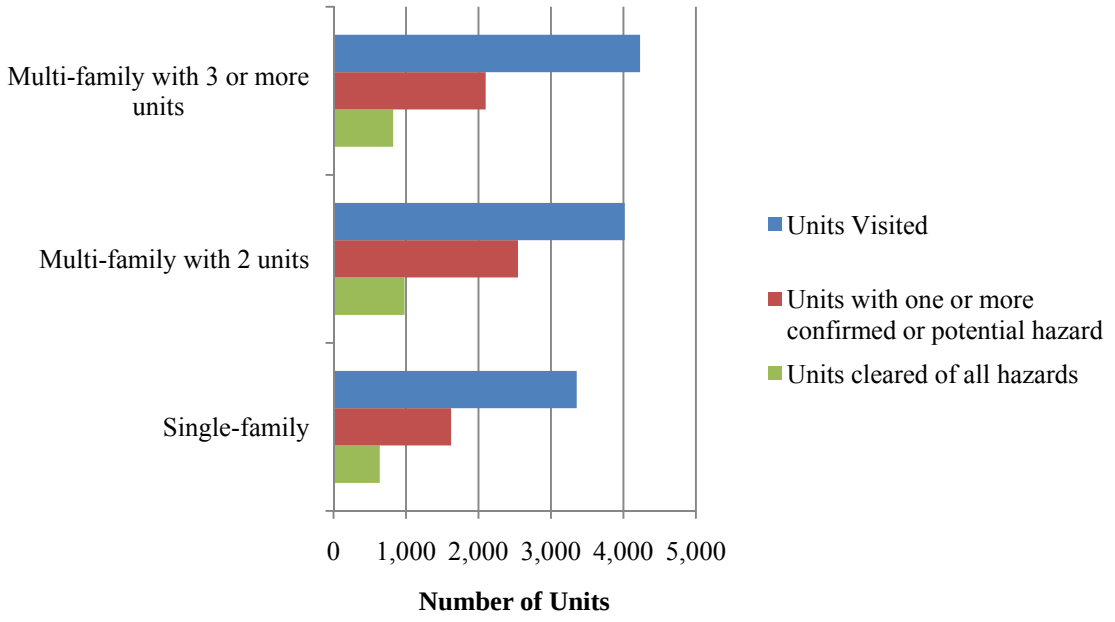
Figure 4.11. Units Visited, With Hazards, and Cleared of All Hazards, by Building Age, Year Four



Source: Unit-based data for units first visited in Year Four or carried over from previous years.

Note 1: Excludes 248 units for which the age of the property is unknown, and 63 units for which the age of the property is missing.

Figure 4.12. Units Visited, With Hazards, and Cleared of All Hazards, by Building Type, Year Four

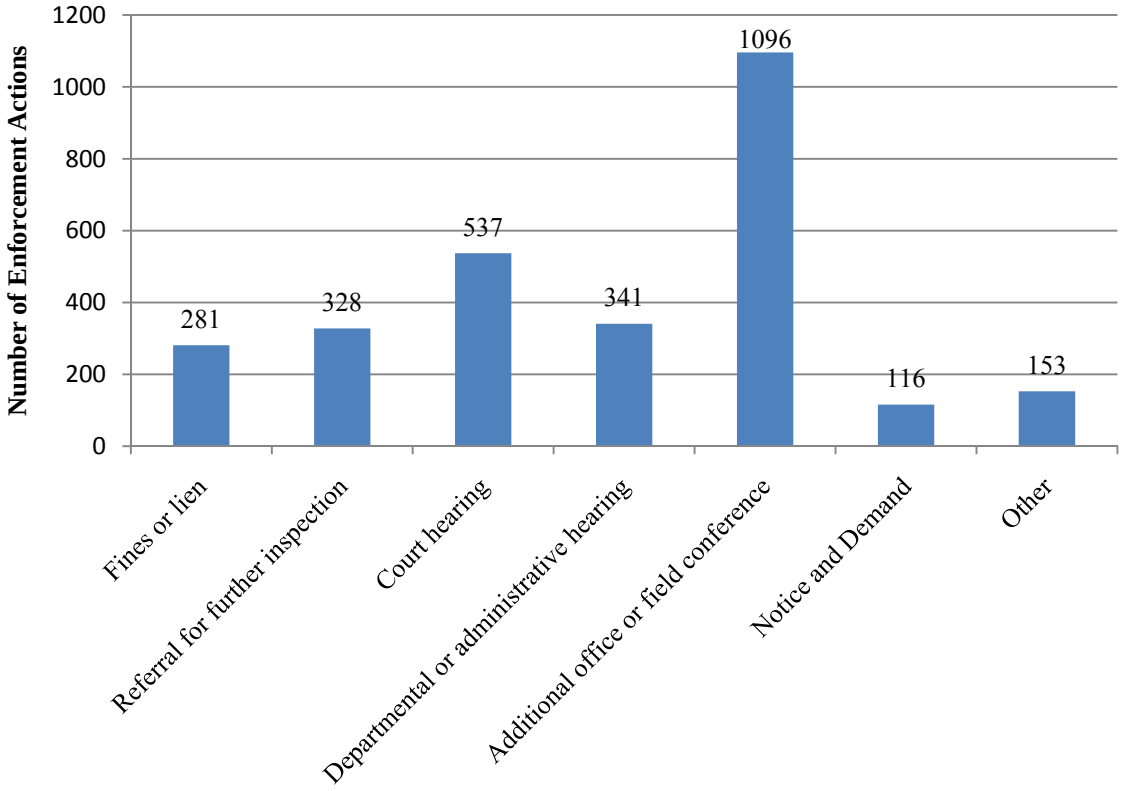


Source: Unit-based data for units first visited in Year Four or carried over from previous years.

Note 1: Excludes 126 units for which the data regarding building type are missing.

Primary Prevention Programs typically use a notice and demand or another administrative notification as the initial notice of hazards. Primary Prevention Programs used additional enforcement actions beyond the initial notice of hazards for 1,894 units in Year Four to help facilitate remediation and clearance of units with identified hazards. As shown in Figure 4.13, additional office or field conference were the most frequently used enforcement technique (1,096 actions in Year Four), and use of a notice and demand was the least reported enforcement technique (116 actions in Year Four).

Figure 4.13. Number of Additional Enforcement Actions Needed, by Type



Benefits for Children and Others

Children benefited in multiple ways from Primary Prevention inspections and interventions. Some benefits were experienced immediately; others are likely to occur in the future. For example, future child residents living in a housing unit that was cleared of hazards through these interventions will benefit from living in a lead-safe home, as long as the housing unit is maintained and remains lead-safe.

Year Four activities affected at least 5,664 children though visits, inspections, and remediation efforts that made their parents or caregivers more aware of lead hazards and the need for remediation.

DOH asks all grantees to report the number of children living in the housing units visited and the number referred for BLL testing. Most grantees do report the number of children living in each unit. Some counties, including Dutchess, Erie, Oneida, and Monroe are only able to do so for a portion of all units inspected due to the nature of their inspections. In Monroe, where inspections are conducted by city building inspectors, information about children is not reported to the grantee. In Dutchess, city building inspectors capture information on the number of children when possible, but this information is not always gathered. In Erie, most inspections involved exterior assessments, which do not provide information about children residing in the unit. Oneida

conducts nearly half of its inspections through its contract with the City of Utica Codes Department. The purpose of these inspections is to improve neighborhoods and high-risk streets by targeting and eliminating exterior hazards that could increase soil or dust hazards in adjoining homes; therefore, these inspections typically do not result in information about children residing in the unit.

For units for which information on children was available, Primary Prevention grantees reported visiting 3,852 housing units where at least one child was present, and reported a total of 5,664 children impacted through these visits. The program referred 3,126 children for blood lead level testing as a result of these visits.

Increased awareness of owners and tenants about lead paint hazards. Although the grantees were unable to quantify the change in information and attitudes of owners and tenants in the nearly 12,000 housing units first visited in Year Four or carried from previous years, it is reasonable to think that both owners and tenants learned from the experience of the inspection and, where needed, from the remediation and clearance efforts. This increased information and awareness may lead them to preventive actions that will protect children in the future in houses that they own or rent.

Creation of lead-safe housing units. Removal and stabilization of lead-based paint hazards from housing units benefits children and others living in the unit at the time. So long as the unit is maintained properly, remediation also benefits children and others who will live in the unit in the future. Data from the HUD Lead Hazard Control Grant Program indicate that a range of lead-hazard control treatments are all effective at significantly reducing lead levels on floors, window sills, and window troughs even six years after the lead hazard control treatments.[xxi] These treatments include low-level interventions (paint film stabilization and specialized cleaning of dust and, in some cases, capping of window sills and troughs), mid-level interventions (partial or full window abatement plus abatement of selected surfaces), and high-level interventions (full abatement). A HUD-funded evaluation of the treatments after 12 years is currently underway and will provide further information regarding the long term success of various lead hazard control treatments. Whenever possible, grantees should continue to strive to find programs and funding to replace key components such as windows and trim. Additionally, the use of interim controls stresses the need for local policies to ensure ongoing property maintenance.

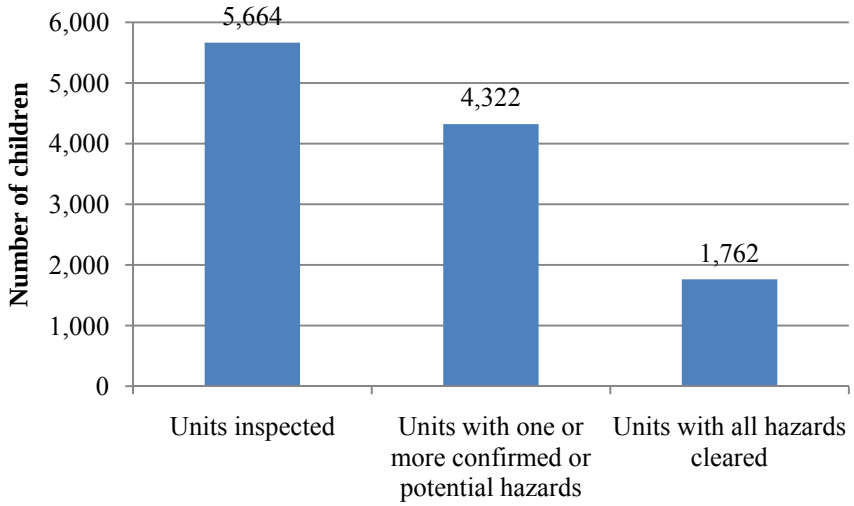
As previously noted, in Year Four, grantees confirmed that remediation in 2,448 units had produced lead-safe housing. Of those units, at least 1,227 had one or more children living there.

The Primary Prevention Program directly benefited at least 5,663 children six and under who lived in housing units that were inspected (see Figure 4.14). Of these, at least 4,332 lived in housing with one or more confirmed or potential hazards that needed action to

[xxi] Wilson, Jonathan et al. (2006). Evaluation of HUD-funded lead hazard control treatments at 6 years post-intervention. *Environmental Research* 102 (2): 237-248.

prevent lead poisoning. By the end of Year Four, all hazards had been cleared from the units in which at least 1,762 children lived.

Figure 4.14. Number of Children in Units Inspected, in Units with Hazards, and in Units with All Hazards Cleared, Year Four

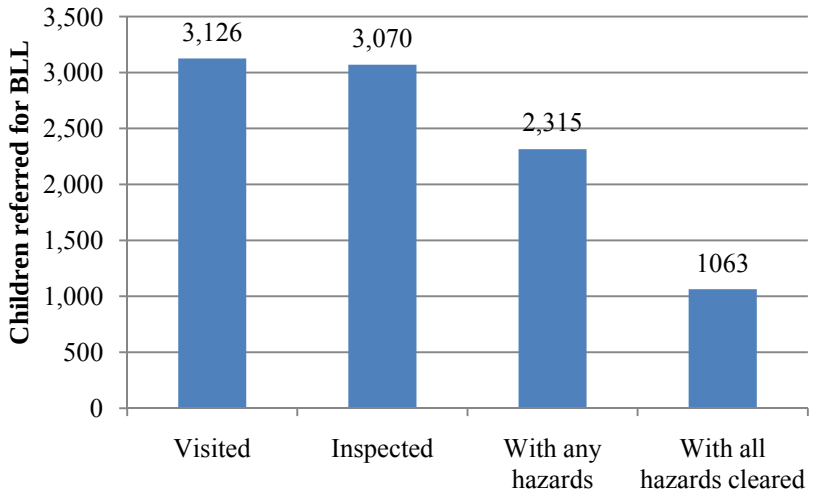


Source: Unit-based data for units first inspected in Year Four or carried over from previous years.

Note 1: Excludes 668 units with "unspecified hazards" only. Unspecified hazards are hazards identified prior to the changes to the data collection system in April 2011 that are unknown to be exterior, interior, or both.

Referral for BLL tests. In addition to the increased safety of the home, children benefited from referrals for BLL tests (see Figure 4.15). Grantees referred many of the children they encountered in the units for BLL tests, including children who have never had a BLL test, children who are overdue for a BLL test, and children whose parents are unsure if they have ever had a BLL test. At least 60 percent of those children in units cleared of hazards (1,063 of the 1,762 children) were referred for testing.

Figure 4.15. Number of Children Referred for BLL Test from Units with Different Characteristics, Through Fourth Quarter, Year Four



Source: Unit-based data for units first inspected in Year four or carried over from previous years.

Note 1: Hazard column excludes 668 units with "unspecified hazards" only. Unspecified hazards are hazards identified prior to the changes to the data collection system in April 2011 that are unknown to be exterior, interior, or both.

Improved health outcomes. Increased awareness of LBP hazards and production of lead-safe housing units are useful indicators that primary prevention may be achieving its goal of preventing the neurodevelopmental damage of children from exposure to lead.

Leveraged resources. The Primary Prevention Program has leveraged additional resources for lead poisoning prevention in New York State by assisting many jurisdictions in successfully obtaining funding through HUD's Lead Hazard Control, Lead Hazard Reduction, and Healthy Homes Production Grant Programs. The Primary Prevention Program has helped to leverage these resources by providing necessary match funding during the application phase, providing data on high-risk properties and children, and developing partnerships to assist in the development of successful grant applications.

Other benefits. As grantees are increasingly successful in getting housing units remediated, whole neighborhoods are being changed in appearance, especially where the units being cleared are single family dwellings or small rental properties. In addition to protecting children, this intervention can improve neighborhoods and property values. It can be useful for grantees to make sure the community sees this benefit. Documenting

this change—perhaps with "before" and "after" photographs—is one way for the grantee to increase support from property owners for this effort.[xxii]

Building Lead-Safe Work Practice Workforce Capacity

Training Accomplishments

During Year Four, grantees offered a total of 258 courses that built the capacity of 2,686 individuals in LSWP. During Year Four, grantees offered both HUD/EPA LSWP classes and EPA Renovation, Repair, and Painting (RRP) classes. Additionally, some grantees offered other types of LSWP training outside of the standard HUD/EPA or RRP curricula models. Seven of the 15 grantees continued to offer the HUD/EPA LSWP class during this period. Five grantees (Broome, Chautauqua, Dutchess, Monroe, and Niagara) offered only RRP classes, while three grantees (Erie, Oneida, and Orange), offered RRP classes and/or HUD/EPA LSWP classes as well as other training models. For example, Erie County provides on-the-job training for jobless individuals residing within their high-risk areas and trains them as contractors competent with LSWP, eventually resulting in RRP certification. In addition to the RRP training, Orange County also provides the "Don't Spread Lead Training for Do-It-Yourselfers" in both English and Spanish. Oneida County partners with Mohawk Valley Community College to offer a lead-safe window replacement course to residents of Oneida County. Residents that complete the course receive discounts on windows from a window manufacturer in New York State.

The pronounced shift toward RRP classes that began in Year Three continued in Year Four (See Table 4.2). Whereas about 60 percent were trained in the HUD/EPA LSWP curriculum in Year Three, approximately 29 percent were trained in the HUD/EPA LSWP course in Year Four. The percent of students trained by grantees in either the 8 hour RRP course or 4 hour RRP refresher course rose from 40 percent in Year Three to 65 percent in Year Four, for a total of 1,755 students out of 2,686 trained through Primary Prevention Program funds in Year Four.

Table 4.2. LSWP Training Sessions and Individuals Trained by All Grantees, through Fourth Quarter of Year Four

Type of Training	Number of Sessions	Number of Individuals Trained
EPA/HUD LSWP curriculum	54	784
EPA 8-hour renovator curriculum (RRP)	144	1,165
EPA 4-hour RRP refresher	42	590
LSWP presentations not using EPA/HUD curriculum	9	63
Other	9	84
TOTAL	258	2,686

[xxii] These "before and after" photographs can also be helpful during enforcement processes. For example, Oneida County sends copies of digital photographs with the initial notice of hazards to property owners and uses them as documentation in enforcement hearings.

Source: Quarterly reports.

Note 1: Some individuals might have received more than one kind of training.

Note 2: Data do not include training programs that have become self-sustaining through local partnerships with community colleges.

As in previous years, a small number of grantees reported the most training paid for with Primary Prevention funds. New York City, Albany, Erie, Monroe, and Rensselaer combined represented a total of 1,783 students, approximately two-thirds of the total number trained.

Many grantees use contractors or partners, such as Environmental Education Associates, Cornell Cooperative Extension, or Boards of Cooperative Educational Services (BOCES), to instruct the classes, but many grantees continue to make substantial investments of time and resources to arrange for facilities, register participants, addressing cancellations and waiting lists, and advertise courses. However, some grantees offer the RRP training directly through their Primary Prevention staff, including Erie (which received RRP accreditation in March 2010) and Orange, which received RRP accreditation during Year Four.

Grantees continue to use various techniques to facilitate training among a diverse population. New York City, Oneida County, and Orange County conducted LSWP sessions in Spanish. Orange County translated the "Don't Spread Lead" curriculum into Spanish during Year Four to be able to provide additional training to their Spanish-speaking residents. New York City continued to use their modified course testing procedures to address low literacy levels for Spanish- and English-speakers who take the LSWP class.. Most grantees offered training for free or at reduced cost and took steps to schedule the training when it would be most convenient for participants to attend. Some offered incentive packages to participants who completed the training. Albany, Rensselaer, and Schenectady counties coordinate their LSWP and RRP training in order to maintain ongoing training throughout the year for residents of all three counties. Orange County reserves places in their RRP classes for property owners that do not have the resources to hire firms but do the work themselves Grantees also pursued mechanisms to create sustainable training programs in their jurisdictions. For example, Oneida County has developed a sustainable training relationship with the Mohawk Valley Community College by incorporating RRP into their regular course offerings. In Year Four, this partnership resulted in 366 individuals trained in LSWP or RRP in Oneida County during Year Four, but Primary Prevention funds were only needed to cover the cost for 97 students.

Challenges in LSWP Training

As grantees sought to offer training and encourage wider adoption of LSWP and RRP training, they encountered several barriers. One particular frustration expressed by grantees was that EPA will not permit them to provide interpreters for the RRP course, making it extremely difficult to provide RRP training in other languages needed by their communities. Although Spanish-language RRP courses are provided, grantees noted that they are provided too infrequently to assist contractors or property owners in a timely manner. Additionally, with the diversity of languages spoken among the fifteen counties,

the Spanish-language courses only address one segment of non-or limited-English proficiency property owners and contractors.

An additional concern voiced regarding the RRP course is that some undocumented workers are unable to complete the EPA required paperwork to take the course due to deportation concerns. As one grantee wrote, "these workers are working in the community and wish to be trained, but cannot under the current set of EPA rules….despite their lack of legal status, they are working in the construction field and their lack of lead-safe work practice knowledge puts them, their families, and our residents at risk for lead poisoning due to unsafe construction work."

Finally, grantees noted that resource constraints present a challenge with regard to RRP enforcement. Primary Prevention Programs are working to develop protocols within their inspection processes to ensure that remediation work is being conducted by RRP certified contractors to the extent they are able. For example, Dutchess County has incorporated a question regarding RRP compliance on their building permit applications. New York City worked with the EPA to develop a referral process for reporting contractors to the EPA who were identified in inspections of unsafe renovation and repair work where a violation was cited. New York City started making these referrals to the EPA in May 2011. If they identify unsafe work practices during an unsafe work complaint inspection, the Primary Prevention Program refers the complaint to the EPA Region 2 in addition to conducting its own follow-up and enforcement. Orange County also works directly with EPA Region 2 Staff on RRP enforcement actions. Oneida County put a link on their website to the EPA complaint line and sends mailings to contractors informing them about this website link so that they can report unlicensed contractors or unsafe work practices.

Developing Partnerships and Community Engagement

Outreach and Education

All grantees sought to create awareness and support for housing-based primary prevention and to engage residents and property owners in target areas in Primary Prevention Program services. In addition to the examples provided below, grantees continued to reach millions of individuals through news stories, radio segments, paid advertisements, health fairs, letters, flyers, displays, and other forms of direct contact with residents and property owners.

Examples of outreach and education activities conducted during Year Four included the following:

1. Numerous grantees, including Albany, Broome, Oneida, and Onondaga Counties and New York City, sent letters to parents whose children had recently been tested for lead and were identified to have a BLL between 5 and 14 µg/dL to offer Primary Prevention services.

2. Broome County partnered with WICZ Fox News 40 in their community to televise a short demonstration on how to properly clean window wells.

3. Niagara County conducted outreach with new moms through local hospitals to provide lead poisoning prevention information and information regarding the Primary Prevention Program.

4. New York City developed "teaching mats" which highlight common environmental home health hazards, including lead paint hazards, and the factors which cause them. The teaching mats are similar to table place mats and are laminated and double-sided, and are available in both English and Spanish. The Primary Prevention Program is exploring ways to use these teaching mats with home visiting agencies in New York City.

5. Oneida County used social media to target their referrals and identify when their target audience is most available.

6. Onondaga County developed a half-day training program for local refugee resettlement agencies to emphasize the importance of employing primary prevention strategies in housing selection for newly arrived refugees and highlight local resources available for blood lead screening and housing inspection and remediation. Oneida provides three classes to newly arrived refugees on lead hazard reduction in the home, home safety, and low cost methods for creating a raised bed garden to reduce exposure to lead in soil.

7. Orange County developed new partnerships with the "Welcome Center" of the Newburgh School District Head Start Program and St. Luke's Hospital. School and hospital staff members provide educational materials on lead poisoning prevention and referral forms for the Primary Prevention Program to families living in targeted census tracts.

8. Ulster County partnered with the Rural Ulster Preservation Corporation (RUPCO) on RUPCO's annual landlord event and provided information on lead-safe work practices, LSWP and RRP training availability, and the Primary Prevention Program to approximately 150 property owners.

Collaboration with Community Groups, Agencies, and Legislators

Grantees recognize that community, agency, and legislative support for primary prevention are critical to the Primary Prevention Program's success. The fifteen grantees started with very different institutional infrastructures to support housing-based primary prevention. Some grantees had little or no lead abatement workforce capacity, little or no past relationships with their housing or codes departments, few or no coalitions, no local lead laws, and limited resources even in the health department. Others had all that capacity in place when they began. Many of the initial grantees of the Primary Prevention Program already had HUD grants in place, Healthy Neighborhood Programs, and local lead ordinances.

During Year Four, grantees continued to expand their community and agency collaboration to support their primary prevention efforts.

Examples of innovative partnerships used to leverage Primary Prevention efforts in Year Four include the following:

- Albany County partnered with programs within the Albany County Health Department, including their Dental Program, Immunization Clinic, and Community Health Worker Program to distribute information on lead poisoning prevention and Primary Prevention services to families served through these programs. Albany County also worked with local clinics, OB/GYN, and pediatric offices to distribute information about Primary Prevention services and incentives (such as cleaning supplies) available to families for participating in the program.
- Broome County worked with their County Clerk to begin attaching notices of violation to the deed records of properties for which the program is unable to identify or locate a legal owner, ensuring the violations are legally noted when the property is purchased or ownership transferred.
- Chautauqua County worked with a local City of Jamestown legislator who agreed to go through the Primary Prevention inspection, remediation, and clearance process on her City of Jamestown property so that she will be able to better describe the program to her fellow legislators.
- Dutchess County joined the Dutchess County Housing Consortium, a group of public, non-profit, and private stakeholders working on housing issues in the County, and are working to incorporate primary prevention efforts into the consortium's priorities and activities.
- Erie County worked with a number of partners, including the Community Foundation for Greater Buffalo, the Buffalo Urban League, the Lieutenant Colonel Matt Urban Human Resources Center, and the SS. Columba-Brigid Americorps Program to develop their innovative On the Job Training (OTJ) initiative. This initiative recruits jobless individuals residing within high-risk communities and trains them as contractors competent with LSWP. During Year Four, the OTJ program assisted with remediating and clearing 62 properties in the City of Buffalo.
- Monroe County worked with the Office of Child and Family Services (OCFS) to develop a pilot program for inspecting family and group-family daycares.
- New York City developed a strong partnership with the New York City Department of Housing Preservation and Development (HPD) and Neighborhood Housing Services (NHS) to promote awareness of loans and other financial products available to fix lead paint and other home health hazards. A financial brochure, available in English and Spanish, was created and widely disseminated to New York City building owners. New York City is also collaborating with the Office of Administrative Trials and Hearing (OATH). OATH is responsible for administrative hearings related to violations of the New York City Health Code. OATH has improved the information flow to programs

regarding the results of hearings and monthly meeting have been established to discuss issues and new procedures. The New York City Primary Prevention Program is looking at new information to see how it can best be used to improve documentation and outcomes.

- Oneida County convened a Legal Seminar with the Oneida County Bar Association which provided continuing legal credits to judges, attorneys, and law guardians. The Legal Seminar resulted into positive collaborations between city court judges and the Primary Prevention Program, with local judges agreeing to work collaboratively to improve housing outcomes, host trainings for prosecution and defense attorneys on how to prepare and defend dockets that will enhance their chance of success in court on housing matters, and discuss the implementation of potential housing court changes.
- Orange County partnered with local Women, Infants, and Children (WIC) offices, pediatric offices, and health centers to distribute educational materials on prevention methods and obtain referrals for inspections from staff and patients within target census tracts.
- Rensselaer County developed a partnership their local Department of Social Services (DSS) agency during Year Four. Prior to placing a child in foster care, the local DSS agency now contacts the Rensselaer Primary Prevention Program to conduct an inspection of the property to ensure that children are placed in lead-safe foster homes. Onondaga County also has partnership agreement with their local DSS agency to conduct pre-placement inspections.
- Schenectady County developed an agreement with the City of Schenectady's new HUD grant to complete 100 inspections on behalf of the HUD grant over the next two and a half years of the grant.
- Westchester County partnered with CLUSTER, a local tenant advocacy organization, to conduct inspections of client households where children reside.
- Given funding challenges that impacted all grantees in Year Four, numerous grantees successfully used student interns and partnerships with local colleges to strengthen their programs. Chautauqua County worked with a student intern from the State University of New York (SUNY) Fredonia to map all units with previous EBLL cases and units inspected by the Primary Prevention Program. Oneida County worked with local high school interns to conduct a "Food Styling Project" that serves the needs of the Somali and Burmese populations in Oneida County and highlights the importance of nutrition in lead poisoning prevention.

Although grantees noted significant challenges to partnership development, during the Year Four *Technical Assistance and Networking Gathering* the grantees noted the following "keys to successful partnerships:"

- Identifying a dedicated Primary Prevention Program staff member responsible for partnership development.

- Developing personal relationships with key staff members at partner agencies to facilitate meaningful and sustainable relationships.
- Identifying incentives and benefits for partners to ensure the collaboration results in a "win-win" situation.
- Persistence of staff members and program leadership.

5. QUANTIFYING PROGRAM COSTS AND BENEFITS

As a part of the final report requirement, grantees are asked to detail how they used their funding to achieve the goals of their work plan. This analysis is intended to serve as a self- assessment and to identify cost-effective practices. Although the format is optional, technical assistance and training was offered to programs for a second year (Years Three and Four). Conducting cost analysis is important because it can estimate the burden of childhood lead poisoning on a community (cost of illness) and provide support for program funding and expenditures by detailing the return on investment. The process of conducting cost benefit analysis also has a collateral benefit of facilitating process improvement as component parts of a service system are analyzed.

True cost benefit analysis is an economic evaluation that calculates program costs and outcomes in monetary terms. Net benefit can be calculated by subtracting the cost of an intervention(s) from monetary health and environmental benefits. As Primary Prevention Programs work toward conducting true cost benefit analysis, they are developing capacity by documenting the cost of illness and by comparing the costs and outcomes of various interventions.

Activities

Technical Assistance and Webinar

At the Primary Prevention Technical Assistance and Networking Gathering in April 2011, NCHH presented examples of cost-benefit analysis (CBA) approaches conducted by various grantees in Year Three, and reviewed key components of the Westchester CBA pilot project. NCHH then facilitated a discussion that allowed grantees to reflect on how CBA proved to be useful, what they found challenging and how they would like to proceed in Year 4:

- A number of grantees stated they used the results to make programmatic improvements to their referral, outreach, and inspection processes;
- Oneida County presented its CBA information to its Board of Legislators. The data are being referenced by the media, and are also presented in the annual report and the County Executive's State of the County address;
- Grantees noted the CBA results are helpful in building political will;
- Grantees noted the CBA is a challenging process. Programs are unsure what they will find, and worry about being compared with other counties despite differences in local resources and capacity;
- Grantees noted the CBA can be time consuming;
- Grantees found it challenging to quantify the benefits of the program, and therefore wondered how to make the CBA valuable.

Following this discussion, grantees worked with their colleagues to prepare a plan for their Year Four CBA.

In September 2011, NCHH hosted a webinar to introduce grantees to a new *Cost Benefit Templates and Guidelines* document (see Appendix D). The intent of this document and of the webinar was to provide grantees with specific formulas and models for conducting cost benefit analysis depending on their needs. The webinar also provided a review of the toolkit generated through the Westchester CBA pilot.

Summary, Highlights, and Strategies of Year Four Efforts

After the September 2011 webinar, NCHH provided one hour technical assistance sessions to each Primary Prevention Program to help them think through their Year Four cost analysis and to determine how NCHH could support their efforts. NCHH also reviewed draft cost analysis reports during the months of December 2011 and January 2012 and provided written feedback to grantees that chose to exercise this option prior to their final submission. This section of the document highlights a few of the model strategies and approaches taken by Primary Prevention Programs in their Year Four cost analyses.

Impact of Childhood Lead Poisoning on Early Intervention Programs (EIP):

Oneida County developed a CBA model to quantify the costs of Child Find and EIP that could be avoided by preventing lead exposure. Their leadership in developing this approach is an important innovation as counties throughout the state struggle with the cost of these important services. Oneida's approach will be shared with other grantees and can be used to strengthen the value of and support for the NYSDOH Primary Prevention Program.

Cost of Illness:

New York City estimated the burden of lead exposure by quantifying the costs of health care, special education, juvenile delinquency and loss of lifetime earnings. The cost of lead poisoning in 2010 is estimated at $246,990,939 - $1,427,437,911. This is a powerful statement on the value of prevention. Albany, Chautauqua, Monroe, Onondaga, Rensselaer, and Schenectady Counties also conducted in-depth cost of illness analyses.

CBA Dissemination:

Schenectady County incorporated insights from their CBA into a presentation to other counties about their successful partnership with the Section 8 Program. Rensselaer presented their CBA report to elected officials and community partners to discuss the importance and impact of primary prevention.

Calculating Actual vs. Estimated Costs:

Oneida County documented and calculated the actual public health and health care provider costs for children with lead levels $\geq$15µgdL by blood lead category. Oneida County calculated costs for each intervention or service and reviewed charts to determine the services provided for each child. Long term service costs were determined and

categorized as carry-over costs to document the value of services in subsequent years. The program obtained chelation costs from actual hospital invoices through a partnership with the Department of Social Services (DSS).

Quantifying Additional Costs of Enforcement:

Broome, Chautauqua, Onondaga, and Westchester Counties quantified the additional costs of enforcement actions required to achieve compliance. Broome County estimated the different costs of various enforcement strategies, such as the Spiegel Act, Findings of Violation, and Hearings, and used this information as their first step in evaluating the most cost-effective enforcement mechanisms in their county.

Value of Leveraged Lead Based Paint Remediation:

Oneida County worked with their property owners and contractors to determine the cost of lead based paint remediation that occurred as a result of a Notice and Demand. Surveys were sent to property owners to obtain actual costs. In other cases, treatment costs were specified and applied to scopes of work. Oneida County used the value of these leveraged costs to determine a specific return on investment for their contract with the City of Utica Building Codes Department.

Erie County documented the actual costs of lead hazard control based on information collected as a part of their HUD Lead Hazard Control grant. Cost per deteriorated component/treatment specification, cost per unit, and the average cost of lead hazard control were all provided. Using these actual costs, Erie County estimated the value of the Primary Prevention Program's work to be $3,150.93 per housing unit, for a total of $2,816,933.39 over 984 units. These estimates can be used to educate property owners and policy makers regarding the value of the Primary Prevention Program.

Recommendations

During the Fifth Year of the Primary Prevention Program, grantees are encouraged to:

1. Conduct prospective time studies on interventions or service systems of interest to assure accuracy and system improvement.

2. Conduct cost of illness estimates (if they haven't already done so) to quantify the burden of childhood lead exposure on their community and the value of prevention during these austere times. Ideally, local costs can be identified and used to determine the cost of health care, special education and juvenile delinquency resulting from lead exposure.

3. Determine the impact and costs of childhood lead exposure on Early Intervention Programs based on the model developed by Oneida County.

4. Engage in more robust outcome evaluation to determine how their program interventions are impacting changes in child health and high risk housing stock. NCHH is in the process of developing technical assistance briefs to support these efforts.

6. CONCLUSIONS AND RECOMMENDATIONS

The Primary Prevention Program has made a significant difference in the lives of children and their families in New York State and has built unprecedented infrastructure to support primary prevention efforts. Since its inception on October 1, 2007, over 10,000 children have been directly affected by the Primary Prevention Program through visits to their homes, and nearly 6,000 have been referred for blood lead testing as a result of those visits. Over 21,000 housing units have been inspected, and nearly 10,000 of them were found to have potential and/or confirmed lead-based paint hazards. Of those housing units with hazards, 5,302 have been remediated and made lead-safe. Work is underway in 3,697 more units that have not yet been cleared of all hazards.

Program Challenges and Sustainability

Budget challenges at the federal, county, and city levels presented tremendous challenges to Primary Prevention Programs in Year Four. Although Primary Prevention funding through DOH remained relatively stable, programs were significantly impacted by staff layoffs triggered by county and city budget constraints that directly impacted Primary Prevention Program staffing levels and resulted in redistribution of workload across fewer staff members. At the federal level, the final appropriations bill for FY12 provides only $2 million for CDC's Healthy Homes and Lead Poisoning Prevention Program—down from $29 million in FY11. This dramatic cut has significant implications for the Childhood Lead Poisoning Prevention Programs and lead poisoning prevention infrastructure across the United States.

Sustainability for primary prevention means the capacity to support and maintain primary prevention activities over time. During Year Four of the Primary Prevention Program, the DOH encouraged grantees to consider how they will make their program activities sustainable in the long term through strategies such as leveraging funding, identifying partners to conduct inspections, and creating community demand for lead-safe housing. This included a focus a continued focus on sustainability at the Year Four *Technical Assistance & Networking Gathering* as well continued inclusion of specific sustainability questions in the grantee work plan directions for Year Four.

Efforts to improve program sustainability will be increasingly important given the current funding challenges at national, state, and local levels. In Year Four, NCHH and DOH worked with grantees to consider how they can use their cost analysis reports to increase efficiency in their programs and highlight the economic benefits of the program to their jurisdictions. In Year Five, NCHH and DOH will continue to work with grantees to build their capacity in order to support and maintain program activities over time.

Promising Strategies for Year Five

Because of the wide diversity in infrastructure, demographics, and housing types within the grantees' geographical areas, the following strategies may not be useful in each situation. Nevertheless, they show promise for further consideration.

1. Agreements with code enforcement to conduct systematic code enforcement and lead-specific inspections with Primary Prevention funding rather than using Primary Prevention staff for all inspections.
2. Agreements with local Section 8 administrators to improve housing quality and increase the ease with which families with young children are able to use Section 8 vouchers.
3. Increasing the number of individuals trained in LSWP through partnerships with workforce development programs, community colleges, and other partners, using Primary Prevention as a referral source for training rather than a primary source of funding.
4. Providing LSWP or RRP training as a continuing education activity and providing legal credits to judges, attorneys, and law guardians for legal seminars related to lead poisoning prevention and housing enforcement.
5. Agreements with social service agencies at the local or state level to ensure children in social services-funded housing are in lead-safe homes.
6. Expansion of primary prevention coalitions or participation in local coalitions and task forces focused on improving housing.
7. Use of cost analysis to examine effective referral sources and partnerships, identify opportunities for process improvement, and quantify the benefits of the Primary Prevention Program to health, juvenile justice, education, and other areas.
8. Creation and expansion of partnerships between Primary Prevention Programs and HUD grant programs in local jurisdictions.
9. Examine the monetary benefits of lead hazard control through Primary Prevention efforts in terms of child health, property values, and energy efficiency.
10. Agreements with County Clerk offices to attach notices of violation direction to property deeds in order ensure that violations are legally noted when the property is purchased or ownership transferred.

Areas for Additional Research

Despite the increase in qualitative and quantitative information on the impact of the Primary Prevention Program, there are still outstanding issues that would benefit from more research:

1. What are the true costs to property owners to comply with the orders for remediation under the Primary Prevention Program, and how can these costs be reduced?
2. What are tenants' experiences after required remediation? Do evictions increase?
3. What are the monetary benefits of lead hazard control through Primary Prevention efforts in terms of child health, property values, and energy efficiency?
4. What are the advantages and disadvantages of requiring a dust wipe test in housing units that do not have deteriorated paint as a way of ensuring that the

units are safe from otherwise undetected lead dust hazards? In what circumstances is that a cost-effective strategy?

5. What are the health outcomes for children of the Primary Prevention Program?

Recommendations for Grantees

NCHH provides the following recommendations for grantees:

Identifying housing at greatest risk for lead-based paint hazards:

1. Encourage code enforcement officials to adopt systematic rental property inspection programs and to use the Property Maintenance Code for citing deteriorated paint in pre-1978 housing. A Certificate of Occupancy should only be issued after lead-based paint (LBP) hazards have been addressed. Consider designating the local housing code agency within a community of concern as an agency authorized to administer the provisions granted under PHL 1370-a(3).
2. Increase inspections targeted to units where children with BLLs of 5-9 or 10-14 µg/dL have resided in the past in order to ensure that these units provide no ongoing risk to children. This recommendation is especially salient given the recent advisory committee recommendation to CDC regarding lowering the action level for case management.
3. Continue to develop and implement strategies to ensure inspection and clearance of both the exterior and interior of housing units.
4. Expand mapping efforts by integrating lead poisoning prevention data with other health statistics, such as childhood injury and asthma prevalence data. This approach may identify future partners for prevention and increase understanding of the health issues associated with the housing in the high-risk zip codes.

Developing community engagement and partnerships:

1. Continue to win the support of elected and appointed local, regional, state, and federal officials, especially to achieve cooperation in enforcement and funding for lead hazard control.
2. Encourage agency partners in housing and other areas to participate in creating lead-safe housing by fully exercising their own agencies' mechanisms to encourage or sanction owners to make their properties lead-safe.
3. Consider funding partner agencies with Primary Prevention funds to assist in identification of high-risk units and inspection strategies.
4. Continue attempts to encourage agencies that fund housing for children to ensure the housing they finance is lead-safe. Forge partnerships with public agencies (e.g., DSS, weatherization agencies, nonprofit housing agencies) to ensure that families receiving government assistance have access to lead-safe housing.
5. Rejuvenate existing coalitions and task forces, develop new coalitions and task forces as needed, and identify opportunities to integrate into other local coalitions

and task forces where strong partnerships could be formed. Develop strategies for keeping members engaged in the work of the Primary Prevention Program, such as setting developing strategic plans, implementing time-limited projects that give members concrete tasks and ownership, and providing opportunities for members to assume leadership roles.

6. Assist partner organizations, such as community-based organizations and universities, in pursuing funding opportunities for non-governmental organizations to assist with local lead poisoning prevention efforts.
7. Strengthen the use of data in order to link lead poisoning prevention and its impact to broader community concerns. These include, but are not limited to: the costs and benefits of lead poisoning prevention on health, housing quality, housing values, energy savings, community development, and job growth; and the consequences of lead poisoning for the education system, the health system, and for children, families, and entire communities.

Promoting interventions to create lead-safe housing units:

1. Continue to reduce delays in remediation by making program operations more efficient and exploring additional administrative strategies, such as housing courts, or agreements with local code enforcement offices, prosecutors, and judges.
2. Understand and address property owner and resident resistance to inspections and remediation.

Building lead-safe workforce practice capacity:

1. Continue to make LSWP training attractive to contractors and property owners by using incentives, scheduling training at convenient times, and building community demand for these services.
2. Improve relationships with EPA to ensure accurate information about and appropriate enforcement of the RRP Rule.
3. Identify partnership opportunities to shift the costs and management of LSWP training to other qualified local agencies.
4. Continue to explore opportunities for training code enforcement officials through the continuing education process.

Identifying community resources for lead-hazard control:

1. Increase coordination with public and private housing programs and providers that fund or require lead-related repairs.
    a. Establish agreements to give units identified by Primary Prevention high priority in funding with agencies that administer Community Development Block Grants (CDBG), Housing Choice Vouchers (Section 8), weatherization, and other state- and federally-funded programs.

    b. Approaching local housing programs, community development corporations, and lenders about establishing a "one-stop shopping" site for grant and loan programs that can fund lead hazard reduction for rental and owner-occupied units.

2. Identify and actively seek out opportunities to diversify financial resources. This includes exploring funding from local philanthropic organizations.
3. Identify and actively seek out opportunities to diversify and increase non-financial resources, including but not limited to: leveraging other programs and service systems, partnerships with colleges and universities; hosting fellows from national organizations such as the Centers for Disease Control and Prevention; and developing partnerships to shift LSWP and RRP training capacity to local community colleges and vocational schools.
4. Explore opportunities for generating or increasing revenue internally through permits, fines and other fee structures.

APPENDIX A – SAMPLE OF FEEDBACK SOUGHT FROM GRANTEES ON DATA COLLECTION SYSTEM REVISIONS

To: Primary Prevention Grantees
From: NCHH and NYSDOH
Re: Instructions for Feedback on Data Collection System Revisions
Date: February 28, 2011

Dear Primary Prevention Grantees,

We are writing to you because we would like your feedback on the revisions to the Primary Prevention data collection system--the Unit Tracking Form in Access and the Quarterly Reports. Our overall goals in making these changes are to:

4. Respond to the feedback we heard at the grantee meeting in September 2010;
5. Improve the data collected in the Unit Tracking Form to better reflect the varying strategies and program models that different grantees are using;
6. Reduce the amount of time it takes to complete the quarterly report.

The following summarizes the major changes in the proposed system:

7. Removal of skip patterns in the Access database to allow grantees to enter data in any field at any time;
8. Additional information on which agency is conducting inspection activities to better reflect the diversity of partnerships Primary Prevention Programs have developed;
9. Additional information on the location and type of hazards identified, including clarifying that "potential" hazards are those identified through visual inspection alone;
10. Ability for grantees to report orders to remediate and clearance of potential hazards;
11. Additional information on the status of each unit in the Primary Prevention database in order to identify which cases are active and which are closed;
12. Separation of the Quarterly Report into Part A (unit data submitted by running unit reports in Access) and Part B (additional information on training, outreach, and media activities).

Here are the next key steps in implementing the new data collection system:

1. Getting your feedback about the draft document;
2. Discussing your feedback with Ken, Steve, and Kelly, and revising the forms as needed;
3. Having all grantees send their current database to NCHH, where we will transfer all the data to the new database;
4. Providing training on the new database through a webinar (tentatively scheduled for April 7th, 2011).

5. Sending the revised database back for each grantee to start entering new data and, to the extent it is feasible, adding the new information for housing units that had been entered under the old system.

You have been provided with a packet of information that contains the following draft documents:

1. Revised Unit Tracking Form and the old Unit Tracking Form;
2. Revised Unit Reports that will be generated from the data entered into Access (these will be Part A of the new Quarterly Report); and
3. Revised Part B of the Quarterly Report and accompanying instructions.

It is important for all field and office staff involved with the details of producing, assembling, entering, generating and using the Primary Prevention data to participate in this review and have the opportunity to provide feedback. **We would like, however, to receive one set of consolidated comments from your program.** In order to help you obtain feedback from multiple staff members, we have included the online survey questions in Attachment A on the following page of this document so that you can print and distribute it to staff members. Please use the following online survey to give us the consolidated feedback from your program:

https://www.surveymonkey.com/s/Primary_Prevention_Data_Collection
Remember that the final version of the Unit Tracking Form will be in Access rather than in this Word format. The Unit Reports that summarize housing unit data will be generated directly from Access.

Please review these changes this week and provide feedback by 5 p.m. on Friday, March 4th. We sincerely appreciate your time and feedback in reviewing these changes.

Sincerely,
NCHH and NYSDOH

ATTACHMENT:
ONLINE SURVEY QUESTIONS

Housing Unit Data in Access

Step 1: Compare the old and new Unit Tracking Forms and consider the following questions:

1. How well does the new form capture the most important information about your program?
2. Has anything been removed from the old form that you think should still be included? If so, what is it?
3. Is there something new that you are particularly glad to see included? If so, what is it?
4. How clear are the questions and instructions in the new form? What needs more explanation or clarification?
5. How clear are the definitions in the new form?
6. How clear are the instructions in the new form?
7. Are there specific data elements in the new form that will be difficult for you to report? If so, what are they?

Quarterly Report

Examine the unit reports from Access, which will constitute Part A of the Quarterly Report form, and consider the following questions:

1. Do you have any specific questions about what will be in each unit report? If so, what are they?
2. Will these reports be more or less useful to you in understanding and managing your program than the previous reports were?
3. Will these reports be more or less useful to the state in reviewing your program?
4. Do you prefer the new plan of having you print the unit reports and send them to the state or would you prefer to print the reports and transfer all the numbers by hand to tables in the Quarterly Report?
5. Do you anticipate having any problems in printing the unit reports from Access and sending them along with Part B of the Quarterly Report? If so, what do you think they will be? What assistance could NCHH provide to help you?

Examine Part B of the Quarterly Report form and consider the following questions;

1. The cover sheet for Part B is Unit Report A from Access. It provides a summary of key information about your program. How useful do you think this brief summary will be? For you? For the State?
2. You will be asked to save Unit Report A in Word format in order to include it as the cover page for Part B. Do you anticipate having any difficulty doing that? If so, please indicate what assistance NCHH might be able to provide to help you.
3. How well does the new form capture the most important information about your program?
4. Has anything been removed from the form that you think should still be included? If so, what is it?

5. Is there something new that you are particularly glad to see included? If so, what is it?
6. How clear are the instructions? Please identify any specific instructions that are unclear or confusing to you.
7. How clear are the definitions? Please identify any specific definitions that are unclear or confusing to you.
8. How useful do you think the narrative in the new Quarterly Report will be? For you? For the State?
9. Will the new report be harder or easier for you to complete than the old report was?

APPENDIX B – GRANTEE IMPACT SUMMARIES, 2007-2011

[The remainder of this page was left intentionally blank. The Grantee Impact Summaries begin on the following page.]

Albany County Department of Health
Childhood Lead Primary Prevention Program Summary

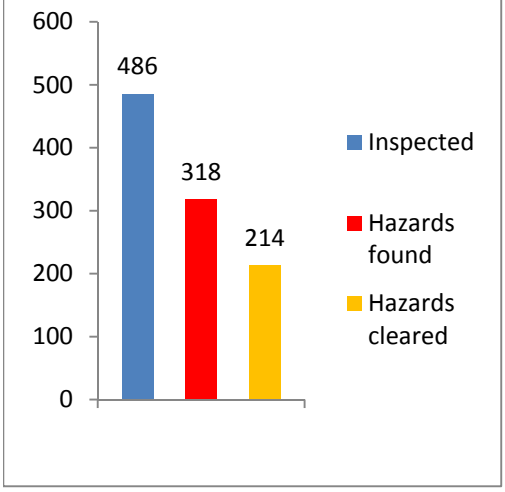
Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 52 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Albany County. This number represents an incidence rate of 12.3 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint hazards and removing them before children are exposed.

Program results

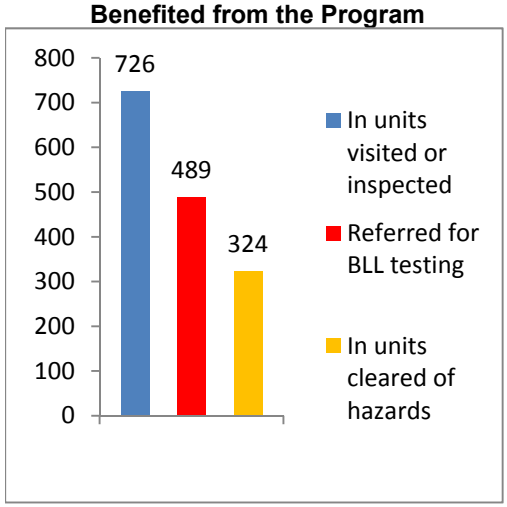
Between 2007 and the end of September 2011, the Albany program inspected 486 homes and identified lead-based paint hazards in 318 of these homes. Its efforts have already made 214 housing units lead-safe (see figure 1).

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011



The program makes a significant difference in the lives of children and their families in Albany. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Fig. 2. Number of Children Who Directly Benefited from the Program



Since 2007, the program has worked with property owners to remove lead-paint hazards from housing units in which 324 children lived, and it referred 489 children for tests of their blood lead levels (see figure 2). The program visited or inspected housing units in which a total of 726 children lived.

The homes visited were primarily renter-occupied units in older, multi-family buildings. Renters lived in 90% of the units, 92% were built prior to 1940, and 86% were in multi-family buildings (67% were in 2-unit buildings).

Housing units targeted for inspection

Albany County has identified a specific target area--zip codes 12202, 12206, 12208, 12209 and 12210 located in the city of Albany—for its program focus. Within these zip codes, the program targets the highest-risk properties, including but not limited to homes of at-risk newborns and pregnant women; homes of resettled refugees; units where children with blood lead levels between 5-9 or 10-14 mcg/dL reside or units adjacent to them; units with a history of children with elevated blood lead levels or other units in the same building; and vacant, foreclosed properties. The program also inspects properties because of referrals from partner agencies or requests from owners or tenants and units identified through door-to-door canvassing.

Inspection procedures

An EPA-certified Risk Assessor from the county performs a visual inspection of painted surfaces in the individual unit, common areas, and exterior of the building. If necessary, the Risk Assessor uses an XRF (X-Ray Fluorescence) machine to measure the concentration of lead on painted surfaces. The Assessor may also take soil samples or wipe surfaces to collect dust to analyze its lead concentration. Residents receive educational materials and cleaning products as incentives to encourage their participation.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. Albany County works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2007, the program has funded training for 1,218 individuals on how to conduct repairs safely.

Program Contact: Steve VanWormer, Public Health Technician | Phone: 518-447-4625 | E-Mail: ernest.vanwormer@albanycounty.com

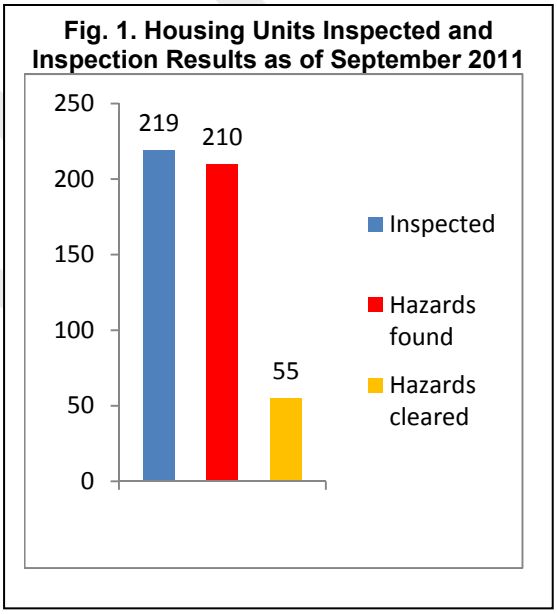
Broome County Department of Health
Childhood Lead Primary Prevention Program Summary

Program description

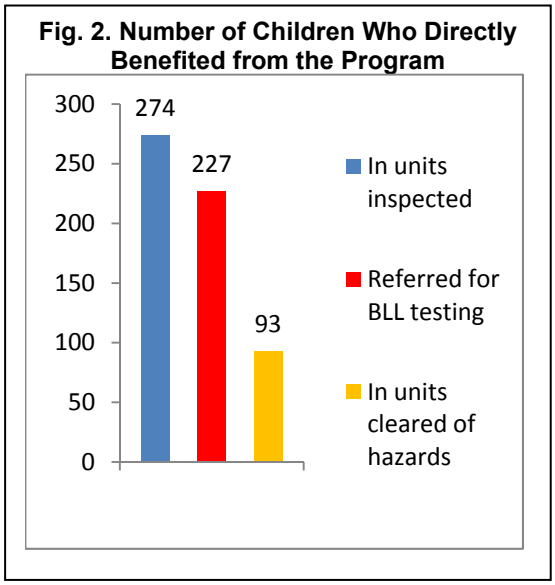
Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 21 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Broome County. This number represents an incidence rate of 8.2 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed to them.

Program results

Between 2008 and the end of September 2011, the Broome program inspected 219 homes and identified lead-based paint hazards in 210 of these homes. Its efforts have already made 55 housing units lead-safe (see figure 1.)



The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.



Since 2008, the program has worked with property owners to remove lead-paint hazards from housing units in which 93 children lived, and it referred 227 children for tests of their blood lead levels (see figure 2). The program inspected housing units in which a total of 274 children lived.

The homes visited were primarily renter-occupied units in older, multi-family buildings. Renters lived in 72% of the units, 75% were built prior to 1940, and 87% were in multi-family buildings (53% were in buildings with 3 or more units).

Housing units targeted for inspection

Broome County's program targets all parts of zip code 13905 that lie within the City of Binghamton. Housing units outside that area are inspected only if they are referred by the Childhood Lead Poisoning Prevention Program. The program targets the highest-risk properties, including but not limited to homes of at-risk newborns or pregnant women; units where children with blood lead levels between 5-9 or 10-14 mcg/dL reside or units adjacent to them; and vacant, foreclosed properties. The program also inspects properties because of referral from Healthy Neighborhoods Program and/or Maternal and Child Health Home Visiting programs or code enforcement agencies, requests from owners or tenants, and observations of deteriorated exterior paint.

Inspection procedures

The program's inspection protocol consists of exterior and interior visual inspection as well as XRF (X-Ray Fluorescence) measurement of lead on painted household surfaces in some units. Inspectors also provide educational materials and incentives such as cleaning products to encourage residents' cooperation.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2008, the program has funded training for 285 individuals on how to conduct repairs safely.

Program Contact: Barbara West, Program Coordinator | Phone: 607-778-2850 | E-Mail: bwest@co.broome.ny.us

Chautauqua County Department of Health
Childhood Lead Primary Prevention Program Summary

Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 19 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Chautauqua County. This number represents an incidence rate of 8.2 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed to them.

Program results

Between 2008 and the end of September 2011, the Chautauqua program inspected 235 homes and identified lead-based paint hazards in 213 of these homes. Its efforts have already made 95 housing units lead-safe (see figure 1).

The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2008, the program has worked with property owners to remove lead-paint hazards from housing units in which 111 children lived, and it referred 40 children for tests of their blood lead levels (see figure 2). The program visited or inspected housing units in which a total of 321 children lived.

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011

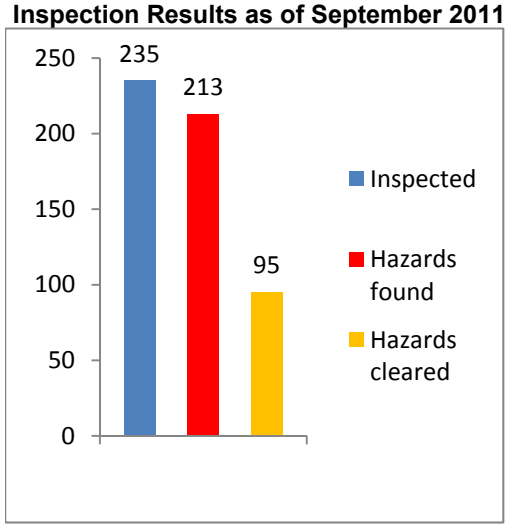
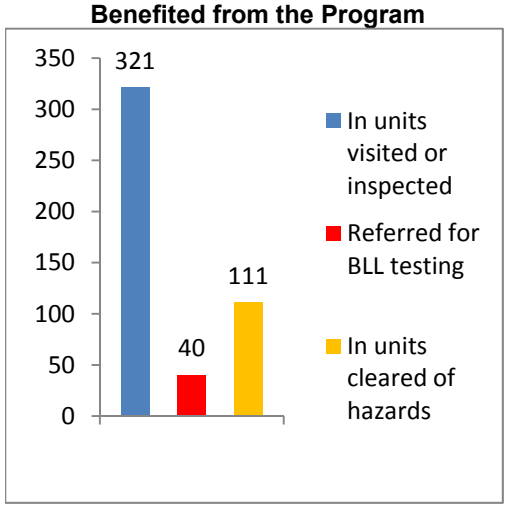


Fig. 2. Number of Children Who Directly Benefited from the Program



The homes visited were primarily renter-occupied units in older buildings. Renters lived in 73% of the units, and 93% were built prior to 1940. The majority were either single-family homes (38%) or in 2-unit buildings (44%).

Housing units targeted for inspection

The program's target area is the City of Jamestown. Within the city, the program targets the highest-risk properties, including but not limited to homes of at-risk newborns and pregnant women; units where children with blood lead levels between 5-9 or 10-14 mcg/dL reside or units adjacent to them; units with a history of children with elevated blood lead levels or other units in the same building; and vacant, foreclosed properties. The program also inspects properties because of referrals from partner agencies or code enforcement or requests from owners or tenants and units identified through door-to-door canvassing.

Inspection procedures

The program's inspection protocol includes exterior and interior visual assessments and XRF (X-Ray fluorescence) measurement as well as a risk assessment. At least one wall, one window, and one door in each room are tested for lead paint using an XRF machine. The exterior and entryways are also tested with the XRF. If there is no interior lead paint but exterior lead paint is found, dust wipe samples are taken to determine if exterior dust is entering the home. The program generates a report of all areas that tested positive and sends it to the owner and/or tenant with a letter of notice and information. Inspectors also give residents educational materials and incentive packages to encourage cooperation.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2008, the program has funded training for 155 individuals on how to conduct repairs safely.

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Dutchess County Department of Health
Childhood Lead Primary Prevention Program Summary

Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 28 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Dutchess County. This number represents an incidence rate of 5.3 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint hazards and removing those hazards before children are exposed to them.

Program results

Between 2008 and the end of September 2011, the Dutchess program inspected 681 homes and identified lead-based paint hazards in 374 of these homes. Its efforts have already made 24 housing units lead-safe (see figure 1).

The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2008, the program has worked with property owners to remove lead-paint hazards from housing units in which 8 children lived, and it referred 38 children for tests of their blood lead levels (see figure 2). The program inspected housing units in which a total of 62 children lived.

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011

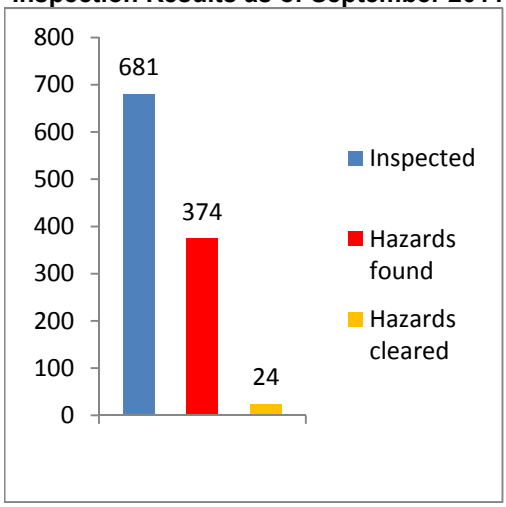
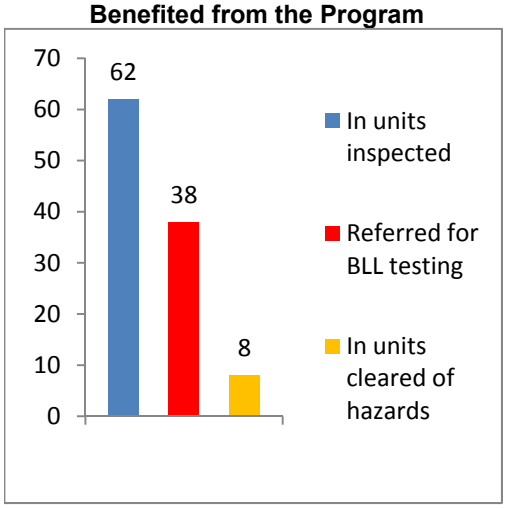


Fig. 2. Number of Children Who Directly Benefited from the Program



Although the homes visited were similar in being predominantly older homes (90% were built prior to 1940), they represented a range of occupancy conditions and building types. About half (52%) were renter-occupied; the others were owner-occupied (18%) or vacant (29%). The majority (80%) were in multi-family buildings, while 20% were single-family units.

Housing units targeted for inspection

The program's target area is that portion of the City of Poughkeepsie within the 12601 zip code. Within this area, the program gives more emphasis to housing units that are in multi-family buildings built before 1978. Units targeted for inspection are primarily those identified by code enforcement for inspections funded or deputized by LPPP. The program also may refer properties to code enforcement for inspection on the basis of referral from community partners, requests from owners or tenants, and program staff's observations of deteriorated exterior paint.

Inspection procedures

The program's inspections are all conducted by a City of Poughkeepsie Building Inspector, who primarily uses housing complaint and building permit inspections to select residences for visual assessments. The Inspector conducts a visual inspection of all accessible interior and exterior areas and determines whether paint conditions and dust conditions are in compliance with the New York State property maintenance code. The Inspector is responsible for all follow-up inspections until compliance is met. The Dutchess County Department of Health reviews the lead dust clearance tests and notifies the City of Poughkeepsie whether the results meet current standards.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. Dutchess County works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2008, the program has funded training for 401 individuals on how to conduct repairs safely.

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Erie County Department of Health
Childhood Lead Primary Prevention Program Summary

Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 328 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Erie County. This number represents an incidence rate of 17.2 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed to them.

Program results

Between 2007 and the end of September 2011, the Erie program inspected 3,126 homes and identified lead-based paint hazards in 2,346 of them. Its efforts have already made 1,344 housing units lead-safe (see figure 1).

The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. . Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2007, the program has worked with property owners to remove lead-paint hazards from housing units in which 207 children lived, and it referred 210 children for tests of their blood lead levels (see figure 2). The program visited or inspected housing units in which a total of 753 children lived.

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011

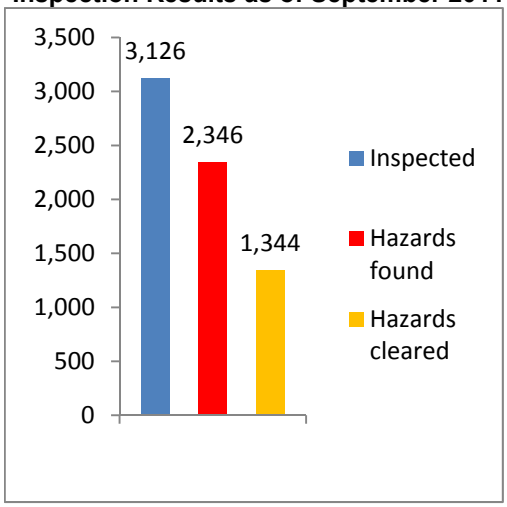
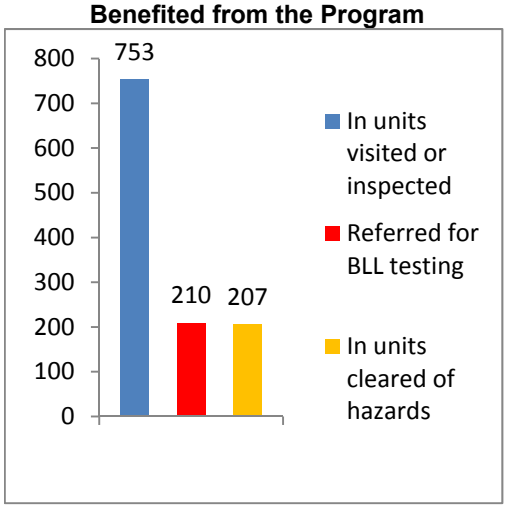


Fig. 2. Number of Children Who Directly Benefited from the Program



The program visited about equal numbers of homes that were owner-occupied and renter-occupied (45% and 49% respectively) and single-family compared with multi-family (47% and 53%). Almost all (98%) were built prior to 1940.

Housing units targeted for inspection

Within Erie County, the program operates in those areas within the zip codes 14215, 14213, 14212, 14211, 14209, 14208, 14207 and 14201 that the Erie County Commissioner of Health has designated as an "area of high risk." Within the areas of high risk, individual units are identified for inspection through neighborhood surveys and through referrals indicating units in which children with blood lead levels between 5-9 or 10-14 mcg/dL (or both) reside or units adjacent to them.

Inspection procedures

Program staff go block-by-block surveying the building characteristics, physical condition and occupancy status of each housing unit. Staff assess the exterior of each housing structure with an XRF (X-Ray Fluorescence) machine to measure the concentration of lead on painted surfaces. In conjunction with the exterior risk assessment, staff try to identify and gain access to units where young children reside. Upon gaining access, they assess the paint condition of the interior of the dwelling unit, educate the resident about lead poisoning and ways to protect their family, determine if all children have received blood lead level testing, and provide cleaning supplies to help ensure a lead-safe environment.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2007, the program has funded training for 801 individuals on how to conduct repairs safely.

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Monroe County Department of Health
Childhood Lead Primary Prevention Program Summary

Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 204 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Monroe County. This number represents an incidence rate of 14.9 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed.

Program results

Between 2007 and the end of June 2011, the Monroe program inspected 7,109 homes and identified lead-based paint hazards in 1,078 of them. It visited without inspecting an additional 628 homes. Its efforts have already made 725 housing units lead-safe (see figure 1.)

The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2007, the program has worked with property owners to remove lead-paint hazards from housing units in which 177 children lived, and it referred 233 children for tests of their blood lead levels (see figure 2). The program visited or inspected housing units in which a total of 687 children lived.

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011

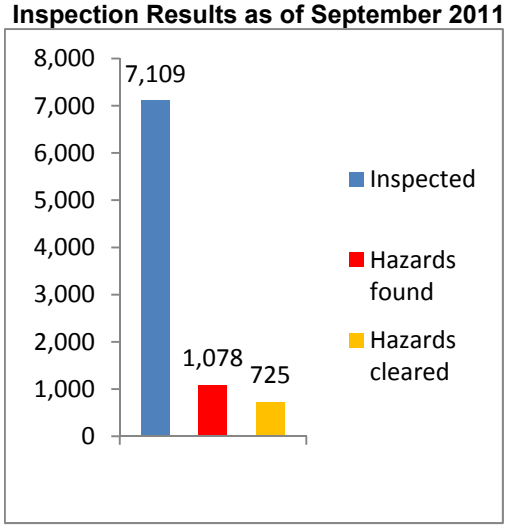
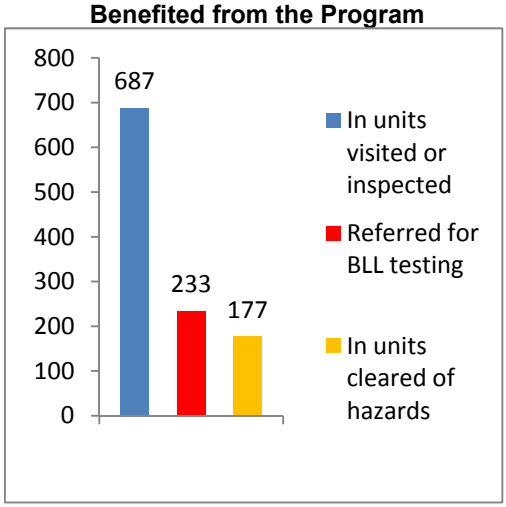


Fig. 2. Number of Children Who Directly Benefited from the Program



The homes visited were primarily renter-occupied units in older, multi-family buildings. Renters lived in 94% of the units, 87% were built prior to 1940, and two-thirds of the homes were in multi-unit buildings (31% were in 2-unit buildings and 35% were buildings with 3 or more units).

Housing units targeted for inspection

The area of concern is the following high-risk zip codes within the City of Rochester: 14604, 14605, 14606, 14607, 14608, 14609, 14610, 14611, 14612, 14613, 14614, 14615, 14619, 14620 and 14621. Within these areas, most properties are identified and inspected by City of Rochester code enforcement officers with funding provided by the program: 93% of all properties inspected since the program began were inspected by code enforcement. Other properties are targeted for inspection by the program itself. These include homes of pregnant women, units with children with blood lead levels between 10 and 14 mcg/dL and adjacent units, homes of refugees, and licensed group family day care homes and family day care homes.

Inspection procedures

Code enforcement officers conduct a visual inspection for deteriorated paint above de minimis levels on the interior and exterior and on bare soil if it is found. They do additional dust wipe sampling in all units that pass the initial visual inspection. At properties inspected by the program itself, EPA-certified risk assessors inspect the properties that are targeted as described above. These inspections use elevated blood lead protocols, including visual inspection and XRF (X-Ray Fluorescence) measurement of lead on painted household surfaces.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2007, the program has funded training for 1,110 individuals on how to conduct repairs safely.

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Niagara County Department of Health
Childhood Lead Primary Prevention Program Summary

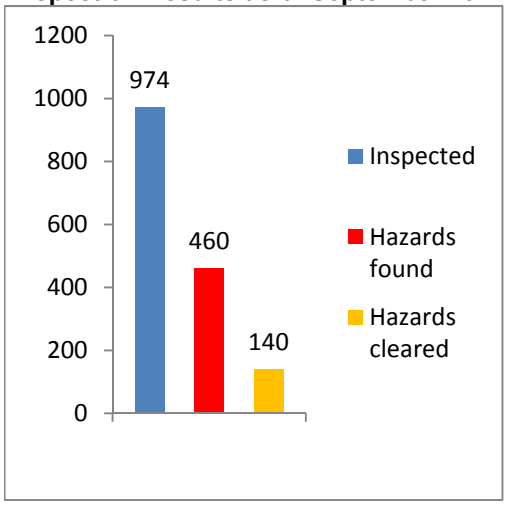
Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 37 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Niagara County. This number represents an incidence rate of 9.4 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed to them.

Program results

Between 2009 and the end of September 2011, the Niagara program inspected 974 homes and identified lead-based paint hazards in 460 of them. Its efforts have already made 140 housing units lead-safe (see figure 1.)

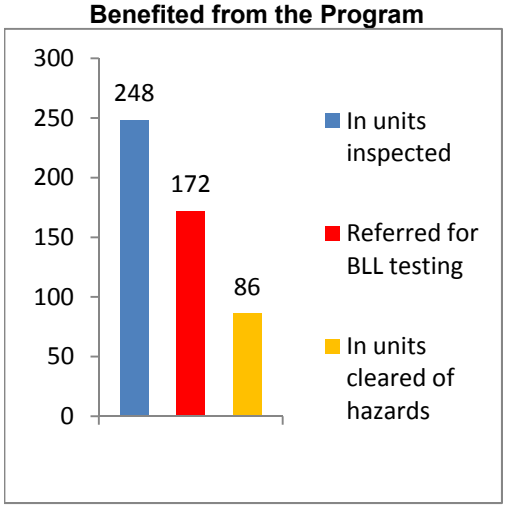
Fig. 1. Housing Units Inspected and Inspection Results as of September 2011



The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2009, the program has worked with property owners to remove lead-paint hazards from housing units in which 86 children lived, and it referred 172 children for tests of their blood lead levels (see figure 2). The program inspected housing units in which a total of 248 children lived.

Fig. 2. Number of Children Who Directly Benefited from the Program



The homes visited were primarily in older buildings: 78% were built prior to 1940. Renters lived in slightly more than half (57%) of the units, and the majority of homes (61%) were single-family units. About one-fourth (26%) lived in 2-unit buildings.

Housing units targeted for inspection

Niagara County's program targets housing in the zip codes of 14301, 14303, and 14305 in the city of Niagara Falls, with a special emphasis on census tracts 202, 204, 205, 206, 209, 213, 212, 211. Within these areas, program staff (one Public Health Sanitarian and an Environmental Health Aide) canvass the neighborhood door-to-door. If there is no answer, staff make an exterior visual assessment. Housing units may also be identified for inspection because they are homes of at-risk newborns or pregnant women; homes of children with elevated blood-lead levels in the past or children with current blood lead levels between 5-9 or 10-14 mcg/dL or units adjacent to them; and units referred by Healthy Neighborhoods Program and/or Maternal and Child Health Home Visiting programs, code enforcement agencies, or other partner agencies. The program may also inspect in response to requests from owners or tenants.

Inspection procedures

The program has a two-stage inspection protocol. The first inspection is a visual survey for potential lead-based paint hazards. This is an exterior visual inspection and, if possible, an interior inspection. The program sends the owner of record a notice that includes a complete list of potential hazards in the dwelling and information about the program's incentives and educational opportunities. Compliance is voluntary at that point as no testing has been done. The letter is followed up by a telephone call within a week to ensure that a hazard removal plan is in place. If no plan is put in place or work is not completed in a timely, acceptable manner, program staff use an XRF (X-Ray Fluorescence) machine to measure the concentration of lead on painted surfaces. The program then sends a notice and demand that requires correction of all hazards identified. In some circumstances, staff also use dust wipe samples in inspections.a

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2009, the program has funded training for 120 individuals on how to conduct repairs safely.

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New York City Department of Health and Mental Health
Childhood Lead Primary Prevention Program Summary

Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 1,316 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in New York City. This number represents an incidence rate of 4.0 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed.

Program results

Between 2007 and the end of September 2011, the New York City program inspected 2,879 homes and identified lead-based paint hazards in 1,601 of them. It also visited an additional 147 units without conducting inspections. Its efforts have already made 1,378 housing units lead-safe (see Figure 1).

The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2007, the program has worked with property owners to remove lead-paint hazards from housing units in which 1,509 children lived, and it referred 3,026 children for tests of their blood lead levels (see figure 2). The program visited or inspected housing units in which a total of 3,293 children lived.

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011

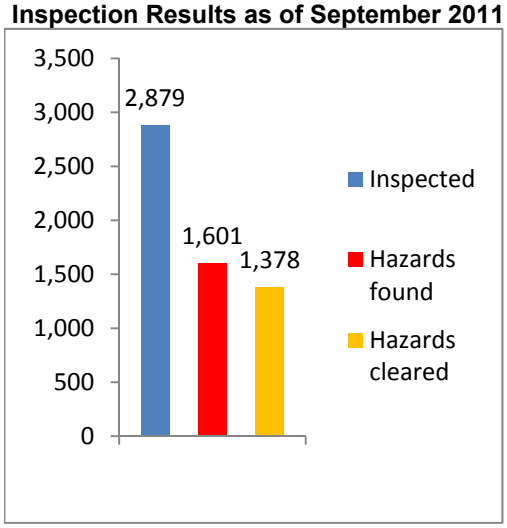
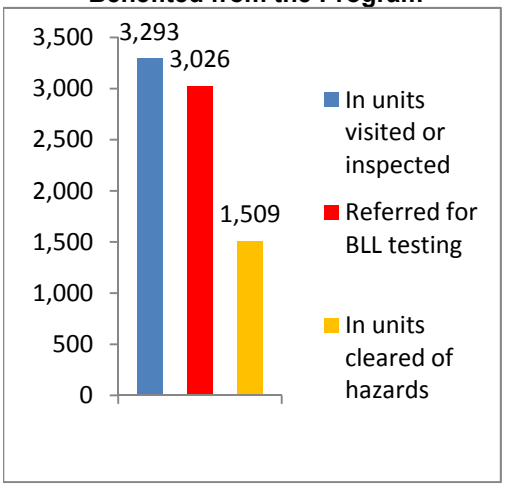


Fig. 2. Number of Children Who Directly Benefited from the Program



The homes visited were primarily renter-occupied units in older, multi-family buildings. All the units were occupied by renters, three-fourths of the buildings were built prior to 1940, and 81% of the buildings had three or more units.

Housing units targeted for inspection

The program is city-wide rather than targeted to specific geographical areas. It uses six strategies to identify the specific high-risk housing units:

- inspecting homes in response to referrals from the Newborn Home Visiting Program because of peeling paint in the newborn's home;
- inspecting in response to referrals for peeling paint in the homes of young children in the department's Asthma Initiative;
- using the city's blood lead registry and the birth registry to identify housing of children under 3 years of age with blood lead levels of 10-14 mcg/dL and newborns under 6 months of age living in the same building;
- identifying buildings where two or more Commissioner's Orders for lead paint violations have been cited in at least two apartments and the Orders have been closed for over a year and, in a building-wide canvass of those buildings, offering to conduct inspections in apartments where there is peeling paint and a child under 6 years of age;
- conducting inspections in the apartments of buildings that are being screened for forgivable loans from the HUD Lead Hazard Control grant; and
- responding to tenants' complaints of work that has disturbed painted surfaces and generated uncontained paint dust and debris in the apartments and common areas of residential buildings that house children less than 18 years of age.

Inspection procedures

Inspection procedures differ according to the strategy that led to a housing unit's inspection. In some units, an EPA-certified Risk Assessor from the program or the city's Department of Housing Preservation and Development administers a lead risk assessment questionnaire, conducts a visual inspection of all painted surfaces, conducts XRF testing of all peeling paint and painted window sills, looks for other environmental health hazards, and provides counseling and education on preventing lead poisoning and other health hazards. In other units, activities are limited to a visual inspection for peeling paint, a healthy homes inspection, and dust wipe sampling. Where unsafe work practices were reported, an inspector visits and, if unsafe work practices are observed, takes dust wipe samples from the floors and the window sills.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. New York City works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2007, the program has funded training for 1,745 individuals on how to conduct repairs safely.

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Oneida County Department of Health
Childhood Lead Primary Prevention Program Summary

Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 105 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Oneida County. This number represents an incidence rate of 29.1 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint hazards and removing them before children are exposed.

Program results

Between 2007 and the end of September 2011, the Oneida program inspected 1,362 homes and identified lead-based paint hazards in 510 of them. Its efforts have already made 310 housing units lead-safe (see figure 1).

The program makes a significant difference in the lives of children and their families in Oneida. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2007, the program has worked with property owners to remove lead-paint hazards from housing units in which 521 children lived, and it referred 555 children for tests of their blood lead levels (see figure 2). The program inspected housing units in which a total of 1,003 children lived.

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011

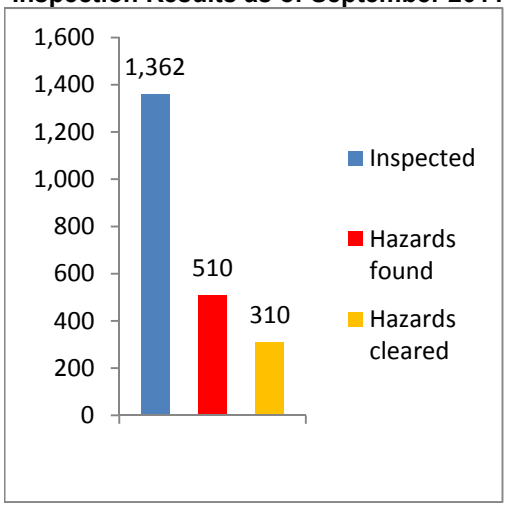
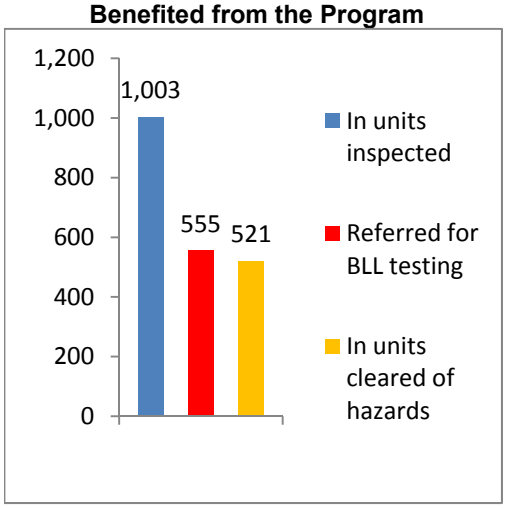


Fig. 2. Number of Children Who Directly Benefited from the Program



The homes visited were primarily renter-occupied units in older, multi-family buildings. Renters lived in 75% of the units, 87% were built prior to 1940, and 83% of the units were in multi-family buildings (59% were 2-unit buildings).

Housing units targeted for inspection

The Oneida County program targets census tracts and block groups in the 13501 and 13502 zip codes in the City of Utica. Within those areas, the program sub-targets houses with newborns and newly arrived refugees with children under age 7, families with children under 6 with blood lead levels of 10-14 mcg/dL (and levels of 5-9 mcg/dL if staffing permits), and units with a history of children with elevated blood lead levels or other units in the same building. The program also inspects properties because of referrals from partner agencies or code enforcement or requests from owners or tenants.

Other units are identified by code enforcement agencies for their inspections funded or deputized by the program. Over half (54%) of all inspections since the program began have been conducted by code enforcement agencies.

Inspection procedures

When inspections are conducted by program staff, the initial inspection consists of an interior and exterior visual inspection and dust wipe sampling. The inspector also completes a floor plan showing the location of hazards. In a first home visit, a home visitation worker provides extensive education on lead hazards and lead poisoning prevention and cleaning supplies. At a second visit, the worker reviews the results of the dust testing and encourages use of a HEPA vacuum until any needed remediation work can be completed.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. Oneida County works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2007, the program has funded training for 411 individuals on how to conduct repairs safely. Oneida County partners with Mohawk Valley Community College (MVCC) to offer Renovation, Repair and Painting (RRP) classes at its two main campuses and three other locations throughout the county. Classes are advertised in mailed college brochures and advertised jointly by the college and the Primary Prevention program. To accommodate the training needs of neighboring Herkimer County, MVCC also offers the same course at the Herkimer Community College campus several times per year as part of this partnership.

Program Contact: Catherine Bullwinkle, Quality Improvement Coordinator/Lead Primary Prevention Project Manager | Phone: 315-798-5275 | E-Mail: cbullwinkle@ocgov.net

Onondaga County Department of Health
Childhood Lead Primary Prevention Program Summary

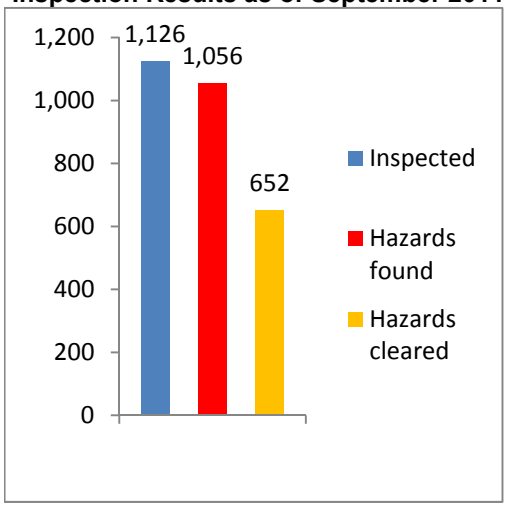
Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 125 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Onondaga County. This number represents an incidence rate of 11.6 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed.

Program results

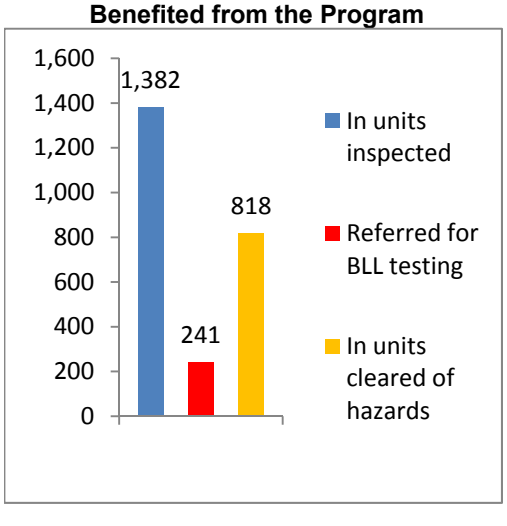
Between 2007 and the end of September 2011, the Onondaga program inspected 1,126 homes and identified lead-based paint hazards in 1,056 of these homes. Its efforts have already made 652 housing units lead-safe (see figure 1.)

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011



The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Fig. 2. Number of Children Who Directly Benefited from the Program



Since 2007, the program has worked with property owners to remove lead-paint hazards from housing units in which 818 children lived, and it referred 241 children for tests of their blood lead levels (see figure 2). The program inspected housing units in which a total of 1,382 children lived.

The homes visited were primarily renter-occupied units in older, multi-family buildings. Renters lived in 90% of the units, 90% were built prior to 1940, and 76% of the units were in multi-family buildings (51% were buildings with 2 units).

Housing units targeted for inspection

Onondaga County's program targets the entire City of Syracuse, with the following zip codes designated as the highest risk areas: 13202, 13203, 13204, 13205, 13207, 13208, 13210 and 13224. The program targets the highest-risk properties, including but not limited to, homes of at-risk newborns or pregnant women; units where children with blood lead levels between 5-9 or 10-14 mcg/dL reside or units adjacent to them; units with a history of elevated blood lead cases or other units in the same building; rental units occupied by resettled refugees or DSS-funded or Section 8-funded recipients; and properties that have been cited at least twice in the past and still have the potential for recurrent lead hazards. The program also inspects properties because of referral from Healthy Neighborhoods Program and/or Maternal and Child Health Home Visiting programs, other partner agencies, or code enforcement agencies; requests from owners or tenants; observations of deteriorated exterior paint; and identification through door-to-door canvassing.

Inspection procedures

Some inspections are initiated by the program on the basis of information it already has about a unit or its residents, as noted above. For others, program staff conduct telephone surveys with a parent or caregiver to determine if the property meets risk criteria of (1) a child age 6 or under resides or regularly visits or a pregnant woman resides at the property, (2) property was built before 1950, (3) chipping and peeling paint has been observed, (4) property is located in the target area, and (5) it is a rental property. If determined eligible, an environmental team member then conducts an on-site lead hazard risk assessment. Risk assessments consist of exterior and interior visual inspection, an XRF (X-Ray Fluorescence) measurement of the concentration of lead on painted surfaces, and confirmatory dust wipe sampling in units with negative XRF results to confirm the XRF reading. If lead-based paint hazards are confirmed, the environmental team member conducts a brief lead dust cleaning demonstration and leaves a package of wet wipes with the tenant. At the discretion of the environmental inspection team, renters who are pregnant and parents of infants under 6 months of age may be referred to the public health education team for additional services.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2007, the program has funded training for 556 individuals on how to conduct repairs safely.

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Orange County Department of Health
Childhood Lead Primary Prevention Program Summary

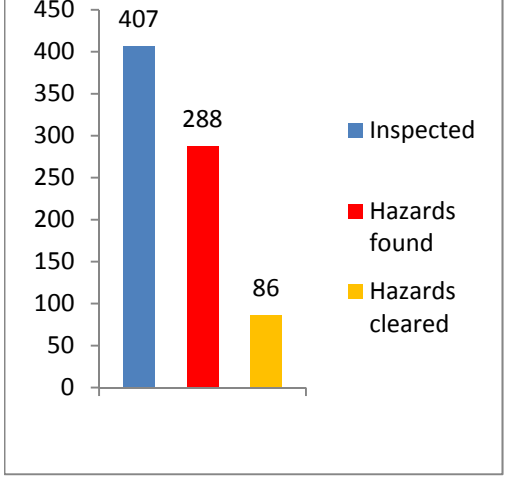
Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 90 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Orange County. This number represents an incidence rate of 11.5 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed.

Program results

Between 2007 and the end of September 2011, the Orange County program inspected 407 homes and identified lead-based paint hazards in 288 of them. Its efforts have already made 86 housing units lead-safe (see figure 1.)

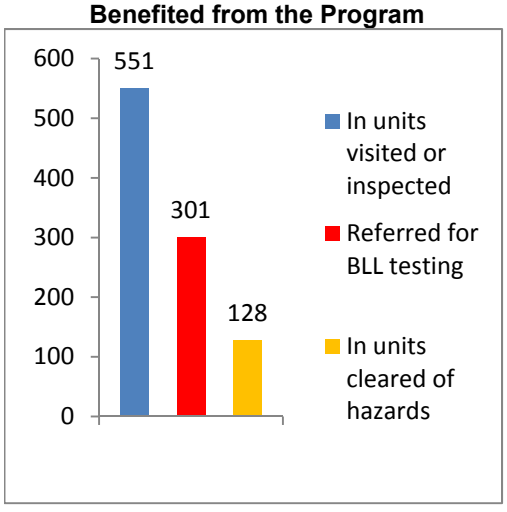
Fig. 1. Housing Units Inspected and Inspection Results as of September 2011



The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2007, the program has worked with property owners to remove lead-paint hazards from housing units in which 128 children lived, and it referred 301 children for tests of their blood lead levels (see figure 2). The program visited or inspected housing units in which a total of 551 children lived.

Fig. 2. Number of Children Who Directly Benefited from the Program



The homes visited were primarily renter-occupied units in older, multi-family buildings. Renters lived in 88% of the units, 89% were built prior to 1940, and 84% of units were in multi-family buildings (50% were in buildings with 3 or more units).

Housing units targeted for inspection

Orange County's target areas are census tracts 3, 4, and 5 in the City of Newburgh and census tracts 11, 12, and 14 in the City of Middletown. The program targets the highest-risk properties, including, but not limited to, homes of at-risk newborns or pregnant women; units where children with blood lead levels between 5-9 or 10-14 mcg/dL reside or units adjacent to them; units with a history of elevated blood lead cases or other units in the same building; and rental units occupied by DSS-funded or Section 8-funded recipients. The program also inspects properties because of referral from Healthy Neighborhoods Program and/or Maternal and Child Health Home Visiting programs, other partner agencies, or code enforcement agencies; requests from owners or tenants; observations of deteriorated exterior paint; and identification through door-to-door canvassing. In coordination with the county's Childhood Lead Poisoning Prevention Program, the program prioritizes streets where the greatest numbers of children with blood lead levels ≥ 10 mcg/dL reside.

Inspection procedures

The risk assessment protocol consists of exterior and interior visual inspection and an XRF (X-Ray Fluorescence) measurement of the concentration of lead on painted surfaces. The program also provides educational materials and incentives to encourage residents' participation.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2007, the program has funded training for 180 individuals on how to conduct repairs safely.

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Rensselaer County Department of Health
Childhood Lead Primary Prevention Program Summary

Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 25 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Rensselaer County. This number represents an incidence rate of 10.0 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed.

Program results

Between 2009 and the end of September 2011, the Rensselaer program inspected 187 homes and identified lead-based paint hazards in 159 of them. Its efforts have already made 82 housing units lead-safe (see figure 1.)

The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2009, the program has worked with property owners to remove lead-paint hazards from housing units in which 68 children lived, and it referred 138 children for tests of their blood lead levels (see figure 2). The program visited or inspected housing units in which a total of 178 children lived.

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011

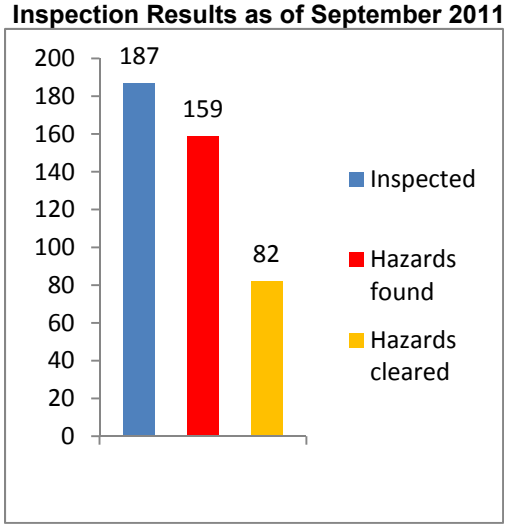
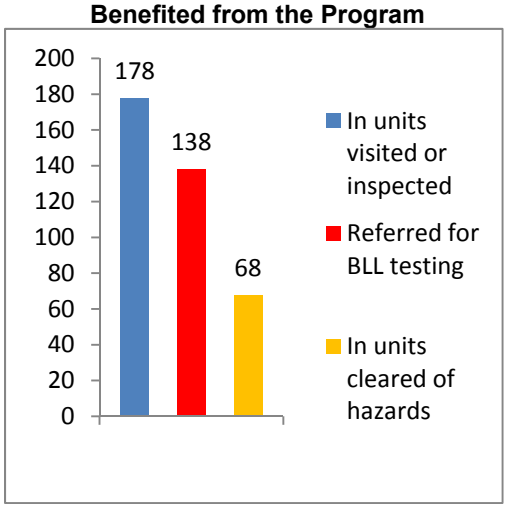


Fig. 2. Number of Children Who Directly Benefited from the Program



The homes visited were primarily renter-occupied units in older, multi-family buildings. Renters lived in 62% of the units, 84% were built prior to 1940, and 69% of the units were in multi-family buildings.

Housing units targeted for inspection

Rensselaer County's target area is the City of Troy, including zip codes 12180 and 12182. The program defines its primary target group as residential homes within the target areas, built before 1980, with a resident child 17 years or younger, regardless of blood-lead level. It gives highest priority to homes of children with a confirmed blood lead level between 5 and 14 mcg/dL.

The program also conducts inspections in conjunction with the Childhood Lead Poisoning Prevention Program (CLPPP), in that this program inspects housing units before a child referred by CLPPP moves into it. Other units targeted for inspection include, but are not limited to, homes of at-risk newborns or pregnant women and units with a history of elevated blood lead cases or other units in the same building. The program also inspects properties because of referral from Healthy Neighborhoods Program and/or Maternal and Child Health Home Visiting programs, other partner agencies, or code enforcement agencies; requests from owners or tenants; observations of deteriorated exterior paint; and identification through door-to-door canvassing.

Inspection procedures

Most inspections are conducted by EPA-certified staff of the Rensselaer County Cornell Cooperative Extension under a contract with the program. The risk assessment protocol consists of exterior and interior visual inspection, an XRF (X-Ray Fluorescence) measurement of the concentration of lead on painted surfaces, dust wipe sampling, and soil sampling. The program also provides educational materials and incentives to encourage residents' participation.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2009, the program has funded training for 618 individuals on how to conduct repairs safely.

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Schenectady County Department of Health
Childhood Lead Primary Prevention Program Summary

Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 18 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Schenectady County. This number represents an incidence rate of 7.4 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed.

Program results

Between 2008 and the end of September 2011, the Schenectady program inspected 156 homes and identified lead-based paint hazards in 124 of them. Its efforts have already made 86 housing units lead-safe (see figure 1.)

The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Since 2008, the program has worked with property owners to remove lead-paint hazards from housing units in which 117 children lived, and it referred 63 children for tests of their blood lead levels (see figure 2). The program visited or inspected housing units in which a total of 205 children lived.

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011

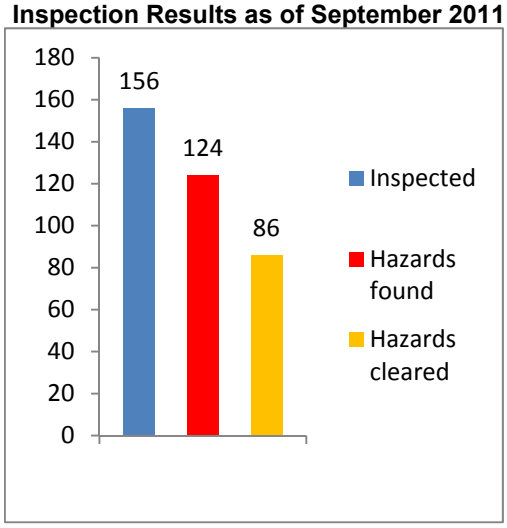
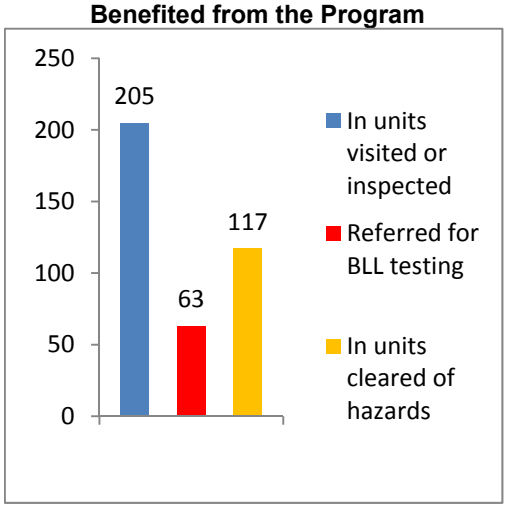


Fig. 2. Number of Children Who Directly Benefited from the Program



The homes visited were primarily renter-occupied units in older, multi-family buildings. Renters lived in 88% of the units, 95% were built prior to 1960 (59% were built before 1940), and 84% of them were units in multi-family buildings (71% were in 2-unit buildings).

Housing units targeted for inspection

Schenectady County's program targets properties in the 12307, 12308, 12303 and 12304 zip codes within the City of Schenectady. Within those areas, the program targets the highest-risk properties, including but not limited to homes of at-risk newborns or pregnant women; units where a child with a blood lead level greater than or equal to 10 mcg/dL resides or resided in the past and now have a child age six or younger, and units adjacent to them; and rental units occupied by refugees or recipients of DSS or Section 8 housing funds. The program also inspects properties because of referral from Healthy Neighborhoods Program and/or Maternal and Child Health Home Visiting programs or other partner agencies and requests from owners or tenants.

Inspection procedures

Either the program's EPA-certified Risk Assessors or staff members from community partner agencies (Schenectady Municipal Housing Authority's Section 8 Program and the Community Land Trust of Schenectady) conduct the inspections. Since the program began, about half (46%) have been conducted by program staff. Regardless of which agency's staff conduct the inspections, the protocol is the same. It consists of visual inspection as well as XRF (X-Ray Fluorescence) measurement of lead on painted surfaces. Exterior and interior painted surfaces within the unit as well as all common areas of the property are checked for lead hazards. Inspectors also provide educational materials to residents.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2008, the program has funded training for 503 individuals on how to conduct repairs safely.

Program Contact: Andrew Suflita, Environmental Health Director | Phone: 518-386-2818 | E-Mail: Andrew.suflita@schenectadycounty.com

Ulster County Department of Health
Childhood Lead Primary Prevention Program Summary

Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 29 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Ulster County. This represents an incidence rate of 10.1 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed.

Program results

The Ulster program began property inspections in the third quarter of the current program year (April through June 2011). By the end of September 2011, it had conducted three inspections. One inspection was conducted by program staff, and two were conducted by, or in cooperation with, their community partners, the Building Safety Division of the City of Kingston Fire Department and the nonprofit Rural Ulster Preservation Company (RUPCO). Two of the inspected units were occupied, and four children lived in those units. Two of the children lived in units with lead-based paint hazards. Three children were referred for tests of their blood-lead levels.

Once the program is fully operational, it will make a significant difference in the lives of children and their families. Some children will benefit directly because they live in homes in which hazards are found and removed. Others will be referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children will also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Housing units targeted for inspection

Ulster County's program targets the 12401 area code, an area known as Midtown Kingston. Priority is given to those dwellings in which children under six years of age and pregnant women reside. Other high-risk properties identified for inspection include, but are not limited to, properties that are referred by Maternal and Child Health Home Visiting programs, other partner agencies, or code enforcement agencies; properties for which owners or tenants have requested inspections; properties that have been identified by program staff through door-to-door canvassing or observations of deteriorated paint; rental units of recipients of DSS or Section 8 funds; and housing

units with a history of children with elevated blood-lead levels and other units in the same building and units in which children with blood-lead levels of 10-14 mcg/dL currently reside. Some housing units are also inspected at the initiative of code enforcement or other agencies that are funded or deputized by the program.

Inspection procedures

The program employs a two-tiered strategy that includes exterior and interior visual assessments and, in some cases, XRF (X-Ray Fluorescence) inspections. Visual inspections are conducted by program staff as well as by the Building Safety Division of the City of Kingston Fire Department. If hazards are found in the visual inspection, the program issues a Notice of Inspection, which is very similar to the Notice and Demand but with compliance voluntary. If property owners fail to respond to the Notice of Inspection, deviate from the approved work plan, or fail to use lead-safe work practices, the program issues a Notice and Demand, and a Risk Assessor conducts a full lead-based paint inspection with XRF (X-Ray Fluorescence) measurement of the concentration of lead on painted surfaces. The program also gives residents educational materials and incentives for participation.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. In 2011, the program funded training for 146 individuals on how to conduct repairs safely. Through its partnership with Cornell Cooperative Extension, the program provided 6 lead-safe work practices (LSWP) courses that trained 78 people, and 6 Renovation, Repair, and Painting (RRP) refresher courses that trained 58 people. The program also provided training to 10 other individuals, including nursing staff within the Ulster County Department of Health and staff from other partner agencies.

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Westchester County Department of Health
Childhood Lead Primary Prevention Program Summary

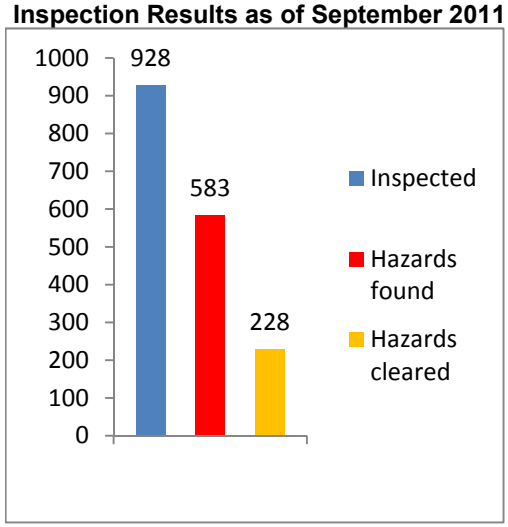
Program description

Poisoning from lead-based paint remains a serious health threat for children, especially those age six and younger. Lead exposure can result in neurological damage, including intellectual impairment, developmental delays, learning disabilities, memory loss, hearing problems, attention deficits, hyperactivity, behavioral disorders, and other health problems. In 2008, 100 children were newly identified with blood lead levels of 10 mcg/dL or higher, which is the current definition of lead poisoning, in Westchester County. This represents an incidence rate of 3.7 per 1,000 children tested. This program focuses on primary prevention: identifying housing with lead-based paint and removing those hazards before children are exposed.

Program results

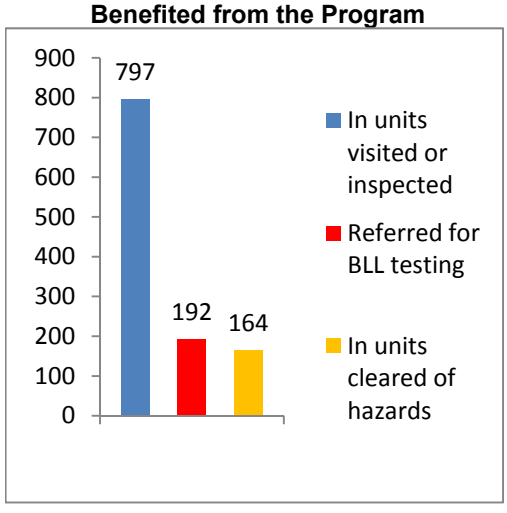
Between 2007 and the end of September 2011, the Westchester program inspected 928 homes and identified lead-based paint hazards in 583 them. It visited without inspecting an additional 644 homes. Its efforts have already made 228 housing units lead-safe (see figure 1.)

Fig. 1. Housing Units Inspected and Inspection Results as of September 2011



The program makes a significant difference in the lives of children and their families. Some children benefit directly because they live in homes in which hazards are found and removed. Others are referred for tests to determine their blood lead level and evaluate whether medical management and additional environmental intervention strategies are needed. Children also benefit from the increased awareness about lead hazards and the educational materials the program gives to their families. Even when no pregnant women or children are currently living in or visiting these housing units, these populations who might live or visit there in the future benefit from having lead hazards removed.

Fig. 2. Number of Children Who Directly Benefited from the Program



Since 2007, the program has worked with property owners to remove lead-paint hazards from housing units in which 164 children lived, and it referred 192 children for tests of their blood lead levels (see figure 2). The program visited or inspected housing units in which a total of 797 children lived.

The homes visited were primarily renter-occupied units in multi-family buildings. Renters lived in 84% of the units, and 86% of the units were in buildings with 3 or more units. About half of the units (46%) were built prior to 1940; the others were all built in 1978 or before.

Housing units targeted for inspection

Westchester County's program targets zip codes 10701 and 10705 in Yonkers; 10550 in the City of Mount Vernon; 10801 in the City of New Rochelle; and 10606 in the City of White Plains.

The program focuses its efforts on housing units that have a history of a child residing in it with a blood lead level at or above 10 mcg/dL and other housing units in the same building. Other high-risk properties identified for inspection include, but are not limited to, properties that are vacant and foreclosed; that are referred by Healthy Neighborhoods Program and/or Maternal and Child Health Home Visiting programs, other partner agencies, or code enforcement agencies; for which owners or tenants have requested inspections; and that have been identified by program staff through door-to-door canvassing or observations of deteriorated paint. The program also provides follow-up inspections, which include educational materials, to residences at which a child's blood-lead level test result was 10-14 mcg/dL. It also provides incentives to residents to encourage participation in the inspections and follow up.

Inspection procedures

A routine inspection includes a visual inspection for chipping and peeling paint hazards on the exterior and interior of the dwelling unit and the building's common areas. If chipping and peeling paint hazards are observed, the Risk Assessor performs an inspection using the XRF (X-Ray Fluorescence) machine to measure the concentration of lead on painted surfaces. If the home has a child with blood lead level of 10-14 mcg/dL, the Assessor takes dust wipe and water samples if no lead-based paint hazard is found using the XRF.

Training on lead-safe work practices

Lead-paint dust created during renovation work can substantially increase children's exposure to lead. The program works to address this problem by training landlords, home owners, and contractors in lead-safe work practices. This training focuses on reducing the amount of dust generated during paint-disturbing work, containing any dust generated, and thoroughly cleaning the job site after work to remove any lead-contaminated dust. Since 2007, the program has funded training for 113 individuals on how to conduct repairs safely.

Program Contact: Mario Polvere, Principal Sanitarian | Phone: 914-813-5127 | E-Mail: mjp1@westchestergov.com

APPENDIX C – ADDITIONAL NOTES ON METHODOLOGY

The overall methodology for describing grantees' interventions to create lead-safe housing units is described in Chapter 4. The rules below describe in more detail how the quantitative analyses were conducted.

1. Exclude units inspected in Year One, Year Two, or Year Three (i.e., before October 1, 2010) that required no additional follow-up by the grantee. This rule excluded (1) all units that the grantee had inspected in either of those years and determined to have no hazards and (2) all units inspected in those years in which all hazards found had been cleared.
2. Exclude units that had no initial visit or inspection. This rule also excluded units that had data, such as number of children, but where the unit was never visited by staff of the Primary Prevention Program or staff of other agencies deputized or funded by the Primary Prevention Program.
3. Include only activities that occurred before the end of the fourth quarter of Year Four (i.e., September 30, 2011). For example, if a unit was inspected before September 30 but cleared of hazards after that date, the unit was included in analyses related to the inspection but not in analyses related to clearance; if both the initial visit and inspection occurred after September 30, that unit was excluded from all the analyses.
4. Rules applied in the Unit Reports generated from the grantees' Microsoft ACCESS applied to the analyses throughout the report. For example, units that had an indication of XRF, dust, or other sampling could not be considered as units with potential hazards since testing had been conducted.

While the reader might expect that the summary data generated from NCHH analysis of the unit-based data would be equivalent to the summary data provided in the quarterly reports, numbers in the quarter reports might be either larger or smaller than numbers from the analysis of unit-based data. The summary data NCHH generated from the unit-based dataset includes units carried over from previous years, while the data grantees provided in the quarterly reports on inspections and potential and confirmed hazards reflect only activities undertaken in each quarter of Year Four. Where there are differences, the quarterly report numbers are generally smaller.

New York State Department of Health

Primary Prevention of Childhood Lead Poisoning Initiative

Cost Benefit Analysis Templates & Guidelines

Revised May 2012

Table of Contents

How to Use This Document

This document presents detailed templates, calculations, and data sources to assist Primary Prevention Programs in conducting and writing their annual cost benefit analysis (CBA). Each section of this document provides formulas, example calculations, and example report language that programs can use for their CBA. Many of the examples used in this document are from actual CBA reports submitted by Primary Prevention Programs in 2010. Thanks to all of the programs for their hard work on these reports and for providing poignant examples of how CBAs can be used effectively to support lead poisoning prevention efforts.

The format of the CBA reports is optional and Primary Prevention Programs are not expected to use all of these templates in one CBA. Rather we hope that you will identify the components that are most useful to your program each year based on your local context and the data you have available. This guidance is a work in progress and these examples in no way represent the only approaches to CBA.

In designing your CBA, you should consider how it can help you achieve program goals, including advancing your program's strategic directions, supporting program sustainability, strengthening community support, deepening partnerships, assuring political will, and helping you do more with less.

The highlighted portions indicate areas of the report where you should insert your program name or use local data and information.

Introduction Section of a Cost Benefit Analysis Report

It is important to provide context to your cost benefit analysis. Each report should establish the content of the report (i.e., what portions of the program will be analyzed) and provide a basic breakdown of program costs by function. If costs are leveraged from another funding source, that information should also be provided.

Overview: Example County's Cost Benefit Analysis Report for grant year 2011 will quantify and evaluate the cost of (1) program referrals for environmental interventions, (2) risk assessments and enforcement, and (3) lead-safe work practice training.

Cost Breakdown: Example County receives $120,000 from the NYSDOH. Program costs are broken down as follows:

Function	Value	Percentage
Management:	$20,000	16%
Environmental Inspections:	$30,000	25%
Nursing Case Management:	$30,000	25%
Lead Safe Work Practice Training:	$15,000	13%
Community Education and Outreach:	$15,000	13%
Miscellaneous Supplies and Materials:	$10,000	8%
	$120,000	

Leveraged Funding: Funding from the NYSDOH is combined with tax levy funding from Example County. A total of $60,000 is provided to support half of the Program Coordinator, an additional risk assessor and a half of an office assistant as follows:

Management:	$20,000
Environmental Inspections:	$30,000
Office Assistant:	$10,000
	$60,000

Analysis: A total of $180,000 in funding is provided to support the prevention of childhood lead poisoning in Example County. Thirty-three percent (33%) of these funds are provided by the county. Over half of the total funds are dedicated to environmental interventions to facilitate lead safe housing and program leadership and management to assure effective and efficient services.

Program Referrals

Cost effectiveness analysis can be used to evaluate and compare various program approaches or methods. An example of this is tracking and cost analyzing program marketing and outreach efforts.

From March through June 2011, the program tracked the source of referrals for risk assessments. Cost per referral was then quantified for comparison purposes.

Method	Cost	Referrals	Cost per referral
Newspaper print advertising	$1,069	0	
Pennysaver wrap	$1,800	6	$300
Radio advertising	$8,694	9	$966
TV advertising	$7,711	4	$1927
Door to door canvassing*	$605	20	$30.25
Interagency referrals	Free	8	$0

*The cost of door-to-door referrals was determined by totaling the value of staff time and incentives. An additional insight gained through tracking was the determination that only 30% of the referrals generated by community canvassing actually resulted in a risk assessment.

Analysis: Referrals from mass media—newspaper, *Pennysaver*, radio and TV—were relatively expensive and determined not to be cost effective. Interagency referrals were the most cost effective, followed by door-to-door canvassing. Upon further analysis, it was determined that the effectiveness of door-to-door canvassing can be enhanced if the risk assessment is scheduled in a more timely manner (same day, next day, or within a week of contact). Relationships with partner community, health, and housing agencies will be the focus of future program efforts to generate more referrals and to deepen collaborations. Mass media promotional efforts will be discontinued unless they can be provided free of charge.

Risk Assessments

In many ways, the risk assessment process is the heart of primary prevention efforts as it facilitates lead hazard control in high-risk housing that proactively protects children from exposure to lead-based paint hazards. It is recommended that a prospective time study be conducted to determine your unique program costs for this important service system. The time study offers the collateral benefit of allowing your program staff to work together toward process improvement, as the time study breaks down each step of every protocol for all staff involved in the risk assessment.

See Appendix A for an overview of the time study process and the Westchester County Cost Benefit Analysis Toolkit for templates that you can adapt for your program.

A. Risk Assessment Costs by Type: The cost estimate for a risk assessment includes program activities from the time a housing unit is referred into the program or identified as in need of inspection through the time that dust wipe clearance is achieved. It does not include the cost of remediation.

- Risk Assessment—No hazards identified: **$ 235.17**
- Risk Assessment—Hazards identified: **$1,088.70**
- Risk Assessment—Hazards identified and a hearing is required to achieve compliance: **$1,366.22***

***Note:** When enforcement is needed, the costs to the program increases, at a minimum, by **$277.52.** This cost is incurred per hearing date. Some cases have multiple hearing dates due to chronic noncompliance.

B. Total Risk Assessment Costs: During the 2011 grant year, 306 risk assessments were conducted at a total cost of $297,853.89. Total risk assessment costs were calculated as follows:

- Risk Assessment—No hazards identified: 55 x $235.17 = $12,934.35
- Risk Assessment—Hazards identified: 209 x $1,088.70 **=** $227,538.30
- Risk Assessment—Hazards identified and a hearing is required to achieve compliance: 42 x $1366.22 **=** $57,381.24

C. Risk Assessments Outcomes:

Lead-Safe Housing Units: 146 housing units successfully underwent lead hazard control.

Children Protected: 153 children under the age of six are now living in lead-safe housing units.

Children Tested: 44 children were referred for testing for lead exposure.

Lead-Safe Work Practices (LSWP) Training

Lead-Safe Work Practices training is offered by most grantees and is a fairly simple activity to quantify. Costs can be calculated by adding up the cost of course development, administrative tasks, facility fees, translation, supplies/materials, trainer expenses, marketing, incentives, and certificates of completion. Each NYSDOH grantee has a unique way of implementing LSWP so training so costs will vary.

See Appendix C for a cost estimating worksheet that can be adapted to calculate local costs.

During grant year 2011, Example County conducted LSWP training 10 times and trained a total of 77 property owners, contractors and workers. The costs to market, register participants and conduct the class were borne by the grant. In-kind donations were provided by the County Parks Department for the facility at a value of $500 total.

A time study was conducted for two LSWP trainings in April and October to determine the average cost.

Training Program Cost: The cost to plan and implement each LSWP training course totals $449.09.

Outcome: In the 2011 grant year, 10 training courses were offered and attended by 77 individuals.

Cost per Person for Training: $58.32 + $33.95 = $92.27 per person

- 10 courses x $449.09 = $4,490.90 /77 individuals = $58.32 per person
- Incentive bags were provided to each participant = $33.95 per person

Analysis: The course is offered frequently to assure timely completion of lead remediation work orders. While the number of participants is fairly low per course, the cost to conduct the training is also fairly low as it is taught and supported by program staff. In the future, we would like to have the capacity to provide the course during the weekend and to provide the course in Spanish for non-English speaking participants. Funding will be needed for course translation and to hire a Spanish trainer. Facility costs may increase on the weekends.

Monetary Benefits of Lead-Safe Window Replacement

Cost benefit analysis is determined by subtracting the cost of the intervention from monetary benefits (averted adverse health, environmental or social outcome). This example uses the cost of lead hazard control and quantifies market value benefits—energy savings and an increase in property values—and health benefits.

Grantees with HUD Lead Hazard Reduction grant programs have access to the costs of lead hazard control including the distinct cost of paint stabilization.

Appendix B provides background on and data sources for this model.

In grant year 2011, our program conducted lead hazard reduction in 100 high-risk housing units located in the target area.

A. Lead Hazard Control Costs:

100 x $6,000 = $600,000

Formula: The average cost to conduct lead hazard control in our county is $6,000* per housing unit.

Or:

The actual costs to conduct lead hazard control on these 100 housing units was $_____.

The costs of lead hazard control were obtained from the database used to manage the county's HUD Lead Hazard Control grant program.

*The $6,000 cost of remediation in this example is an arbitrary figure used to illustrate how costs are calculated. Local costs should be used for your CBA.

Note: You can also include the costs of the risk assessment to the total intervention costs.

B. Market value benefits:

<u>Appearance Value:</u>
100 x 16 x $100 = $160,000

Formula:
100 housing units multiplied by 16 windows per housing unit * multiplied by $100 per window.
Increase in appearance value is $100 per window.

*The study that this template is based on provides information on homes of various sizes ranging from an 800 ft^2 attached home with seven windows to an 1800 ft^2 detached home with 16 windows. For local adaption, you can use the actual number of window per home remediated or use the figures contained in the national analysis.

Energy Savings:
100 x $359 = $35,900

$35,900 x $20 = $718,000

Formula:
100 housing units multiplied by an average annual savings in energy per housing unit. $359 is the midpoint in annual energy savings.
Energy savings increase a home's value by $20 for every dollar per year in energy bill savings.

Paint Stabilization Costs Recovered Through Market Value Increase
$437 x 100 x .95 = $41,515

Formula: $437 is the average cost of paint stabilization per housing unit, multiplied by 100 housing units, multiplied by .95. Note that this value is on the low end. The average for interior and exterior paint stabilization should be calculated locally.

Approximately 95% of the cost of lead-safe paint stabilization is recovered through an increase in the home's market value.

Total Market Value Benefit:	$160,000	Appearance Value
	$718,000	Energy Savings
	$ 41,515	Increase in Market Value
	$919,515	

The Market Value Benefit of Lead Hazard Control of 100 housing units totals $919,515.

C. Health benefits:

100 x $6,847 = $684,700
100 housing units multiplied by the health benefit of $6,847 per housing unit.

See Appendix A for health benefit values. The benefits reflect the average loss of IQ due to lead exposure and associated losses in educational attainment and earnings. The $6,847 is based on pre-1940 housing and the identification of lead based paint hazards on all of the windows replaced.

2011 Net Benefits: The public and private sector benefits of our primary prevention program this year can be quantified as follows:

$919,515 + $684.700 - $600,000 = $1,004,215

Analysis: The return on investment of the 100 homes remediated in Example County in 2011 totals $1,004,215 in health benefits, market value benefits, and energy savings.

Cost of Illness Estimates

Health Care Expenditures

The direct health care costs of lead poisoning include the cost of screening, treatment, and follow-up of exposed and poisoned children. Direct costs can include the cost of screening (capillary test), confirmation (venipuncture), risk assessment, nursing case management, physician visits, and chelation.

Costs incurred because of lead poisoning or costs that could be prevented with more funding or stricter enforcement can be used to secure political will and community support.

See Appendix D for background on how these costs were determined. Local costs for these services should be used if possible.

A total of 3,000 of the county's 6,000 children less than six years old were screened for lead exposure in 2011. The following costs were incurred for the 500 children identified with blood lead levels that exceeded the formal CDC threshold of concern. It is important to note, however, that no level of lead is considered safe and IQ deficits have been documented at lead levels as low as 2 µg/dL.

Blood Lead Level	Number of Children	Estimated Health Care Cost Per Child	Cost Incurred
10-15 µg/dL	250	$74	$18,500
15-20 µg/dL	150	$74	$11,100
20-45 µg/dL	95	$1,207	$114,665
45-70 µg/dL	5	$1,335	$6,675
>70 µg/dL	0	$3,444	0
	500 children		
		Total Costs	$150,949

Special Education Expenditures

The impaired neurobehavioral function of some lead-poisoned children requires special education services. It is estimated that 20% of children with blood lead levels ≥25 µg/dL will need special education. Most states and school districts have information on the average annual cost of special education that should be used to estimate costs in your jurisdiction. For the sake of this example, we will use the national average cost of $14,317 per year. The value of standard education (estimated at $8,322) should be subtracted from the costs to determine the additional costs per child. It is estimated that most children require, on average, three years of special education.

Estimated cost of special education Services in Example County resulting from of lead poisoning.

Additional special education costs per child per year: $5,995

$14,317 - $8,322 = $5,995

Number of children with lead levels ≥25 µg/dL in 2011: 70

Number of children needing special education services: 14

70 x .20 = 14

Total cost of special education per year estimated due to lead poisoning:
$83,930

14 x $5,995 = $83,930

Special education costs for an average of three years:
$251,790

$83,930 x 3 = $251,790

IQ and Lifetime Earnings Loss

The most well established area of research on the effects of lead poisoning on children and society revolves around cognitive and behavioral impairments. There is a clear association between elevated blood lead levels and reduction in IQ. In fact, there is a greater loss in IQ per 1 µg/dL at lead levels less than 10 µg/dL than those above the CDC threshold of concern (although the cumulative impact is greater for children with higher blood lead levels). Lower IQ levels increase a child's need for special education services, decreases the likelihood of high school and college graduation, and lowers lifetime earnings. Every loss in lifetime earnings has an associated loss in potential tax revenue.

In Example County in calendar year 2011, 110 children were identified with blood lead levels greater than 2 µg/dL where IQ deficits have been documented. The table below illustrates the loss of IQ by lead level for these children and calculates the decrease in lifetime earnings as a result of cognitive impairment.

Blood lead level	**Number of Children (Prevalence)**	**Average Blood Lead Level**	**Average Rate of IQ Loss per µg/dL within BLL Group[xxiii]**	**Total IQ Points Lost within BLL Group (*see formulas in notes*)**	**Lifetime Earning Loss within BLL Group *($18,958[xxiv,xxv] x Total IQ Points Lost)***	**Applied to the number of children within BLL Group *(Lifetime earning loss x number of children)***
2-10 µg/dL	60	5	.513	2.565	$48,627	$2,917,636
10-20 µg/dL	40	15	.19	6.08	$115,265	$4,610,586
≥20 µg/dL	10	20	.11	7.03	$133,275	$1,332,747
	110			**Net lifetime earnings loss**		**$8,860,969**

[xxiii] Lanphear BP, Hornung R, Khoury J, Yolton K, Baghurst P, Bellinger DC, et al. 2005. Low-Level Environmental Lead Exposure and Children's Intellectual Function: An International Pooled Analysis. *Environmental Health Perspectives.* 113:894-899.

[xxiv] Gould E. 2009. Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. *Environmental Health Perspectives*. 117(7): 1162-1167. Uses IQ point loss value of $17,815 from Schwartz, et al (1994) based on 2006 USD.

[xxv] Oklahoma Department of Health. September 2010. Economic Impact of Childhood Lead Poisoning. The Bulletin. pp 40-43. Uses IQ point loss value of $18,958 based on 2009 USD (adjusted for inflation).

Notes:

- **Overall Basic Formula:** Total IQ Loss within BLL group x Lifetime earning loss per IQ point x number of children in that category = Net lifetime earning loss.

- **Total IQ Points Lost within BLL Group Formula**: Total IQ Loss is calculated for each blood lead level group by applying the rate of IQ loss to each microgram of lead per deciliter and summing the total.

    - **Step 1: Calculate total IQ points lost within the 2-10 µg/dL range**. Take the average blood lead level in the 2-10 group (in this example it is 5) multiplied by the average rate of IQ loss per µg/dL in that group (.513). *The mathematical formula for the 2-10 µg/dL group in this example = Avg. BLL x Avg. IQ Loss = 5 x .513 = 2.565*

    - **Step 2: Calculate total IQ points lost within the 10-20 µg/dL range**.

        - **Step 2a:** You first need to account for the loss of IQ points that occurred below 10 µg/dL to account for cumulative IQ loss. To do so, you multiply 10 by the rate of IQ loss below 10 µg/dL (.513).

        - **Step 2b:** Then, you take the average blood lead level in the 10-20 µg/dL group (in this example, it is 15), and determine the number of µg/dL that this average number is above 10 (in this example it is 5).

        - **Step 2c:** You then multiply that number of µg/dL above 10 by the average rate of IQ loss per µg/dL in the 10-20 µg/dL group (.19).

        - **Summary:** For the first 10 µg/dL, the rate of IQ loss is .513 (10 x.513 = 5.13). For the next 5 µg/dL, the rate of IQ loss is .19 (5 x .19=.95). Therefore, the total IQ loss for a child in the 10-20 blood lead level group is 5.13+.95=6.08. *The mathematical formula for this group in this example = (10 x .513) + (Number of µg/dL above 10 in Avg. BLL x .19) = (5.13) + (5 x.19) = 6.08.*

    - **Step 3: Calculate total IQ points lost within the ≥ 20 µg/dL range.**

        - **Step 3a:** You first need to account for the loss of IQ points that occurred below 20 µg/dL to account for the cumulative IQ loss. To do so, you multiply 10 by the rate of IQ loss below 10 µg/dL (.513)

and multiply 10 by the rate of IQ loss in the 10-20 µg/dL group (.19).

- **Step 3b:** Then, you take the average blood lead level in the ≥ 20 µg/dL group and determine the number of µg/dL that this average number is above 20 (in this example it is 0) and multiply this by the average rate of IQ loss in the ≥ 20 µg/dL group.

- **Summary:** For the first 10 µg/dL, the rate of IQ loss is .513 (10 x .513 = 5.13). For the next 10 µg/dL, the rate of IQ loss is .19 (10 x .19=1.9). For any IQ points above 20, the rate of IQ loss would be .11. However, to keep this estimate conservative, we are using 20 as the average (0 x .11). Therefore, the total IQ loss for a child in the ≥ 20 µg/dL blood lead level group is 5.13+1.9 + 0 = 7.03. *The mathematical formula for this group in this example = (10 x .513) + (10 x.19) + (Number of µg/dL above 20 in Avg. BLL x .11) = (5.13) + (1.9) + (0 x.11) =7.03.*

- The calculations for the total IQ points lost with BLL group are based on peer-reviewed literature which assumes that the average rate of IQ loss of .513 IQ points per µg/dL in the 2-10 µg/dL range extends across the >0-10 µg/dL range when calculating the cumulative loss for the 10-20 µg/dL and ≥ 20 µg/dL ranges.

- Determine the average blood lead level for children in your jurisdiction within the 2-10 µg/dL and 10-20 µg/dL ranges. For the sake of this example, 5 µg/dL and 15 µg/dL (respectively) were used.

- For the greater-than-20 level, use the low end of the range as the average for a conservative estimate.

- $18,958 represents the estimated reduction in lifetime earnings per IQ point loss (2009 USD).

Analysis: It is estimated that Example County will lose approximately $8.8 million from lifetime earnings as a result of the 110 children identified with blood lead levels >2 µg/dL. These data demonstrate a strong need for primary prevention to prevent exposure. We must continue to target proactive lead hazard control aggressively in high-risk communities.

Juvenile Delinquency

Significant evidence exists between lead exposure and social and emotional dysfunction. The link between lead poisoning and criminal activity of a violent nature has been identified. It is estimated that 10% of juvenile delinquency may be attributed to lead poisoning.[xxvi]

In Example County in 2011, according to the District Attorney's office,* 100 juvenile offenders were placed in custody or on probation. It has been estimated that 10% of juvenile delinquency may be attributed to lead poisoning. The U.S Office of Juvenile Justice and Delinquency Prevention (OJJDP) estimates the cost of incarcerating youth as $34,000 per year. Using OJJDP estimates, the assumption can be made that the cost of juvenile offenses attributable to lead poisoning in Example County in 2001 is approximately $340, 000.

Formula:

- 100 violent juvenile offenders x .10 x $34,000 = $340,000

Analysis: The benefits of preventing lead poisoning are not confined to medical costs or the impact on individual families. Lead exposure has a significant impact on social behavior and lowered lead levels will lead to lower crime rates.

Note:

- If possible, obtain the annual cost of incarceration from your local or state officials.
- The source of information on the number of juvenile offenders will vary by locality.

[xxvi] Korfmacher KS. 2003. Long-Term Costs of Lead Poisoning: How Much Can New York Save by Stopping Lead? Working Paper: Environmental Health Sciences Center, University of Rochester, 9 July 2003. Available: http://www.sehn.org/tccpdf/lead%20costs%20NY.pdf [accessed 10 October 2008].

Summary to Cost Benefit Analysis Reports—Quantifying the Return on Investment

For every dollar spent on controlling lead hazards, $17–$221 is returned in health benefits, increased IQ, higher lifetime earnings, reduced spending on special education, and reduced criminal activity.[xxvii]

To put these results in perspective, it is useful to compare these net benefits to another cost effective intervention - vaccinations. Cost-benefit analyses show that vaccination against the most common childhood diseases delivers large returns on investment, saving between $5.30 and $16.50 in costs for every dollar spent on immunizations.[xxviii] Given the high societal costs of inaction, lead hazard control appears to be well worth the expense.

In Example County in 2011, the $180,000 invested in lead poisoning prevention had a return on investment of $3,060,000 - $39,780,000.

Formula:

- $180,000 x $17 = $3,060,000; $180,000 x $221 = $39,780,000

[xxvii] Gould E. 2009. Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. *Environmental Health Perspectives*. 117(7): 1162-1167

[xxviii] Zhou F, Santoli J, Messonnier ML, Yusuf HR, Shefer A, Chu SY. 2005. Economic Evaluation of the 7-Vaccine Routine Childhood Immunization Schedule in the United States, 2001. *Archives of Pediatrics & Adolescent Medicine* 159:1136–1144.

Appendix A—Risk Assessment Time Study

The prospective time study approach can be applied to any service that your program provides and includes the following steps:

1. **Document protocols or procedures:** Identify each step of the process from the time a property is referred into the program through the time that dust lead clearance is achieved.

2. **Specify staff roles and responsibilities:** Assign each step in the process to the appropriate staff person. This may result in an update of your program's risk assessment protocol if it hasn't been reviewed for accuracy recently. It also allows you the opportunity to determine if every step is necessary (versus "this is the way we've always done it") and to identify more efficient and effective methods to deliver services.

3. **Develop time estimating worksheets:** Time estimating worksheets should be developed for all staff to document their time as they are conducting the time study.

4. **Document time for each step in the process as the work is being done:** Identify a period of time—for example, 30 days—for staff to track their time for each step in the process.

5. **Average time across similar staff if needed:** If you have two risk assessors, their time per step should be averaged.

6. **Identify hourly rates:** Obtain the average hourly rates for each staff person conducting the time study.

7. **Calculate intervention costs:** Apply the total time per job title to the hourly rate to quantify the cost per household to conduct a risk assessment. Total the time for each staff person to obtain the total cost of the risk assessment. Supplies and laboratory analysis costs should be included as well.

8. **Quantify program outputs (activities):** Identify what was accomplished as a part of the risk assessment process for the grant year. Outputs can include the number of children protected, number of houses made lead safe, number of housing units referred to enforcement, et cetera.

9. **Analyze and document findings:** Review the cost information to determine what impact it has on your program. What is the additional cost of enforcement?

What did you determine could be done more efficiently? What part of the process is difficult and needs to be improved? How can the knowledge of cost be used to promote and enhance your primary prevention efforts?

Appendix B—Background on Calculating the Monetary Benefits of Preventing Lead Poisoning with Lead-Safe Window Replacement

The authors quantify health benefits, market value benefits and energy savings and also take into consideration the cost of lead hazard control to calculate net benefits.[xxix] This paper concludes that window replacement combined with paint stabilization yields public and private sector benefits that far exceed the costs of interventions.

Lead hazard control costs, annual energy saving and related market value benefits vary by the size of the housing unit and the number of windows replaced. Table 1 shows the average estimated costs used to determine monetary benefits of preventing childhood lead poisoning. Local costs, if available, should be used.

Table 1: Lead-Safe Window Replacement Costs, Benefits, and Energy Savings

	800 ft^2 Attached 7 Windows	1200 ft^2 Detached 10 Windows	1800 ft^2 Detached 16 Windows
Costs of Lead Hazard Control			
Window Replacement	$6,118	$9,684	$15,494
Weighted Average Interior Paint Stabilization	$146	$146	$146
Weighted Average Exterior Paint Stabilization	$291	$291	$291
Specialized Cleanup	$386	$510	$510
Lead Dust Clearance Testing	$175	$219	$219
Average Cost	**$7,116**	**$10,850**	**$16,660**
Annual Energy Savings (15-25% reduction in energy bills)			
Annual savings	**$130-216**	**$194-324**	**$292-486**
Market Value Benefits (95% of the cost estimates above)			
Windows	$5,485	$8,681	$13,890
Weighted Average Interior Paint Stabilization	$144	$144	$144
Weighted Average Exterior Paint Stabilization	$270	$270	$270
Average Market Value Benefit	**$5,899**	**$9,095**	**$14,304**
Average Lead Hazard Reduction Benefit			
Weighted Average in Pre-1940 Housing	$6,847	$6,847	$6,847

[xxix] Nevin R, Jacobs D, Berg M, Cohen J. 2008. Monetary Benefits of Preventing Childhood Lead Poisoning with Lead-Safe Window Replacement. *Environmental Research.* 106: 410-419.

Weighted Average in 1940-1959 Housing	$2,847	$2,847	$2,847
Weighted Average in 1960-1977 Housing	$632	$632	$632

Notes:

- Window replacement costs are for Energy Star windows. If Energy Star windows are not used, energy savings should be decreased by 50%.
- Program costs for window replacement may be lower if a locality engages in bulk purchasing.
- Window replacement costs and associated average increase in a home's market value were obtained from *Remodeling* magazine's annual "Cost vs. Value Reports" estimates.
- Cost estimates include labor, material, and overhead.

Costs of Lead Hazard Control: Lead poisoning prevention or housing rehabilitation programs that fund lead hazard control can track the cost to conduct lead abatement or estimate costs by the size of home, as demonstrated above.

Market Value Benefits: Higher home values due to the installation of new energy-efficient windows and paint stabilization are based on:

- 15-25% reduction in energy bills (pre-lead hazard control). Total annual cost for electricity, natural gas, and/or fuel oil.
- Average increase in home value of $20 for every dollar per year in energy bill savings
- Appearance value of $100 per window.
- 95% of the cost of window replacement and paint stabilization is recovered through an increase in property value.

Health Benefits: The health benefit of lead-safe window replacement is based on extensive regulatory analysis and research quantifying the value of increased average lifetime earnings associated with prevention of preschool lead exposure. The benefits reflect the average loss of IQ due to lead exposure and associated losses in educational attainment and earnings. These benefits vary by the age of housing because lead paint hazards are more common in older housing.

Conducting Cost Benefit Analysis:

Table 2 illustrates how programs can track their program costs and benefits by collecting data on each home upgraded with lead-safe window replacement. These costs are based on collecting the total cost of lead hazard control and being able to specify paint stabilization costs.

In summary:

- The benefit of window replacement in each home equals $100 per window plus a 20% reduction in that home's average annual energy bill compared to the year prior to window replacement. There is an average increase in home value of $20 for every dollar per year in energy bill savings.
- The benefit of paint repair/stabilization in each home equals 95% of paint repair costs.
- The benefit of lead hazard reduction in each home equals $6,847 in a pre-1940 home, $2,847 in a home built from 1940-1959, and $632 in a home built from 1960-1977.

When the total costs of lead hazard control are captured and the specific cost of paint stabilization is tracked for each home, cost benefit analysis can be conducted as demonstrated in Table 2.

Table 2: Program-Specific Lead-Safe Window Replacement Costs and Benefits

Costs: Total Costs of Lead Hazard Reduction	
Window Replacement: Actual Installed Cost	$
Paint Stabilization: Actual Cost	$
Cleanup and Lead Dust Clearance Testing: Actual Cost	$
Total Cost = A	**$ Sum of all homes remediated**
Market Value Benefits:	
Windows Market Benefit = $100/window + (20% of the previous year's annual energy bill x 20)	$
Paint Stabilization Market Benefit = 95% of Actual Cost	$

Total Market Value Benefit = B	**$ Sum of all homes**
Lead Hazard Reduction Benefits	
Pre-1940 units multiplied by $6,847	$
1940-1959 units multiplied by $2,847	$
1960-1977 units multiplied by times $632	$
Applicable Lead Hazard Reduction Benefit = C	**$ Sum of all homes**
Net Benefits: B + C - A	**$**

Appendix C—Lead-Safe Work Practices

LEAD SAFE WORK PRACTICES TRAINING COURSE

TIME ANALYSIS WORKSHEET

JOB TITLE: _____ **NAME: _____**

DATE: _____ **COURSE DATE: _____**

		TIME TO COMPLETE
_____	Registering Students and Collecting Contact Information	_____
_____	Printing Certificates of Course Attendance	_____
_____	Packing Bags of Incentive Items	_____
_____	Transporting Course Supplies, Incentive Items and/or Hands on Supplies (List Miles _____)	_____
_____	Teach Class (# of attendees _____)	_____
_____	Answer Requests about RRP class or Requirements	_____
_____	Other (list) _____	_____
_____	Other (list) _____	_____
_____	Other (list) _____	_____

MATERIALS DISTRIBUTED:

_____
_____
_____
_____

SUPPLIES USED:

_____
_____
_____
_____

Appendix D—Cost of Illness Estimates

Health costs per child with lead level ≥ 10 µg/dL[xxx]

Blood Lead Level	Cost of Medical Action
10-15 µg/dL	$ 74
15-20 µg/dL	$ 74
20-45 µg/dL	$1,207
45-70 µg/dL	$1,335
>70 µg/dL	$3,444

Notes:

- 2006 Consumer Price Index.
- These are conservative estimates as medical costs have increased at significantly higher rates than general inflation over the past decade.
- Cost of blood lead levels < 10 µg/dL are not included even though the lead levels between 2-10 µg/dL have been found to cause cognitive damage and would benefit from prevention.
- Includes only direct medical costs for children ≤6 years of age and does not account for the negative health effects later in life such as neurologic disorders, adult hypertension, heart disease, stroke, kidney malfunction, elevated blood pressure and osteoporosis.
- Can add your local abatement costs and use local costs for these services and treatments.

[xxx] Gould E. 2009. Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. *Environmental Health Perspectives*. 117(7): 1162-1167.

REFERENCES

[1] Centers for Disease and Prevention. http://www.cdc.gov/nceh/lead/ EPA, *America's Children and the Environment, 2007*. *Measure B1: Concentrations of lead in blood of children ages 5 and under*. *http://www.epa.gov/economics/children/body_burdens/b1-graph.* CDC defines an elevated blood-lead level to be equal to or more than 10 micrograms per deciliter (>10µg/dL). *www.cdc.gov/nceh/lead/surv/stats.htm.* There is no safe exposure level.

[2]Centers for Disease Control and Prevention. Presentation to the Advisory Committee on Childhood Lead Poisoning Prevention, 2011.

[3] Leonardo Trasande. "Reducing the Staggering Costs of Environmental Disease in Young Chldre, Estimated at $76.6 Billion in 2008" *Health Affairs*, May 2011, Vol. 30, No. 5, 863-870.

[4] 73 *Federal Register*. 21692, 21694, April 22, 2008. (Preamble to EPA's final Renovation, Repair and Painting Rule [RRP Rule]). This preamble provides an excellent summary of current knowledge regarding lead poisoning.

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