

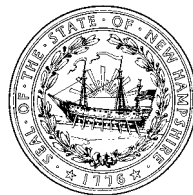


**National Center for
Healthy Housing**



New Hampshire Healthy Homes Statewide Strategic Action Plan

**Prepared by the National Center for Healthy Housing
and Tohn Environmental Strategies**



**With the New Hampshire Childhood Lead Poisoning Prevention Program.
Funding Support provided by the Maternal and Child Health Section,
Division of Public Health Services,
New Hampshire Department of Health and Human Services**

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I. Introduction

As New Hampshire continues to work toward the goal of eliminating childhood lead poisoning as a public health problem by 2010, a program shift is under way to move from this single focus to address multiple environmental, health and safety risk factors affecting families in New Hampshire. This shift to a holistic, coordinated approach will assess multiple potential risks or hazards within a home, including broad safety and health promotion information during home visits, and coordination of referrals and follow-up. This move toward “healthy homes” is in concert with federal initiatives to approach housing-related hazards and deficiencies in a coordinated and comprehensive way to prevent diseases and injuries. This approach also reflects a more efficient and effective use of existing resources.

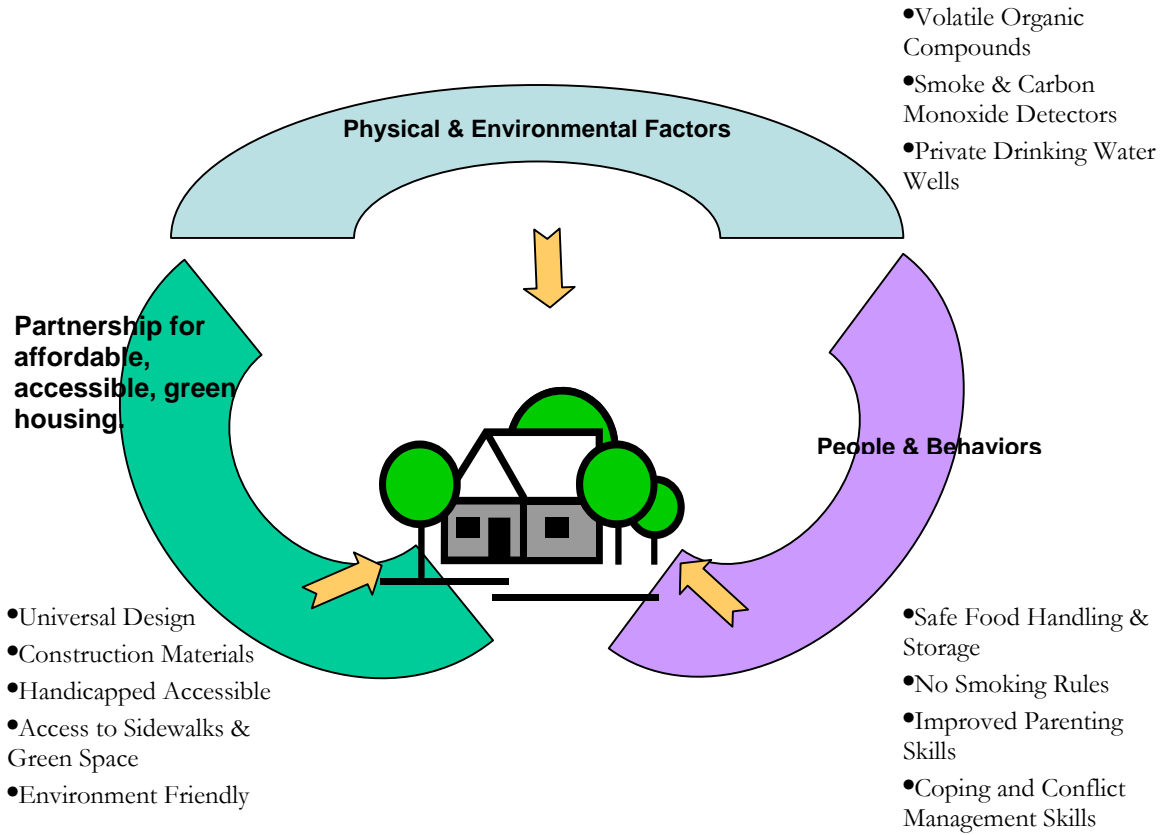
A growing body of evidence links housing conditions to health outcomes such as asthma, lead poisoning, lung cancer, and unintentional injuries. A “healthy home” is a home designed, constructed, maintained, or rehabilitated in a manner that supports the health of residents. The focus of the initiative is to identify health, safety, and quality-of-life issues in the home environment and to act systematically to eliminate or mitigate problems. Nationally, the U.S. Centers for Disease Control and Prevention (CDC) has established a healthy homes goal and is actively encouraging CDC-funded childhood lead poisoning prevention programs to plan and implement healthy homes programs (see Figure 1 for a depiction of CDC’s model healthy homes program as described in its *2008 Healthy Homes Goal Action Plan*).

Healthy homes can be defined broadly to include physical and environmental factors, personal/behavioral factors, and allied initiatives such as smart growth and universal design. New Hampshire’s Statewide Strategic Action Plan largely focuses on advancing health through the improvement of families’ physical environments. Some elements of the plan address the personal and behavioral factors that can create or detract from a healthy home environment. The plan also identifies opportunities to incorporate healthy homes into related home-based initiatives such as residential energy efficiency programs and green building.

Healthy Homes Principles

KEEP IT DRY
KEEP IT CLEAN
KEEP IT WELL-VENTILATED
KEEP IT FREE FROM CONTAMINANTS
KEEP IT PEST FREE
KEEP IT SAFE
KEEP IT WELL-MAINTAINED
KEEP IT ACCESSIBLE

Figure 1: Healthy Homes Model



On March 26, 2008, the New Hampshire Department of Health and Human Services (DHHS), Division of Public Health Services (DPHS), Maternal and Child Health Section, contracted with the National Center for Healthy Housing, Inc., (NCHH), a nonprofit corporation based in Columbia, Maryland, to assist in the development of a statewide Healthy Homes strategic plan. This strategic planning process involved extensive collaboration between a large and diverse group of statewide experts from the fields of public health, public safety, housing agencies, historic preservation and resources, charitable foundations, the medical community, Community Action Programs (CAPs), Visiting Nurses Associations (VNAs), Community Health Centers, local and state non-profit agencies, as well as the US Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA).

The overarching healthy homes goals presented below were derived from the vision statements generated through the local and statewide planning meetings and research on housing and health problems in New Hampshire:

- 1) Ensure homes in New Hampshire meet minimum health and safety requirements.
- 2) Generate awareness of home-based health and safety hazards and provide tools to families to address them.
- 3) Reduce smoking and pesticide use in multi-family properties in the state.
- 4) Increase the number of homes that have been inspected and mitigated for radon.
- 5) Engage more multi-disciplinary partners in delivering healthy homes information, assessments, and upgrades.

HEALTHY HOMES STRATEGIC PLANNING WORK GROUP

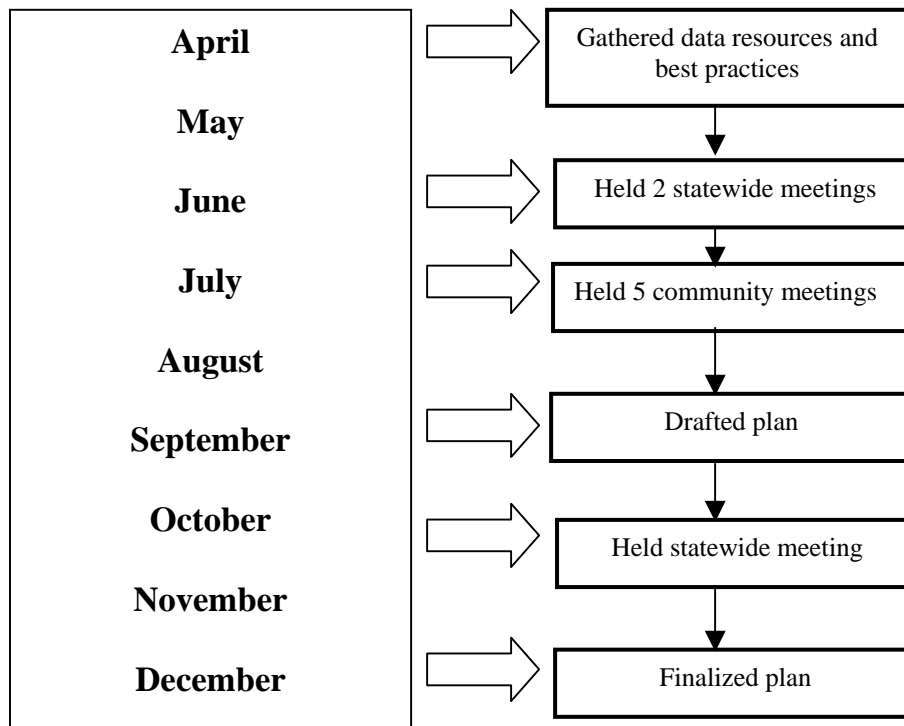
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II. Overview of Planning Activities

In April 2008, the NCHH initiated the planning process by gathering information on New Hampshire's resources and current capacity to address healthy homes issues as well as documenting health and housing conditions in the state (see Section III). The NCHH also collected information from other state and local healthy home initiatives to identify practices that could serve as models for New Hampshire. The NCHH facilitated two statewide strategic planning sessions and five community strategic planning meetings in the highest-risk lead

communities (Berlin, Claremont/ Newport, Franklin/Laconia, Manchester/Nashua, and Rochester). The meetings were organized to help establish priorities, enable sharing of perspectives on potential strategic initiatives, and to help structure the final plan. Figure 2 illustrates the key steps and schedule.

Figure 2: Strategic Planning Timeline of Events – 2008



This strategic planning process involved extensive collaboration between a large and diverse group of statewide experts from the fields of public health, public safety, housing agencies, historic preservation and resources, charitable foundations, the medical community, Community Action Programs (CAPs), Visiting Nurses Associations (VNAs), Community Health Centers, local and state non-profit agencies, as well as the US Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA) (refer to Appendix D for complete list of participating programs and organizations). This plan is a reflection of the information and ideas provided by the individuals who participated in this process.

Creating a Healthy Homes Vision

The foundation for this strategic plan is generated from the vision of stakeholders who participated in the statewide and community meetings. Visioning is critical for multi-disciplinary planning efforts as it enables participants to see how the actions that inspire them fit into the broader effort. Multi-disciplinary visioning also illuminates new linkages among programs and can yield fresh and innovative ideas for collaboration.

Participants were asked to help create a vision for a New Hampshire Healthy Homes initiative by providing Healthy Homes “headlines” that they would like to read about in local papers five years from now. The headline exercise produced a wide range of inspiring goals, several of which received enthusiastic support at more than one community meeting. Participants then worked to articulate the strategies and actions that would be needed to achieve key goals. The strategies articulated in these working sessions became the basis for the Action Plan items presented in Section V.

Selected Headlines

- “New Hampshire adopts statewide green building codes and funds enforcement”
- “Multi-disciplinary, certified healthy homes inspectors assess and address housing and health conditions”
- “Healthy homes initiative eliminates lead poisoning and reduces radon and CO levels; new city ordinance in place”
- “Asthma rates lowest in decade”
- “Property owners association recognizes members for healthy housing achievements”

III. Health and Housing Conditions in New Hampshire

The NCHH collected data on health and housing conditions from state programs and federal sources to better understand healthy housing issues within the state of New Hampshire. The NCHH also collected data on state program capacity and resources for healthy homes interventions. These data were compiled and presented at the two statewide and five community meetings. Brief summaries of the findings are provided below.

Lead Poisoning

New Hampshire has some of the oldest housing stock in the country. According to 2000 Census data, approximately 30% of the housing stock was built prior to 1950 when lead paint was commonly used. Children living in older houses with deteriorated lead paint or lead contaminated dust are at increased risk for lead poisoning.

In New Hampshire, 170 of the 15,592 children tested for lead poisoning in 2007 had elevated blood lead levels (BLLs) above or equal to 10 micrograms per deciliter of blood (ug/dL). The majority of these children (90%) lived in pre-1950 homes and approximately one-third lived in or regularly visited homes built prior to 1978 that had recently undergone renovation.¹

Highest Risk Lead Poisoning Areas:

Berlin
Claremont/ Newport
Franklin
Laconia
Manchester
Nashua
Rochester

The New Hampshire Childhood Lead Poisoning Prevention Program (CLPPP) maintains an extensive blood lead surveillance system for the purpose of monitoring trends in BLLs in adults and children in New Hampshire. As of January 1, 2008, the database contained 245,727 records of blood lead test results from 166,292 individual New Hampshire residents dating back to 1985. The data are used to help identify populations at risk for elevated BLLs, to determine whether screening guidelines are being followed in high-risk populations, and to ensure that appropriate environmental and medical follow-up are provided to children with elevated BLLs.

¹NH CLPPP, NH Blood Lead Surveillance Data, 2007.

The BLL elevation rate for children under the age of six in New Hampshire has hovered around the national rate of 1.9% (CDC 2005) for the past six years (1.1-2.0%). Although the statewide elevation rate is relatively low and stable, childhood lead poisoning continues to be a significant, preventable environmental health problem in New Hampshire. Children, especially those under age 6, are more likely to suffer persistent developmental delays, learning disabilities and behavioral problems as a result of their exposure to lead.

Housing conditions associated with lead poisoning are chipping, peeling, flaking paint on the exterior or interior; paint on friction-impact surfaces such as windows, thresholds, doors, stairs, railings; water leaks, moisture problems; and renovation of old houses that entail lack of lead-safe work practices, improper containment of the work area and improper clean up.

Asthma and Other Respiratory Illnesses

Asthma is a chronic lung disease. The prevalence of asthma among adults and children has increased dramatically since the mid-1980s across the United States. In New Hampshire, approximately 10% of adults and 8% of children currently have asthma,² costing the state an estimated \$46 million each year.³ Asthma rates in New Hampshire are higher than the national averages, but similar to those of other New England states.⁴ According to the Behavioral Risk Factor Surveillance Survey (BRFSS) conducted in 2004, almost half of the adults in New Hampshire with asthma included in the survey believed that poor indoor air quality negatively affected their health.

Housing conditions associated with asthma and other respiratory illnesses include the presence of mold, excess moisture, allergens (i.e., dust mites, mice, and cockroaches) and tobacco smoke. Although data on these factors are not readily available for New Hampshire, data from the 1998 American Housing Survey, collected in the Greater Boston Area and portions of New Hampshire, estimated that one out of every five homes was reported to have exterior leaks, and the presence of mice was reported in 7% of homes within the past three months.⁵ (This reflects the lack of current available New Hampshire housing data).

Survey data on exposure to environmental tobacco smoke is available for the state. Approximately 19% of New Hampshire adults report they currently smoke and approximately one-third of all New Hampshire children live in homes where a person smokes.⁶ Children exposed to second-hand smoke are at increased risk for a variety of illnesses, including cough, breathlessness, pneumonia, bronchitis, asthma exacerbation, middle-ear infections and Sudden Infant Death Syndrome (SIDs). Smoking also accounts for 18% of deaths in New Hampshire and costs the state approximately \$608 million per year in healthcare costs.⁷

² Behavioral Risk Factor Survey (BRFSS), 2007.

³ Reported in "Asthma in NH Data Brief" Vol. 1 No.1, October 2007.

⁴ The Burden of Asthma in New England: A report by the Asthma Regional Council, March 2006.

⁵ American Housing Survey, 1998.

⁶ BRFSS, 2007.

⁷ Cherala, S. New Hampshire Cancer Report, 1999-2003, New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Disease Control and Health Statistics, Health Statistics and Data Management Section, New Hampshire State Cancer Registry, June 2007.

Lung Cancer

In 2003, approximately 868 individuals in New Hampshire were diagnosed with lung cancer, and approximately 675 individuals died from it. While smoking is the leading cause of lung cancer, radon exposure is the second leading cause of lung cancer. In New Hampshire, an estimated 92 lung cancer deaths a year are related to radon exposure.⁸

The Radon Program within New Hampshire's Department of Environmental Services (DES) collects information about radon levels in New Hampshire through a cooperative agreement with the EPA. Over a twenty-year span (1987-2008), approximately 24,000 homes have been tested for radon. Based on the data collected, an estimated one out of every three New Hampshire homes has a radon level above the EPA Action Limit of 4 picocuries per liter. In most cases, elevated indoor radon levels can be corrected by installing a sub-slab radon mitigation system. Data on the number of New Hampshire homes that have had mitigation systems installed is difficult to capture, but information collected over the last two years from the radon mitigation system installers suggest that at least 800 systems are installed in New Hampshire annually.

Carbon Monoxide (CO) Poisoning

Common sources of CO poisoning include improperly vented or faulty gas, kerosene, or charcoal heating equipment or appliances. Most CO poisonings tend to occur during winter months when there is increased use of combustion appliances to heat homes. In 2007, the Northern New England Poison Control Center cited 61 cases of reported CO poisoning cases. In 2007, NH Fire Departments reported to the NH Fire Marshal's Office 526 calls related to CO and found 247 cases of CO detector malfunction or deactivation. However, these data likely underreport CO exposure cases. Currently, New Hampshire has no state law requiring the use of CO detectors in new or existing housing.

Home-related Injuries

Across the country, an estimated one-third of all injuries occur in the home. The top five causes of unintentional home injury deaths include falls, poisonings, fires/burns, choking/suffocations, and drownings.⁹ Many home-related injuries that do not result in death, such as slips, trips, and falls in the home, go unreported unless a trip to the hospital is warranted. The Northern New England Poison Control Center captures information on injuries related to unintentional poisonings, which includes exposure to medicines, pesticides, plants, cleaners, and other toxic substances. In 2006-2007, 12,135 cases of unintentional poisonings in children were reported; the percentage of such cases occurring in the home due to housing related risks is unknown.

Data referenced in "Find the Facts! Tobacco Use in NH, September 2006" produced by NH Institute for Health Policy and Practice.

⁸ Cherala, S. New Hampshire Cancer Report, 1999-2003, New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Disease Control and Health Statistics, Health Statistics and Data Management Section, New Hampshire State Cancer Registry, June 2007.

⁹ Home Safety Council, 2008.

Drinking Water

Drinking water is supplied to residents through both public drinking water systems and private wells. Public systems must meet Federal drinking water standards. There is no requirement for testing of private drinking water wells, although the NH DES does recommend such testing. Wells have been found to have both arsenic and radon at levels of concern. Approximately 13 percent of New Hampshire wells exceed the revised and more stringent EPA arsenic drinking water standard of 0.010 mg/L.¹⁰

Radon is also a common New Hampshire groundwater problem. Data from 3,400 New Hampshire public water supply samples submitted over a six year period indicates that 38% of samples exceeded 4,000 pCi/L, which is the higher of two standards that were considered by the EPA in a proposed rule on radon in drinking water. The proposed 4,000 pCi/L would only be applicable if public water systems also adopted a multi media approach to control radon. The EPA also proposed a lower more stringent level of 300 pCi/L; 94% of the samples collected in New Hampshire exceeded this standard.¹¹ NH DES indicates that the results for the public systems are equally representative for private wells. To date, the EPA has not finalized radon in drinking water standards.

The NH DES also recommends testing for other members of the naturally occurring radioactive family commonly found in New Hampshire (e.g., uranium which is a carcinogen and is toxic to kidneys); approximately 7% of public water systems have exhibited uranium at levels of concerns.¹²

IV. New Hampshire Health and Housing Programs

New Hampshire has several state programs that currently address housing issues or one of the health conditions described above.

Childhood Lead Poisoning Prevention Program (Division of Public Health Services, DHHS)

Program Description: The New Hampshire Childhood Lead Poisoning Prevention Program (CLPPP) works to reduce the number of New Hampshire children with elevated blood lead levels. The program is a resource for New Hampshire residents who need help addressing the hazards of lead in their children's environment. The CLPPP conducts statewide surveillance; provides medical case management and home inspections for lead-poisoned children; and provides information and referral for reduction and abatement of lead hazards. Professional program staff provide free phone consultation and referral to lead screening providers, as well as free lead poisoning prevention information kits.

¹⁰ NH DES, Arsenic in Drinking Water Environmental Fact Sheet (WD-WSEB-3-2), 2006.

¹¹ NH DES, Radon in Air and Water: An Overview for the Home Owner Environmental Factsheet (WD-WSEB-3-12), 2005.

¹² NH DES, Personal Communication with Bernie Lucey, 2008.

Funding Source and Amount: The CLPPP receives funding from CDC's Lead Poisoning Prevention Branch, the EPA, Medicaid, CDC-NIOSH, and state general funds. Annual operating budget is estimated at \$800,000.

Number of staff in program: Program has 10 full-time employees.

Does program conduct home visits? Yes. Conducts environmental and case management visits. The program also contracts with local agencies to provide case management in their communities.

Asthma Program (Division of Public Health Services, DHHS)

Description of Program: The Asthma Control Program promotes a coordinated, public health response to asthma in New Hampshire and implements the New Hampshire Asthma Plan to improve health outcomes and increase resources available for people with asthma in New Hampshire. The program focuses on four areas: clinical, environmental, public awareness, and surveillance. Initiatives include implementing an asthma learning collaborative for health care providers, promoting the national certification of asthma educators, supporting asthma-healthy homes, schools, and workplace activities, increasing public awareness about asthma and its consequences, and providing data about asthma in New Hampshire and the US.

Funding Source and Amount: This program receives CDC grant funds. The grants are awarded for a 3-year period and the program must reapply every year. The annual operating budget is estimated at \$335,000.

Number of staff in program: Program has two full-time employees.

Indoor Air Quality Program (DES)

Program Description: The Indoor Air Quality (IAQ) program has two principal responsibilities: (1) under RSA 10-B, to evaluate IAQ reports for state-leased and state-owned buildings submitted to determine the buildings' compliance with IAQ requirements; and (2) to conduct an IAQ outreach program that responds to the needs of state residents: responding to telephone inquiries, delivering formal presentations at various venues upon request, and developing and distributing state-specific and generic IAQ information.

Funding Source and Amount: Program is funded through the State general fund. Annual budget is approximately \$66,000.

Number of staff in program: Program has one full-time employee.

Does program conduct home visits? The program will conduct home and school walkthrough assessments upon request and when time and resources allow. Home inspections done by the programs are rare (1-2 per year). These walkthrough inspections provide advice to occupants on issues pertaining to mold, odors, etc. In most cases, requests for home inspections are referred to the town/city health officer or building code inspector as appropriate.

Injury Prevention Program (Division of Public Health Services, DHHS)

Program Description: The Injury Prevention Program seeks to reduce morbidity and mortality from intentional and unintentional injuries in New Hampshire. The program focuses its efforts on those high incidence injuries that are most amenable to public health interventions. The Injury Prevention Program manages contracts with three agencies, the Injury Prevention Center at Dartmouth College, the New Hampshire Coalition Against Domestic and Sexual Violence, and the National Alliance on Mental Illness, NH Chapter. Major activities include:

- Educating the public and others about the scope and major causes of death and disability from intentional and unintentional injuries such as (but not limited to) the work done by SAFE KIDS New Hampshire and the Suicide Prevention Council.
- Identifying and implementing effective prevention programs and strategies through the work done by (but not limited to) the New Hampshire Falls Risk Reduction Task Force.
- Collaborating with private and public sector stakeholders to increase the effectiveness of Injury Prevention Program work as reflected through the Sexual Assault Prevention Planning Committee.
- Enhancing effective public policies to reduce injuries such as through the work of the New Hampshire Teen Driving Committee.

Funding Source and Amount: The program receives funds from the Public Health Prevention and Health Services Block Grant and the Rape Prevention and Education Grant, both from the CDC; the Maternal and Child Health Block Grant from HRSA and general state funding.

Number of staff in program: Program has one full-time employee.

Does program conduct home visits? The program has had prior grants, which have allowed state program staff to conduct safety inspections in the home. However, currently the state program is not funded to conduct home visits.

Radon Program (DES)

Description of Program: The Radon Program is responsible for gathering and disseminating information on radon occurrence within New Hampshire, the health effects associated with exposure to radon, and the various means of reducing radon concentrations in both indoor air and water supplies. A statewide radon database consisting of results of indoor radon tests conducted by household residents contains several thousand readings. Geographic distribution of radon test results is used to identify the relative frequency of occurrence of elevated radon levels throughout New Hampshire. Environmental Health Program staff are available to give radon-related presentations and frequently do so for schools, real estate offices and organizations.

Funding Source and Amount: The Radon Program receives half of their funding from the state general funds and half of their funding from the EPA Radon grant program. The EPA funding must be reapplied for on an annual basis. Annual operating budget is \$250-280,000.

Number of staff in program: The program has 2 full-time employees.

Does program conduct home visits? The program will visit schools to conduct testing when requested, but typically does not conduct home visits.

Weatherization Program (Office of Energy and Planning)

Program Description: The Weatherization Program is designed to reduce household energy use and costs in the homes of low-income persons throughout the state by installing energy efficiency improvements. The overall goal of the Weatherization Program is to serve those low-income households that are most vulnerable to high-energy costs and who do not have the means of making cost-effective energy conservation improvements to their homes.

Funding Source: Program receives grants from the US Department of Energy (DOE) and the US Department of Health and Human Services. The program receives approximately \$1.5 million annually.

Number of staff in program: The Program funds six community action agencies. Each community action agency has a director, energy auditors, crews, and contractors. There are approximately 6 directors, 18 energy auditors, 4 crews with 14 members and 14 contractors overall.

Does program conduct home visits? Yes. The program conducts energy audits on homes. In most cases, homes that receive the audit also receive weatherization interventions.

V. Healthy Homes Goals: Recommendations for New Hampshire

Incorporating Healthy Homes Goals that seek to:

- 1) Ensure homes in New Hampshire meet minimum health and safety requirements,
- 2) Generate awareness of home-based health and safety hazards and provide tools to families to address them,
- 3) Reduce smoking and pesticide use in multi-family properties in the state,
- 4) Increase the number of homes that have been inspected and mitigated for radon,
- 5) Engage more multi-disciplinary partners in delivering healthy homes information, assessments, and upgrades,

The recommendations outlined below are the product of the efforts and expertise of a local, state, and national collaboration to create a comprehensive healthy homes strategic plan for New Hampshire.

VI. Key Healthy Housing Strategies

To achieve the aforementioned goals, 20 key strategies are recommended. The strategies are organized into seven categories. The state agencies or organizations in a position to collaborate on each strategy are noted as Potential Partners.

Accountability

1. **Establish a Healthy Homes Taskforce (HHTF) to oversee the implementation of the strategic plan.**

Because “healthy homes” crosses many agencies and organizations, it is critical to have a coordinating body that bears the responsibility for implementing the state’s plan. Such a body will aid in creating visibility and buy-in for healthy homes issues. The Taskforce should include representatives of key state health, housing, environmental, and energy programs as well as advocates for child health, energy conservation, environmental health, affordable housing, and property owners. State program representatives shall include but not be limited to: lead, asthma, maternal and child health, weatherization, energy conservation, affordable housing, radon, fire and safety. The Taskforce should issue an annual benchmarking report documenting successes and challenges in implementation.

Potential Partners: New Hampshire Lead Poisoning Prevention Collaborative, Department of Health and Human Services, Department of Environmental Services.

“If everyone’s responsible, no one’s responsible.”

– Leading Self-Directed Work Teams, Kimball Fisher

Program Referrals and Linkages – Create a “One Touch” Approach

2. **Develop a “One Touch” Healthy Homes Referral Network.** There is a need for accessible and accurate information on how to address housing-based health issues encountered by residents as well as housing, health, and energy program staff. This suggestion arose in the state meetings and numerous community meetings. A “One Touch” statewide system would provide both web-based and phone support to ensure that healthy housing and energy staff, as well as residents who encounter healthy homes hazards, have a comprehensive referral network for state and local technical assistance as well as financial resources. The web presence could be hosted by a non-governmental organization to provide flexibility in updating resources in a timely manner. It is possible that a “One Touch” system for healthy homes could be facilitated through the state’s existing 211 system.

Potential Partners: CLPPP, Asthma, and IAQ (Indoor Air Quality), and other programs as applicable.

3. **Develop a Healthy Homes Check-Up protocol (intake, visual assessment, testing) and promote usage among health, housing and energy programs.** A range of programs visit families in homes and have an opportunity to identify housing based health problems. Under a “One Touch” philosophy, these programs would identify and screen for high risk problems and make appropriate referrals. These data would be helpful in providing a more accurate picture of healthy homes issues. Housing, health, environmental, and energy agencies/utilities conducting home visits should coordinate to identify the common questions or priority items that should be recorded at client intake and during a visit.

Potential Partners: CLPPP, Asthma, Weatherization, Healthy Childcare NH, Home Visiting New Hampshire and IAQ.

- 4. Modify energy audits (utility supported and weatherization) to include a Healthy Homes Check-Up.** With the increased attention to energy conservation and climate change, a growing number of property owners will have residential energy audits. This represents an opportunity to bring a “One Touch” mindset to these programs, incorporating an assessment of housing based health risks and information on referrals for resources and technical expertise to address healthy homes issues.

Potential Partners: Weatherization, CLPPP, Utilities, Jordan Institute and Asthma.

- 5. Cross-train fire department, lead poisoning prevention and other health program staff, and weatherization staff who visit homes to use the Healthy Homes Check-Up and provide supplemental carbon monoxide training to fire department staff.** Fire, lead poisoning prevention, health, and weatherization staff visit over 2,000 homes per year and if trained, could identify potential healthy homes issues. Specifically, fire department personnel are most likely to receive calls of potential CO issues due to alarms or concerns from residents; yet they may not have sufficient skills to diagnose CO issues. Data from Minnesota suggests that often fire department staff do not have sufficient training to identify CO sources, particularly those not involving heating systems. In New Hampshire, there is no specific training for fire fighters in CO. However, CO training is included as part of the HazMat training class. Weatherization auditors who are skilled in diagnosing CO issues could be used to provide the training and provide technical support. Such training for fire department staff could be required as part of any state training requirements. Robust training infrastructure exists within the state’s fire department – supported by 8 full time trainers and 320 part time trainers. Approximately 8,000 professional and volunteer firefighters exist throughout the state. There are mandatory training requirements for the 2,000 full-time firefighting staff. Lead poisoning prevention staff and other health staff enter over 1,000 homes per year and could provide early detection of potential CO and other healthy homes risks evaluated by the Healthy Homes Check-Up.

Potential Partners: Weatherization and CLPPP, Asthma, other programs as applicable.

- 6. Explore how programs administering affordable housing renovation and construction funds can prioritize homes for renovations using healthy homes criteria.** Weatherization programs provide energy efficiency upgrades to over 700 units per year across the state. Priority units would be identified through use of the Healthy Homes Check-Up. Community Development Block Grant (CDBG) funds may be directed to a variety of purposes at the local level including: building parking garages, extending sewer lines, building public facilities like senior centers, supporting housing rehabilitation, and financing of local business expansions, etc., all with the requirement that the funding be used to benefit low to moderate income residents. In Federal Fiscal Year (FFY) 2008, the New Hampshire Community Development Finance Authority administered \$9,077,193 of federal CDBG funds that supported work in five entitlement cities: Manchester, Nashua, Portsmouth, Dover, and Rochester. The allocation of funds for projects is generally locally controlled and, in some of these communities, such funds have been used to help support lead hazard control projects. When public funds are used to bring energy conservation or construct/renovate housing, it is an opportunity to prioritize homes with potential housing-based health concerns.

Potential Partners: Weatherization, Community Action Agencies, NH Community Development Finance Authority, New Hampshire Housing, local CDBG entitlement communities.

Codes and Regulations

7. **Share model legislation that mitigates housing-related health risks with municipalities and policy makers.** Legislation is an effective mechanism to ensure statewide action to protect residents against housing based health concerns where market-based strategies have failed. Stakeholders voiced support for the adoption of the International Property Maintenance Code (IPMC) in every strategic planning meeting. Communities with codes for existing housing (e.g., Manchester and Berlin) cited instances where the code was essential in spurring action to rectify a health issue. The IPMC is a model property maintenance code. Over 600 jurisdictions nationwide, including Virginia and New York states, have adopted the IPMC. The National Center for Healthy Housing has posted case studies documenting the cost-effectiveness of the IPMC at: http://www.healthyhomestraining.org/ipm/Case_Study_Costs_10-26-07.pdf. Stakeholders expressed a concern that housing codes be carefully implemented to consider cultural norms, particularly for issues such as crowding. A sensible approach to enforcement is needed to ensure that the new requirements do not result in homelessness. Property owners commenting on the draft strategic plan also raised concerns about balancing affordability with safety and ensuring that new regulations do not create barriers to affordable housing.

Several contaminant-specific legislative efforts could address key risks such as CO, radon, and drinking water. With rising heating costs, stakeholders expressed concern about unsafe heating options that could result in additional CO problems during the winter months. Fifteen states now require CO alarms in residential housing including Vermont, Connecticut, Massachusetts and Rhode Island.¹³ Further, roughly, one-third of homes in New Hampshire have radon concentrations during the winter months that exceed EPA's Action Guideline for mitigation. The risk associated with radon is an increased chance of developing a lung cancer. According to the EPA, installation of radon control systems during new construction is approximately \$250-\$350. Requiring radon-resistant construction in the highest risk areas of New Hampshire would substantially reduce residents' risk of developing radon-related lung cancer. New Jersey currently requires residential buildings and schools in high-risk radon areas be constructed in a manner to minimize radon levels. Minnesota passed similar legislation in 2007 and will be implementing a statewide requirement for radon-resistant construction in 2008-09. Numerous other states require disclosure of radon results at real estate transfer.¹⁴ Finally, stakeholders consistently identified the issue of unsafe drinking water in rural areas not served by public water. Increased testing of non-public drinking water is one strategy for addressing this issue. Possible legislative initiatives include:

- a. Municipalities choosing to adopt the International Property Maintenance Code (IPMC) with funding for local code enforcement (IPMC would not pre-empt local housing codes).

¹³ National Conference of State Legislatures, www.ncsl.org – and <http://www.ncsl.org/programs/environ/EnvHealth/IAQDES.htm>, 2008.

¹⁴ Ibid.

- b. The installation of carbon monoxide alarms in all new and existing residential rental housing units with fossil fuel burning equipment and woodstoves.
- c. Radon mitigation for all new residential structures in high-risk areas and disclosure of radon testing results at real estate transfer.
- d. Funding and testing all non-public drinking water systems for arsenic and other contaminants.

Potential Partners: HH Taskforce and Policy Makers.

Education and Outreach

8. **Develop a Healthy Homes School Curriculum to train students to perform Healthy Homes Check-Ups and make referrals to resources.** This suggestion was raised in both the state and community meetings. The curriculum could be used at high schools and help students satisfy community service requirements. Community colleges, vocational schools, nursing schools, and other schools could also use it. Students completing the curriculum would increase the capacity of local communities to identify healthy homes issues. Protocols exist at the Community Environmental Health Research Center (www.cehrc.org) and the National Healthy Homes Training Center's Pediatric Environmental Home Assessment (www.healthyhomestraining.org). Howard County, Maryland has a successful high school program that trains students to conduct residential energy audits. As appropriate, the curriculum could also be paired with obtaining the national healthy homes credentials providing students with certifications that could assist them in obtaining work post-graduation. Credentials might include: Lead Sampling Technician, Lead Safe Renovator, Healthy Homes Specialist, National Pest Management IPM credential, HERS raters. The program could also incorporate an advocacy section, teaching students how to use information to help propel change in their communities.

Potential Partners: Department of Education, Department of Health and Human Services, Department of Environmental Services, Community Action Programs (Weatherization and HOME programs), Northern New England Poison Control, local school districts.

9. **Develop a social marketing campaign and accompanying collateral materials to promote the Healthy Homes Check-Up program.** A model press kit could be used by local health, housing, and energy staff to help promote the Healthy Homes Check-Up program. State personnel have the expertise to develop the kit for use by local staff and could provide training to assist with implementation. The campaign would include the development of a series of radio and television spots and toolkits linked to seasonal healthy homes issues (e.g. unsafe heating equipment prior to the heating season, lead-safe renovation messages in the spring, radon testing during Radon Awareness Month, asthma triggers on World Asthma Day). Paid media should be considered to optimize the impact and the evaluation of the campaign. The program could be linked to "Healthy Homes Check-Ups" by students, code inspectors, weatherization staff, lead poisoning prevention staff, and fire departments. In addition, the program could link to Healthy Child Care NH, Home Visiting New Hampshire, Healthy Schools, and Safe Routes to School to maximize the reach and impact of the campaign.

Potential Partners: CLPPP, Asthma, IAQ, Drinking Water, Weatherization, Radon, Fire Departments, and the Department of Education.

High-Impact Strategies for Multi-Family Housing

10. Promote Smoke-Free Housing policies in public funded affordable multi-family housing and market rate housing. Smokers live in approximately one-third of New Hampshire homes. Smoke-Free policies can reduce harmful second-hand smoke exposures in rental properties and offer property owners savings in maintenance fees. A key leverage point to promoting Smoke-Free affordable housing exists with a modification to the New Hampshire Qualified Allocation Plan which helps to define the scoring criteria for funding of affordable housing projects. The specific recommendation is to include a 2 point scoring advantage for developing Smoke-Free affordable rental housing with Low Income Housing Tax Credits. In response to this action item, the New Hampshire Housing Board of Directors and Governor Lynch approved the inclusion of a 2 point scoring advantage for Smoke-Free housing; this policy change is official and effective on January 1, 2009. In addition, several New Hampshire Housing Authorities (e.g., Lebanon, Claremont, Salem, and Exeter) and affordable housing developers (e.g., Meadows Road Senior Housing) have already committed to Smoke-Free housing and could be effective spokespeople for any such initiative in existing housing. Key steps include modifying funding selection criteria for the New Hampshire Qualified Action Plan affecting the Low Income Housing Tax Credit (completed), obtaining endorsement of Smoke-Free by the New Hampshire Property Owners' Association (NHPOA) and New Hampshire Housing Authorities Corporation, and creating a New Hampshire web-based registry of smoke-free publicly funded and private market apartments.

Potential Partners: Asthma, New Hampshire Housing, Tobacco Control, Fire Safety, NHPOA, New Hampshire Housing Authorities Corporation.

11. Promote Greener Pest Management (Integrated Pest Management) policies. Certain pests can lead to the development and exacerbation of asthma (e.g., mice, cockroaches), and inappropriate use of pesticides can create harmful exposures. Relying on Integrated Pest Management (IPM) strategies that reduce the use of spraying can improve health conditions and more effectively address pest problems (e.g., mice, cockroaches). To promote IPM, publicly-funded housing programs could provide training on and promote the use of use IPM. In addition, the NHPOA and New Hampshire Housing Authorities Corporation could support IPM policies and offer IPM training to their constituents. Weatherization programs include pest exclusion activities as part of program specifications.

Potential Partners: Asthma, New Hampshire Housing, Weatherization, NHPOA, New Hampshire Housing Authorities Corporation, Healthy Child Care New Hampshire.

Data Collection and Use

12. Create a Healthy Homes Data Book documenting key health and housing indicators; update annually. Consistent state data would provide a baseline and ongoing information to help structure programs and measure improvements. Rhode Island has created a similar data book. The factsheets developed for this strategic planning project could serve as the preliminary report card. Key health indicators that have been established as part of the Annie E. Casey Foundation (www.aecf.org) healthy homes indicators project include: age of housing, history of lead poisoning, history of asthma, rental tenure, poverty, damp homes, and presence of pests. Other data items that could be reported include: radon levels, carbon

monoxide risk and hospitalizations, home based injuries, private well drinking water tests, asthma hospitalizations, availability of affordable housing, energy conservation work in units, affordable housing rehab with healthy homes elements, green residential structures created, and homes with radon resistant construction or mitigation systems. The report should also include information about the costs of inaction with respect to lead, radon, carbon monoxide, and injuries. The World Health Organization recently released a document entitled “The Burden of Unhealthy Housing.” The report effectively highlights the cost of inaction and the savings that can be accrued through primary prevention of housing-related illnesses and injuries. Under this recommendation, the Healthy Homes Taskforce would build on the existing report on lead authorized by the SB 176 Study Commission to include the burden of other housing-related diseases and injuries.

Potential Partners: Healthy Homes Taskforce, CLPPP, Asthma, Maternal and Child Health Epidemiologists, Environmental Health Tracking.

- 13. Use radon data to target testing/outreach to highest risk areas.** During the home heating season, approximately one-third of New Hampshire homes may have levels of radon that exceed EPA’s Action Guideline of 4 picocuries per liter, yet many residents have not tested for radon in their homes. Testing is relatively inexpensive, and proven remediation actions exist. Free testing equipment could help supplement an established program. The NH DES Radon Program is currently conducting outreach that targets different communities each year. This action item would support such efforts and link them to possible provision of free testing equipment and data gathering on the number of homes that install radon mitigation systems. Distribution of radon testing equipment could also include broader healthy homes educational materials, referrals, and healthy homes checkups.

Potential Partners: Radon, Weatherization and other home visiting programs.

Funding

- 14. Explore further the recommendation of the 2008 SB 176 Study Commission to adopt a state paint fee to fund lead and healthy homes work.** A fee on paint sales could raise substantial funds to supplement public resources currently available to property owners to address lead hazards and healthy homes issues. A paint can fee would create a constant revenue stream to support a lead and healthy homes infrastructure for education and outreach, as well as lead and health-related building repairs. A similar fee adopted in Maine has raised \$800,000 in its first year and was supported by property owners as it created additional resources. The Maine funds are being used for education and outreach as well as lead hazard testing. Maine is exploring the modification of its program to enable funds to be used for lead hazard control and building repairs. New Jersey has also instituted a fee on paint sales to support lead work. State legislation would be required to assess such a fee on the sale of paint and to direct the resultant funds to lead poisoning prevention and health-related housing repairs.

Potential Partners: The New Hampshire Lead Poisoning Prevention Collaborative, CLPPP Advisory Committee, NH Legislature.

- 15. Conduct outreach to New Hampshire and New England foundations on the healthy homes strategic plan and funding needs.** Foundations provide substantial resources that can be directed to healthy homes issues. The results of this strategic planning effort should be

shared with funders to help them understand this statewide effort and make them aware of key funding priorities for action.

Potential Partners: Healthy Homes Taskforce, the New Hampshire Lead Poisoning Prevention Collaborative, New Hampshire and New England grant makers.

- 16. Explore diverse funding sources for local housing code enforcement.** Feedback throughout the statewide planning process and experience in other jurisdictions reaffirms that it is essential to fund staff to enforce housing codes. This is linked to the earlier recommendation to adopt the IPMC statewide to provide a consistent code applicable to existing housing. Berlin and Manchester both have housing codes and local enforcement staff. Any state funding would require state legislative action. Aside from statewide funding, there may also be opportunities to require key code compliance with renovations. For example, a new federal Neighborhood Stabilization Program will provide \$19 million to the State of New Hampshire this fiscal year. This program will be used to rehabilitate foreclosed homes. All homes must meet the federal lead-based paint requirements and be brought up to code. State administrators of this funding are required to submit a plan for how the funds will be used by December 1, 2008. This presents a significant opportunity to influence the way homes are renovated in New Hampshire by defining target codes and other health, green and energy efficiency standards.

Potential Partners: Healthy Homes Taskforce, New Hampshire Housing, Policy Makers.

- 17. Support funding a joint energy and health initiative to conduct combined energy conservation audits and Healthy Homes Check-Ups.** This initiative would implement a collaborative energy conservation and health audit program to address two key issues for families: the rising costs of energy and health care costs. The initiative would bring a “One Touch” mindset to any new housing-based auditing effort. The Jordan Institute and others are currently pursuing an initiative to dramatically increase funding for energy efficiency activities, some of which will be directed at the residential housing sector. This presents a unique opportunity to incorporate healthy homes concepts into energy efficiency work. The program could use high school students (see #8 above), college students, existing state and local health and housing staff, and utility program staff/contractors to conduct the Check-Ups. The program could also be marketed to first time homebuyers.

Potential Partners: Utilities, Foundations, Jordan Institute, and the Public Utilities Commission (PUC).

- 18. Promote grant and technical support program for local healthy homes initiatives.** Local health, housing, and energy professionals as well as affordable housing advocates, underscored the need for funding and technical assistance to enable them to undertake new healthy homes programs. Both funding and access to expertise were identified as useful. Such a program could target high risk communities.

Potential Partners: CLPPP, Asthma, and Weatherization.

- 19. Explore with local banks the feasibility of no-interest loans for energy conservation and health upgrades.** No interest loans would fund a specific set of eligible healthy homes and energy conservation efforts. Several action items discussed above would roll out the energy audit and Healthy Homes Check-Ups, identifying energy savings and health-related housing

repairs. However, for some residents, additional funding will be needed to undertake the needed repairs. The energy conservation efforts would pay for themselves over a specified period of time resulting in savings in operating expenses that would enable families to pay back the loans. Such loans would be similar to lead abatement loans.

Potential Partners: Jordan Institute, local banks providing lead abatement loans, NH Property Owners Association.

VII. Healthy Homes Goals Summary

The following is a summary of the overarching goals, strategies, and preliminary performance metrics. The numeric citation following each strategy corresponds with the strategies in Section V of this report.

| Healthy Homes Goal | Strategy | Preliminary Performance Metrics |
|---|---|---|
| <p>1. Ensure homes in New Hampshire meet minimum health and safety requirements</p> | <p>Encourage municipalities to adopt the International Property Maintenance Code (IPMC); recommend CO alarms in all new and existing residential housing units with fossil fuel burning equipment or woodstoves; fund statewide testing of non-public drinking water systems; recommend radon mitigation in new construction and disclosure of radon results (#7).</p> <p>Support the recommendation of the SB 176 Study Commission to adopt state paint fee to fund lead and healthy homes work (#14).</p> <p>Conduct outreach to New Hampshire and New England foundations on the healthy homes strategic plan and funding needs (#15).</p> <p>Encourage local banks to provide no interest loans for energy conservation and health upgrades (#19).</p> <p>Support funding for local housing code enforcement (#16).</p> | <p># of jurisdictions adopting IPMC & HH codes. # of code enforcement officers. # of homes meeting HH code. # of homes with working CO alarms. State/local laws requiring CO alarms. Establishment of radon disclosure law. # of wells tested.</p> <p>Establishment of state paint fee. Amount of funding generated by paint fee.</p> <p>Amount of funding generated through foundation sources.</p> <p>#of loan programs available for energy and healthy upgrades. # homes receiving funding.</p> <p>Amount of state or local funding allocated for housing code enforcement.</p> |
| <p>2. Engage more multi-disciplinary partners in delivering health homes information, assessments, and upgrades</p> | <p>Establish a Healthy Homes Taskforce to oversee the implementation of the strategic plan (#1).</p> <p>Develop “One Touch” Healthy Homes Referral</p> | <p>Creation of HH Taskforce Annual benchmarking report published.</p> <p>Referral network initiated.</p> |

| Healthy Homes Goal | Strategy | Preliminary Performance Metrics |
|--|---|---|
| | <p>Network (#2).</p> <p>Develop a Healthy Homes Check-Up protocol and promote usage among health, childcare, housing, and energy programs (#3).</p> <p>Support funding a joint energy and health initiative to increase the number of homes receiving energy audits and weatherization with a Healthy Homes Check-Up (#17).</p> <p>Cross-train fire department, lead poisoning prevention and other health program staff, and weatherization staff (#5).</p> <p>Encourage programs to prioritize units identified through Healthy Homes Checkup for CDBG and Weatherization assistance (#6).</p> <p>Promote grant and technical support programs for local healthy homes initiatives (#18).</p> | <p>Healthy homes check-up protocol created. Energy audit protocol amended to include Healthy Homes Checkup.</p> <p># homes receiving Healthy Homes Checkups. # of Healthy Homes Checkups carried out by energy auditors.</p> <p># of individuals trained in healthy homes.</p> <p># of homes prioritized for weatherization and CDBG funding for health and safety upgrades.</p> <p>Grant and technical assistance program established.</p> |
| <p>3. Protect families from radon exposure in their homes</p> | <p>Use radon data to target testing/outreach to highest risk areas (#13).</p> | <p># of homes tested for radon. # of homes mitigated for radon.</p> |
| <p>4. Reduce smoking and pesticide use in multi-family properties.</p> | <p>Promote Smoke-free Housing policies in multi-family affordable and market rate housing (#10).</p> <p>Promote Spray-free and Integrated Pest Management (IPM) policies in affordable and market rate housing (#11).</p> | <p>Inclusion of incentive points for Smoke Free in QAP (completed). # of smoke-free housing policies. # of smoke-free multi-family properties. Development of statewide smoke-free property registry. # of IPM trainings held. # of multi family properties following IPM.</p> |

| Healthy Homes Goal | Strategy | Preliminary Performance Metrics |
|---|--|--|
| | | Weatherization specs incorporates pest exclusion. # units receiving weatherization with pest exclusion. |
| 5. Generate awareness of home-based health and safety hazards and provide tools to families to address them | Develop Healthy Homes School Curriculum for student volunteers (high school and college) (#8). Develop a statewide social marketing campaign (#9). Create Healthy Homes Data Book, including the cost of inaction (#12). | Healthy Homes Model Curriculum developed and piloted in one location. # homes with completed HH Checkups. Social marketing campaign created. Healthy Homes Data Book created. |