# State of Connecticut Department of Public Health 2017 Healthy Homes Surveillance Report

Keeping Connecticut Healthy

DPH Connecticut Department of Public Health

Healthy Homes Initiative

*Good Health Begins at Home*

www.ct.gov/dph/healthyhomes

Prepared by:

Jimmy Davila, BS / Krista M. Veneziano, MPH, CHES, RS
Epidemiologists
Connecticut Department of Public Health
Lead, Radon and Healthy Homes Program

With technical support from
Health Resources in Action
95 Berkeley St, Boston, MA 02116
Phone: (617) 451-0049

For additional information about the CT Department of Public Health
Healthy Homes Initiative contact:
Connecticut Department of Public Health
Lead, Radon, and Healthy Homes Program
410 Capitol Avenue, MS# 12LED
PO BOX 340308
Hartford, Connecticut 06134
Phone: (860) 509-7299

6/30/2017

*Suggested citation: Davila, J., Veneziano, K. (2017). State of Connecticut Department of Public Health 2017 Healthy Homes Surveillance Report. Hartford, CT: Connecticut Department of Public Health*.

# Acknowledgements


CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

COMMISSIONER
Raul Pino, MD, MPH

DEPUTY COMMISSIONERS
Janet Brancifort, MPH
Yvonne Addo, MBA

REGULATORY SERVICES BRANCH
ENVIRONMENTAL HEALTH SECTION
Chief – Suzanne Blancaflor, MS, MPH

LEAD, RADON, AND HEALTHY HOMES PROGRAM
Supervising Epidemiologist – Krista M. Veneziano, MPH, CHES, RS

**Staff**
Waynett Bobbs, BS
Lisa Bushnell, BS, RS
Jimmy Davila, BS
Sherine Drummond, BS
Princess Fletcher-Watson, REHS, ASP
Christine Hahn, MPH
Lynn Hudak, BGS
Tsui-Min Hung, MHS
Tina McCarthy, BS
Denise Ortiz, MPH
Kimberly Ploszaj, BS, EMT-B
Allison Sullivan, BA

# Table of Contents

# EXECUTIVE SUMMARY

## Background

The Connecticut Department of Public Health's Healthy Homes Initiative was developed as a holistic and comprehensive approach to achieving the vision that 'Every Connecticut resident lives in a healthy and safe home environment.' Based upon the recognized connection between a home's environment and health, the Initiative sought to address the physical, chemical, and toxic hazards in Connecticut homes through many program activities: in-home assessment is one such activity. Healthy Homes Assessments are led by experts who make an extensive examination of the home environment to identify problems, make recommendations or referrals, and provide safety equipment and other educational resources.

Data from the Healthy Homes Assessments conducted across Connecticut are a valuable source of information on the prevalence and persistence of hazards and health-related issues in Connecticut homes. This report summarizes Healthy Homes Assessment findings from 1,502 homes performed by six local health departments and one partner agency (Bridgeport Health Department, Milford Health Department, New Haven Health Department, Quinnipiack Valley Health District, Torrington Area Health District, Uncas Health District, and the Connecticut Children's Healthy Homes Program). The report also includes the results of reassessments conducted on 375 homes. The dates of the assessments and reassessments ranged from September 2010 to September 2016.

## Home Characteristics

Most of the 1,502 homes assessed were multi-apartment rental homes (66%) followed by owner-occupied, single family homes (21%), single family rentals (8%), or other (4%). Assessed homes were older than the typical Connecticut home. Approximately 70% in the assessment sample were built prior to 1950 compared to 29% for the state overall. Over 40% of assessed homes had at least one child under age 6 and approximately 10% had at least one senior resident (age 65 or older).

## Assessment Findings

A total of 56 individual deficiencies across 4 categories (general and exterior conditions, interior conditions, general home safety, and indoor environmental quality) were examined during analysis of the Healthy Homes Assessment data. At least one deficiency was noted in 99% of homes with a total of 20,882 deficiencies noted across the

## 7 Features of a Healthy Home

CLEAN – to reduce pests, dangerous chemicals, and asthma triggers

DRY – to reduce pests and mold

SAFE – to reduce accidents and injuries

FREE OF PESTS – to prevent diseases and reduce asthma triggers

WELL VENTILATED – to provide fresh air and reduce breathing problems

FREE OF DANGEROUS CHEMICALS (like lead, asbestos, radon) – to reduce poisonings, injuries, and other harmful effects

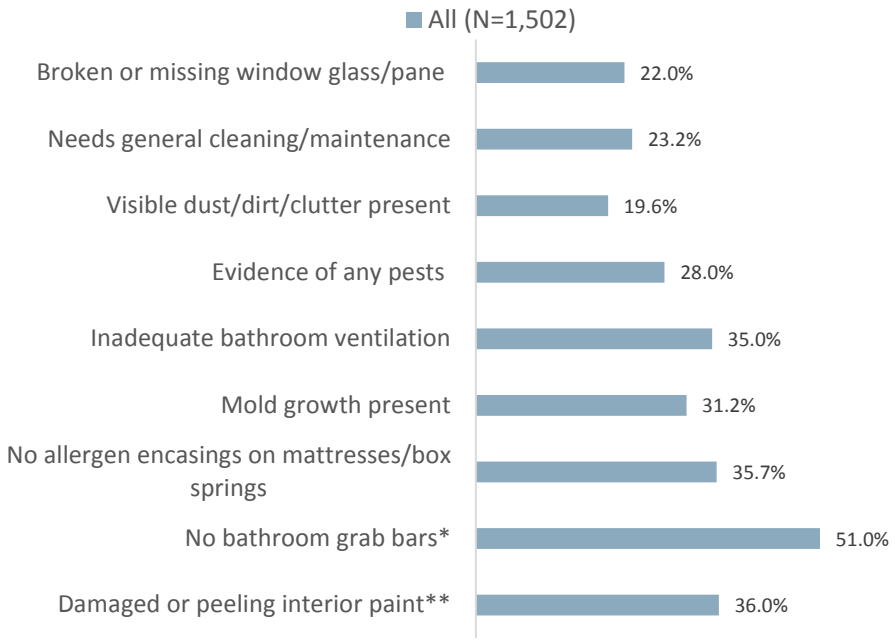
WELL MAINTAINED – to keep small problems from becoming big problems

*Healthy Homes Data Book, Connecticut Department of Public Health, Healthy Homes Initiative*

1,502 assessments (average of 13.9 deficiencies per home). Homes built before 1950 had a higher average number of deficiencies identified (14.9 per home).

**Figure 1** illustrates the prevalence of a select set of deficiencies that are of particular concern as they directly relate to the key features of a healthy home (see side bar above). At Assessment, approximately one quarter to half of homes had at least one of these issues present. The most common issues were no bathroom grab bars in homes with senior residents (51%), damaged or peeling interior paint in older homes with children age 6 or younger (36%), no allergen encasings on mattresses/box springs (35.7%), and inadequate bathroom ventilation (35%).

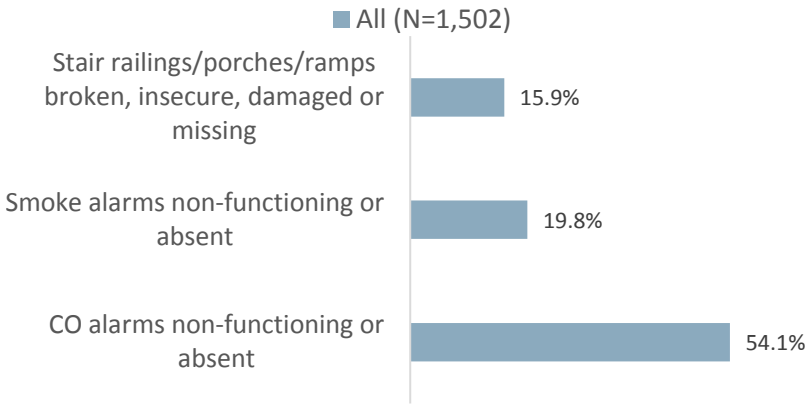
**FIGURE 1. PREVALENCE OF DEFICIENCIES OF MAJOR CONCERN AT ASSESSMENT**




**Homes with Senior present only, N=149*
***Homes with children < 6 present AND built pre-1978 only N=572, due to risk of lead exposure*

In addition to deficiencies in and around the home, eight specific imminent hazards were examined during the assessment. These were specific conditions considered to be immediate threats to health and safety, such as broken or missing stairs, inadequate stairwell lighting, or lack of carbon monoxide (CO) alarms. At least one imminent hazard was noted in 73% of homes with a total of 1,921 hazards noted across the 1,502 assessments (average 1.3 hazards per home).

**FIGURE 2. PREVALENCE OF IMMINENT HAZARDS AT ASSESSMENT**

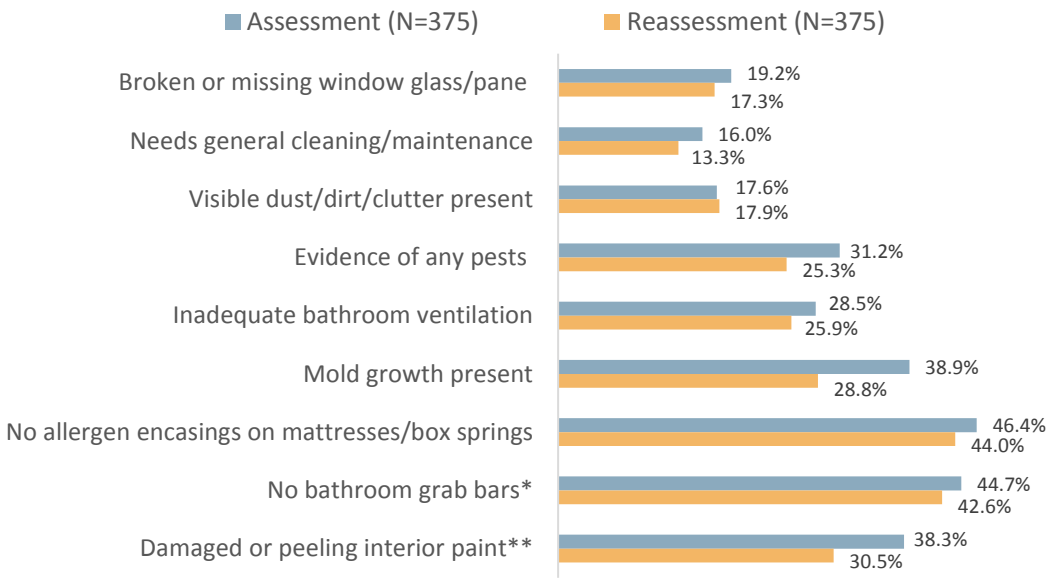



Of the eight imminent hazards assessed, those that are of most concern due to the risk to health include the absence of CO alarms (54.1%), the absence of smoke alarms (19.8%), and the presence of stair railings, porches or ramps that are broken, insecure, or missing (15.9%) (**Figure 2**).

## Reassessment Findings

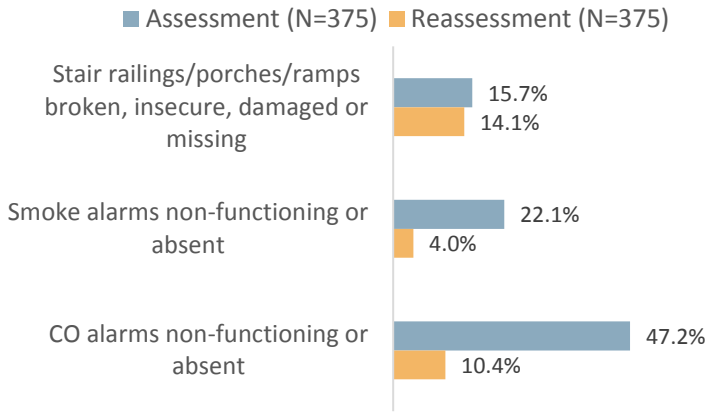
Of the 1,502 homes in the Healthy Homes Assessment sample, 375 were reassessed, which allowed for the examination of deficiency and hazard prevalence over time and the identification of issues found during the first home assessment that were corrected or remediated prior to being reassessed. Overall, the prevalence of most deficiencies declined slightly between the time of the assessment and the reassessment in this group of 375 homes, **Figure 3**. The one area that decreased to a notable extent was "mold growth" from 38.9% at assessment to 28.8% at reassessment.

**FIGURE 3. CHANGE IN PREVALENCE OF DEFICIENCIES OF MAJOR CONCERN**




**Homes with Senior present only, N=149*
***Homes with children < 6 present AND built pre-1978 only N=572, due to risk of lead exposure*

**FIGURE 4. CHANGE IN PREVALENCE OF IMMINENT HAZARDS**




In this group of 375 homes, two of the most concerning imminent hazards decreased greatly in prevalence (**Figure 4**). The rate of missing/non-functioning smoke alarms decreased from 22.1% to 4.0%. Likewise, the rate of missing/non-functioning CO alarms decreased from 47.2% to 10.4%.

Much of this improvement can be attributed to the number of smoke and CO alarms that were distributed to homes at the time of the initial assessment (361 CO alarms and 386 smoke alarms were distributed across all 1,502 homes).

Analysis was focused at the individual home level rate to determine whether or not residents (or property owners) corrected or remediated deficiencies and hazards after they were identified. This 'case correction' varied greatly depending upon the deficiency or hazard examined. About a third of deficiencies and/or hazards were corrected in less than 20% of cases while about one in ten deficiencies and/or hazards were corrected in approximately two-thirds of cases. Issues that were corrected in a larger number of cases were predominately safety issues and hazards such as obstructed exits and walkways (40.9% case correction), smoke alarms (77.1% case correction), CO alarms (75% case correction), keeping cleaning supplies or chemicals out of children's reach (41.7% case correction), or lack of non-slip bath/shower surface in homes with seniors (38.9% case correction). Most other issues were corrected in less than 20% of cases identified during the initial Assessment.

## Summary and Recommendations

The Healthy Homes Assessment and Reassessment data suggests that the issues and hazards identified during the Healthy Homes Assessments are both common and persistent over time, at the population level. Correction of identified issues and hazards, within the reassessment timeframe is also low at the individual case level, which suggests that residents face challenges in addressing issues in a timely manner. This is most concerning for those deficiencies and hazards that pose a particularly high risk to health.

Additional education and the identification of strategies is needed to assist residents and property owners with preventing hazards and/or the correction of hazards. *General Knowledge and Awareness* is one of the three priority areas of the 2017 Healthy Homes Strategic Plan. Additional priorities of the Plan include, focusing on the development of *Policies, Guidelines, and Practices;* the *Implementation* of a coordinated statewide approach to achieve and maintain a healthy and safe home environment; and the identification and development of a competent, multi-disciplinary *Workforce* with a holistic approach and practice to achieve healthy homes.

# BACKGROUND

The Healthy Homes Strategic Plan, released by the Connecticut Department of Public Health in 2011, established the vision that *"Every Connecticut resident lives in a healthy and safe home environment."* This report represents one of the objectives outlined in the strategic plan, which is to provide access for partners to comprehensive compiled data for planning and coordination of Healthy Homes activities via a statewide data book of Healthy Homes inspection data and trends. As hazards in the home may cause or exacerbate a number of illnesses and injuries, this report aims to describe the current home environments of Connecticut residents and to quantify hazards identified during Healthy Homes Assessments in order to inform strategic planning activities. In 2009, the Surgeon General issued a Call to Action to Promote Healthy Homes using scientifically proven steps to reduce hazards in the home.[1] This report additionally serves to evaluate the impact of Connecticut's Healthy Homes interventions to remediate hazards that are identified during assessments.

## Methods

The data presented in this report were retrieved from the Healthy Homes Surveillance System that was developed by the Lead, Radon, and Healthy Homes Program. The system, which went live in 2013, is web-based which allows for secure, remote access by local health department and partner agency staff. The question packages in the surveillance system mirror the Healthy Homes Assessment Checklist (HHAC) developed for use during inspections, allowing for easy manual entry of the data. Results are summarized across the 1,502 initial Healthy Homes Assessments and the 375 reassessments that were performed between September 10, 2010 and September 29, 2016 by six local health departments and one partner agency (**Table 1**):

- Bridgeport Health Department
- Connecticut Children's Healthy Homes Program (CCHHP) formerly Lead Action for Medicare Primary Prevention (LAMPP)
- Milford Health Department
- New Haven Health Department
- Quinnipiack Valley Health District
- Torrington Area Health District
- Uncas Health District

## Assessment Information

A Healthy Homes Assessment (HHA) aims to identify hazards in the home that threaten the health and safety of the home's occupants. Although not a requirement, the Essentials for Healthy Homes Practitioners Training will provide the inspector with skills on how to identify and resolve hazards in the home. The inspector will perform a HHA using the DPH created HHAC, which outlines demographic information for the home and residents and hazards that may be found in the home. The inspector not only identifies the hazards, he/she reviews steps the occupants can take to minimize or eliminate the hazards. If the inspector is a regulating authority, he/she will also order the property owner to correct the hazards. If the inspector is not a regulating authority he/she is responsible for making a referral to

[1] U.S. Department of Health and Human Services. The Surgeon General's Call to Action to Promote Healthy Homes. U.S. Department of Health and Human Services, Office of the Surgeon General, 2009

the proper authority (e.g., local health department, local building official, local fire marshal) for enforcement. Detailed information related to the hazards included in this report is available in the *Connecticut Healthy Homes Data Book*, available at: http://www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/hh_data_book.pdf.

***TABLE 1. NUMBER OF ASSESSMENTS AND REASSESSMENTS CONDUCTED BY AGENCY***

| | Assessments | Reassessments |
|---|---|---|
| **Total** | **1,502** | **375** |
| Bridgeport Health Department | 344 | 1 |
| Connecticut Children's Healthy Homes Program (CCHHP), formerly LAMPP | 855 | 259 |
| Milford Health Department | 62 | 25 |
| New Haven Health Department | 44 | 0 |
| Quinnipiack Valley Health District | 44 | 17 |
| Torrington Area Health District | 97 | 31 |
| Uncas Health District | 56 | 42 |

# FINDINGS

## General Housing Characteristics

The General Housing Characteristics section of the assessment checklist contains questions that pertain to housing attributes such as the age of home, foundation type, type of ownership, heating, cooling and ventilation. The section also includes some occupant demographic information, such as the age of the occupants.

### Type of Ownership

Most of the 1,502 homes assessed were multi-apartment rental homes (66%) followed by owner-occupied, single family homes (21%), single family rentals (8%), or other (4%). The category of 'other' was primarily comprised of owner-occupied multi-family homes. In contrast, the majority of homes in Connecticut overall are owner-occupied (67.5%) while a smaller proportion are renter-occupied (32.5%).[2] Thus, the homes targeted by the Healthy Homes intervention are characteristically distinct from the average Connecticut home.

### Age of Homes

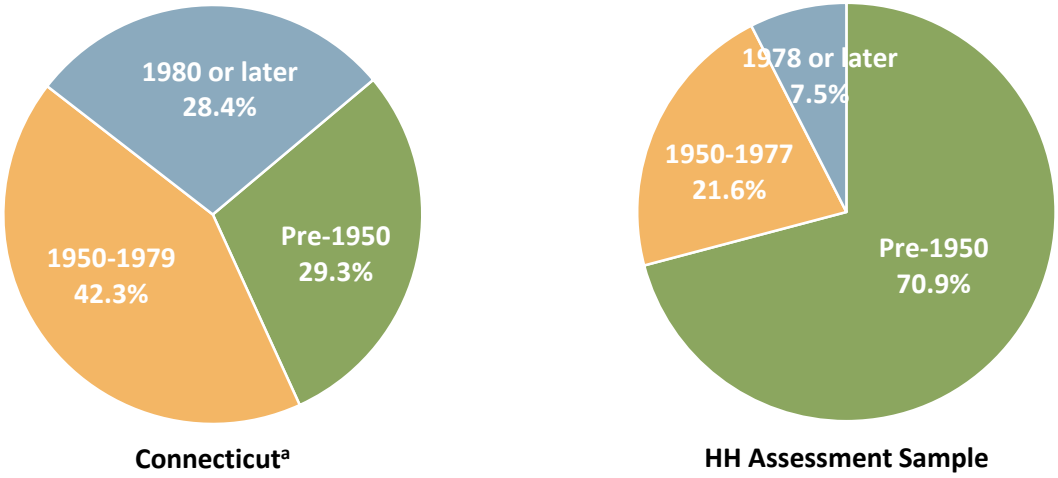
Homes that were included in Healthy Homes Assessments were also older than the typical Connecticut home. As illustrated in **Figure 5**, approximately 70% of homes assessed were built prior to 1950 and only 7.5% were built after 1978. Whereas, for the state overall, less than one third (18.5% nationally) of homes were built prior than 1950 and over a quarter (44.2% nationally) were built in 1980 or later.

The year a home was built is an important factor in assessing the health risks of a home. Those built prior to 1978, and particularly those built prior to 1950, pose the greatest risk of lead exposure due to the paint being manufactured with lead during that era. Children living in homes built prior to 1978 are

[2] US Census, American Community Survey, 5-year estimate (2011-2015)

at a higher risk of exposure to lead. In the assessment sample, there were a total of 1,293 homes built before 1978 and children under the age of 6 were living in 44% of these. More detailed data related to children and exposure to lead can be found in the *Indoor Environmental Quality* section.

***FIGURE 5. AGE OF HOMES IN CONNECTICUT AND ASSESSMENT SAMPLE***

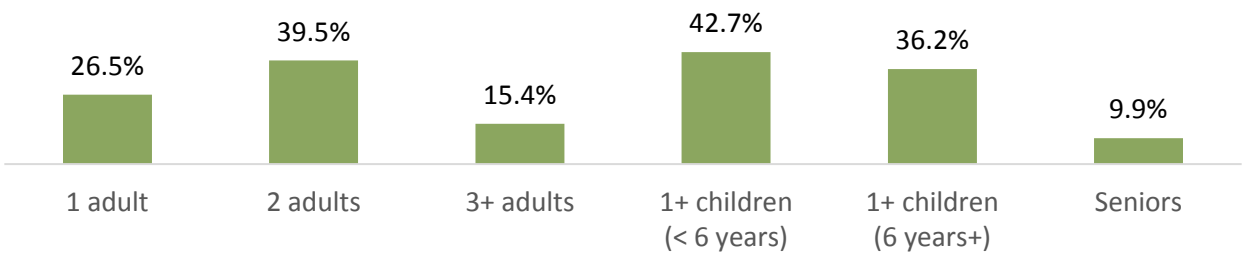



*[a] DATA SOURCE: U.S. Census Bureau, American Community Survey, 5-Year Estimates, 2011-2015*
*NOTE: For the HH assessment sample, missing responses (N=104) were excluded when calculating percentages*

## Occupancy

While data on the age and number of occupants was unavailable for 144 (9.5%) of the 1,502 homes, the average occupancy for homes with data was 3.3 persons and the total number of occupants was calculated to be 4,542 individuals (997 children under age 6; 957 children age 6 or older; 2,395 adults age 18 to 64 years; and 193 seniors age 65 years or older). As illustrated in **Figure 6**, over 40% of homes in the assessment sample had at least one child under the age of 6 years and over a third of homes had at least one child that was age 6 years or older. A smaller proportion of homes had one or more seniors, age 65 years or older (9.9%), in residence.

***FIGURE 6. OCCUPANCY OF HOMES IN ASSESSMENT SAMPLE, BY AGE GROUP***




*NOTE: Categories are not mutually exclusive; percentages may not sum to 100%*

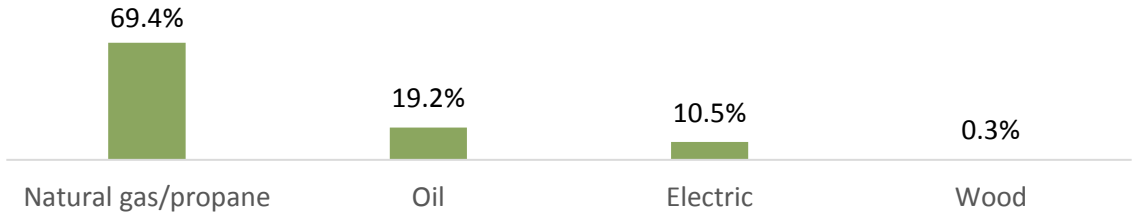
# Heating, Cooling, and Ventilation

## Heating

The clear majority of homes in the assessment sample reported their heating fuel type to be natural gas or propane (69.4%) as shown in **Figure 7**. In contrast, only 37.1% of homes in Connecticut overall use natural gas or propane as their heating fuel type, while 44.0% of homes in Connecticut utilize oil[3].

Additionally, assessments indicated that 68.4% of the 1,502 homes used radiators/baseboard as their heating source and 26.6% of homes used forced hot air. Access to heating controls was recorded as 'hard to control' or 'no access to control' among 13.1% of homes assessed and the proportion was slightly lower among owners (12.0%) compared to renters (13.8%).

***FIGURE 7. HEATING FUEL USED BY ASSESSMENT SAMPLE***




*NOTE: Multiple responses allowed; percentages may not sum to 100%*

## Cooling and Ventilation

Among the 1,502 homes assessed, 57.7% used only windows and/or fans as a source of cooling. This rate was much lower among owner-occupied homes (36.4%) than renter-occupied homes (64.5%). Central or window A/C was reported for 35.3% of the assessed homes.

Ventilation is also included in the Healthy Homes Assessment. Proper ventilation allows fresh air to circulate and can reduce hazards of tobacco smoke, allergens, carbon monoxide, moisture, and mold. Poor ventilation can contribute to higher rates of respiratory illness. Among the 1,502 assessments, 65.9% of homes relied upon open windows only, while 22.4% reported using a window AC unit and 4.9% central ventilation. Reliance on open windows only was much more frequent among renter-occupied homes (71.1%) than owner-occupied homes (47.4%).

# Exterior of Property

The section of the assessment pertaining to the exterior of the property relate to conditions that may contribute to pest problems, water intrusion (that may in turn lead to mold issues), lead paint hazards, drinking water source and septic system issues.

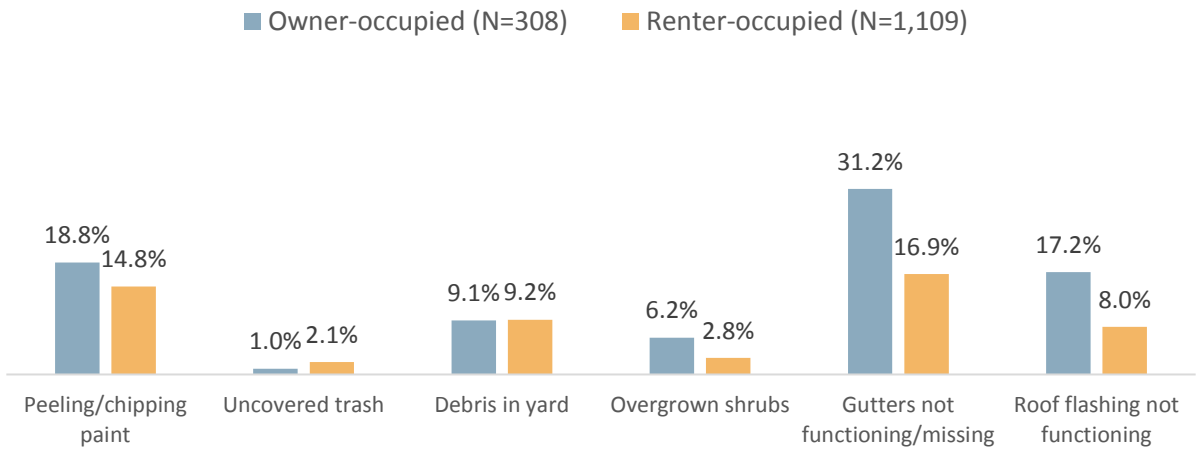
[3] US Census, American Community Survey, 5-year estimate (2011-2015)

## Exterior Conditions

As illustrated in **Figure 8,** many of the assessed items related to general home maintenance were observed deficient in owner-occupied homes more frequently than renter-occupied homes. Overall, 23.8% of homes assessed (26.9% of owner-occupied homes and 22.9% of renter-occupied homes) were observed to have at least one of the following issues: peeling or chipping paint, uncovered trash, debris in yard, or overgrown shrubs or grass – the first issue which could pose a lead-based paint hazard and the last three which are potential sources of food and harborage for pests.

Gutters, downspouts, and roof flashing were also examined in the assessments (**Figure 8**). While 19.9% of homes assessed had gutters or downspouts that were not attached, missing, or not functioning, the issue was noted much more frequently among owner-occupied homes (31.2%) than renter-occupied homes (16.9%). Likewise, 9.9% of all homes assessed had roof flashing that did not appear to be functioning and the issue was more often identified in owner-occupied homes (17.2%) than renter-occupied homes (8.0%). Such issues with water drainage present a problem as water may enter the home and contribute to mold growth. The presence of mold can have adverse effects on the health of the occupants, especially among those with respiratory diseases, such as asthma.

***FIGURE 8. EXTERIOR CONDITIONS OF ASSESSMENT SAMPLE, BY OWNERSHIP***



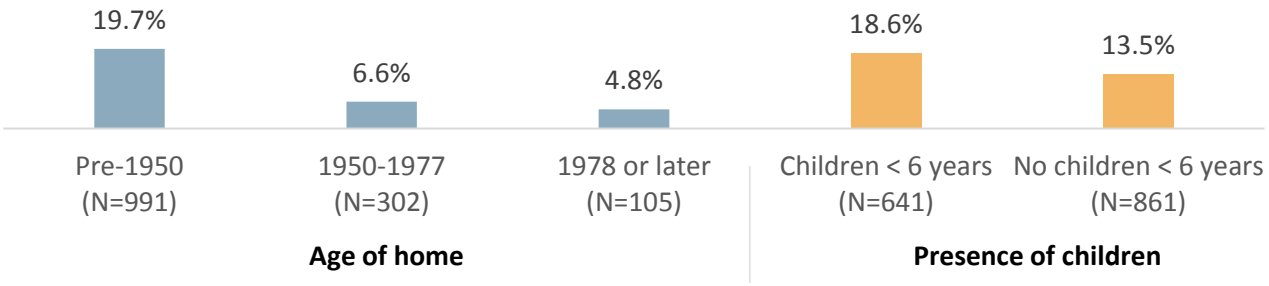

The condition of the paint on a home is especially important in homes built before 1978 due to the possibility of lead in the paint. Children under the age of 6 are at particular risk for severe and irreversible health effects due to exposure to lead. There is no known safe blood lead level (BLL).[4] In Connecticut, children who are diagnosed with a blood lead level of ≥5 µg/dL are considered to be lead poisoned, and in 2015, there were 2,156 children under the age of six with blood lead levels that exceeded this amount.

The proportions of homes identified as having peeling or chipping exterior paint, stratified by the age of the home and presence/absence of children under 6, is detailed in **Figure 9**. The highest rate of peeling/chipping paint was observed in the oldest homes, 19.7% of homes built prior to 1950 had peeling or chipped paint. The proportions were lower in homes built between 1950 and 1977 (6.6%) and

[4] Centers for Disease Control and Prevention, Lead https://www.cdc.gov/nceh/lead/data/learnmore.htm

built in 1978 or later (4.8%). Irrespective of the age of the home, the rate of peeling or chipping paint was slightly higher in homes with children under 6 years (18.6%) compared to homes with no children under 6 years (13.5%). A more detailed examination of lead exposure risk in young children can be found in the *Indoor Environmental Quality* section.

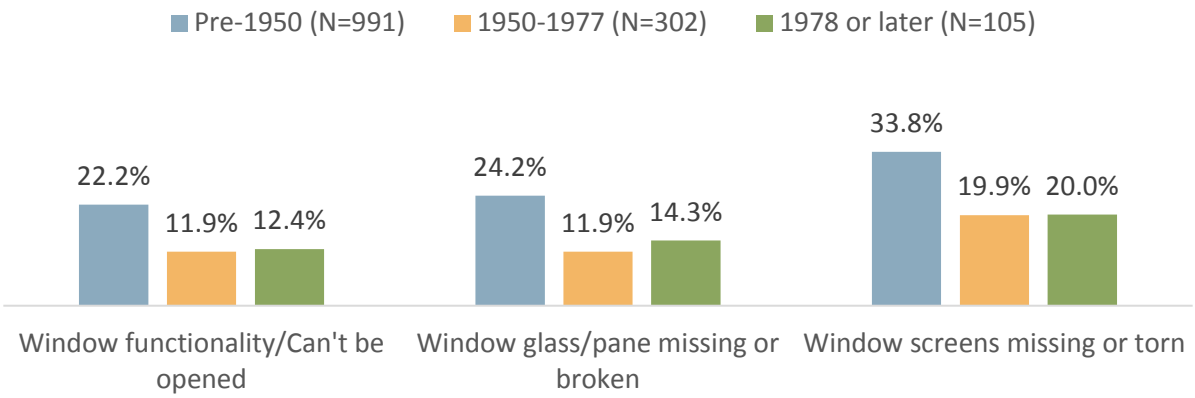
***FIGURE 9. EXTERIOR PEELING PAINT OF ASSESSMENT SAMPLE, BY AGE OF HOME AND PRESENCE OF CHILDREN***




## Windows

The functionality and structural integrity of windows was assessed and older homes were the most likely to have issues noted. As illustrated in **Figure 10**, 22.2% of homes built before 1950 had windows that did not function or open properly, compared to 11.9% of homes built between 1950 and 1977 and 12.4% of homes built in 1978 or later. Broken window glass and missing or torn window screens were also observed more frequently in homes built prior to 1950 (24.2% and 33.8% respectively). Non-functioning windows (inability to open and remain open) are a concern for the proper ventilation of a home because they may contribute to the growth of mold/mildew. Broken glass and torn/missing screens are not only safety hazards but also a route of entry for pests.

**FIGURE 10. *CONDITION OF WINDOWS IN ASSESSMENT SAMPLE, BY AGE OF HOME***




## Water and Septic

City sewers accounted for the source of sewage removal for the vast majority of the 1,502 homes assessed (90.6%), while 5.9% had septic systems. Three of the 88 homes with septic systems showed evidence of failure (breakout) at the time of assessment.

Similarly, the clear majority of homes assessed (94.8%) used public water as their source of water. Public Water Systems are required to monitor and test their drinking water. The most common drinking water emergency is contamination by bacteria that may cause gastro-intestinal related illnesses. The level of testing is dependent on the population served by the Public Water System. Community Public Water Systems, which serve at least 25 year-round residents, are required to provide annual Consumer Confidence Reports to their customers that include information on source water, levels of detected contaminants, and compliance with drinking water rules, such as the Safe Water Drinking Act. Among the 1,424 homes using public water, 87.4% reported they had no knowledge of their Consumer Confidence Reports. This proportion was slightly lower among owner-occupied homes (80.8%) and slightly higher among renter-occupied homes (90.0%).

A small number of homes (N=36) were identified as having private wells as the source of water. Unlike those with public water systems, private well owners must perform their own water testing to determine any potential contamination. Among the 36 homes with private wells, 61.1% (N=22) reported that the water had never been tested or it was not known if the water was tested. In regards to well construction, there were six of the 36 homes that had wells that were not visible or in pits. Wells located below the ground surface in pits may be more vulnerable to contamination. Poorly constructed well pits may flood, increasing the risk of potential surface water intrusion leading to contamination. Additionally, connections at the top of the well head may not be watertight and may allow the entrance of insects or other foreign matter into the well.

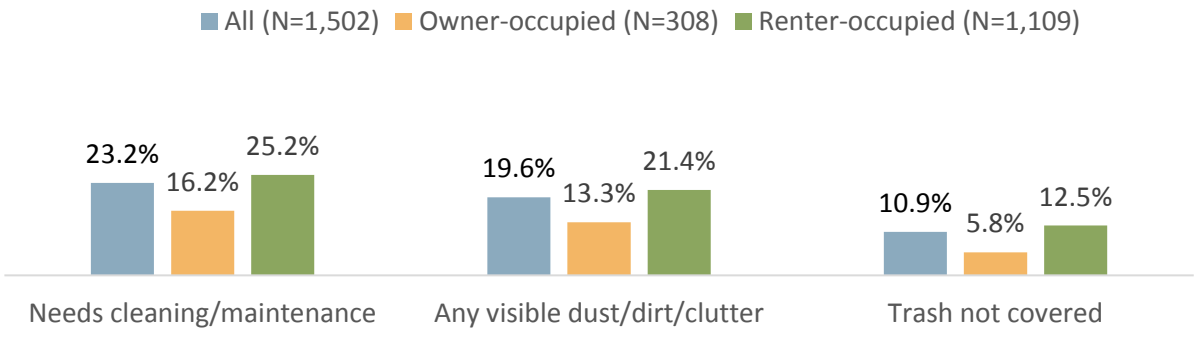
## Interior of Property

The questions in this category of the assessment cover concerns such as cleanliness, physical damage to walls, ceilings, and floors, evidence of mold and moisture, ventilation, and sleep environment (in terms of allergens). The conditions of the windows in the home are also examined.

### General Cleanliness

It was noted in the assessments that 23.2% of the 1,502 homes required some type of cleaning or maintenance. Furthermore, 19.6% of homes were identified as having at least one of the following issues: visible dust, visible dirt and debris, or excess clutter; while 10.9% of homes did not have a sealed/covered trash receptacle. As illustrated in **Figure 11**, these issues were more frequently noted in renter-occupied homes than in owner-occupied homes.

***FIGURE 11. GENERAL CLEANLINESS OF ASSESSMENT SAMPLE***

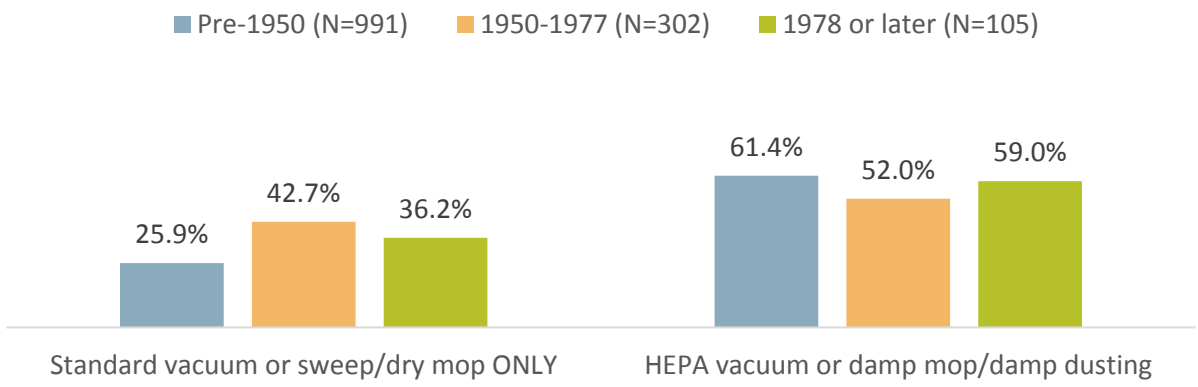



*NOTE: Multiple responses allowed; percentages may not sum to 100%*

Data also indicated these issues were more often observed in homes built prior to 1950 than homes built later. Dirt and dust can exacerbate asthma and allergies, while clutter and uncovered garbage provide an environment more susceptible to pest infestations.

The methods used to clean a home can be a particular health concern depending on the age of the home. Those built before 1978 may contain lead-based paint which may create lead dust. Sweeping or dry mopping and the use of a non-HEPA vacuum can potentially create an additional lead hazard by causing the lead dust to become airborne, and settling in areas away from the source. For this reason the use of HEPA vacuums and damp mopping/damp dusting are recommended cleaning methods in older homes. **Figure 12** details the cleaning methods used in the home, stratified by the age of the home. Among homes built prior to 1950, 25.9% relied only on a standard vaccuum or sweep/dry mop, and among homes built between 1950 and 1977, 42.7% reported only using a standard vaccuum or sweep/dry mop.

***FIGURE 12. TYPE OF CLEANING, BY AGE OF HOME***




## Moisture and Mold

A number of items in the assessment pertain to moisture and mold. Molds are microscopic organisms that are found virtually everywhere, both indoors and outdoors. They are types of fungi that live on plants, food, dry leaves, wood and other organic materials. Mold spores are the reproductive part of molds. Mold needs three things to grow: a wet or damp environment; a food source such as leaves, wood, paper products, wall board and other organic-based materials; and a temperature similar to a human home (between 60 and 80 degrees Fahrenheit) . Mold spores can cause health issues when they become airborne and inhaled. Some of these health effects include: asthma attacks, cough, headaches, nasal and sinus congestion, and dizziness.

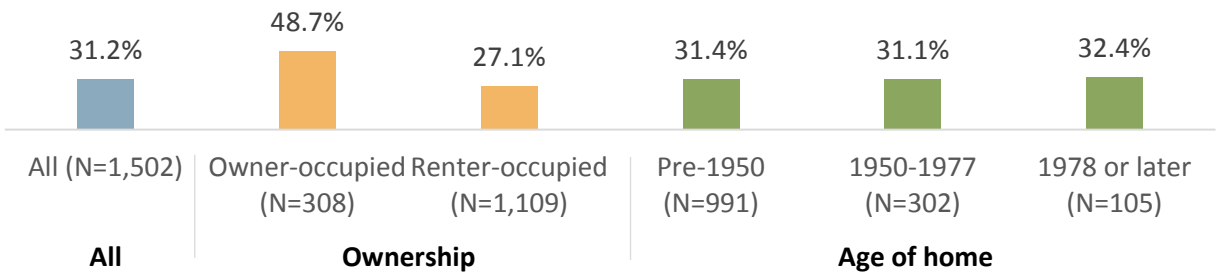
Mold needs moisture to thrive and multiply in the home. There are a number of sources of indoor moisture that can contribute to mold growth, such as flooding, leaking, improper or lack of ventilation, and faulty gutters and downspouts. In addition to the condition of gutters/downspouts and roof flashing that were discussed in the Exterior Conditions section (**Figure 8**), a number of other structural items are assessed that are relevant to potential mold problems.

Specifically, 27.7% (N=416) of the 1,502 homes assessed had structural holes (either interior or exterior) and 38.2% of homes had some damage to walls, ceilings or floors. Of these 574 homes with evidence of

damage, 31.9% (N=183) of them were reported to be bulging or buckling, which may be due to a moisture issue. Water stains or leaks were also identified in 29.1% of homes, nearly a quarter of which were a size greater than or equal to four square feet. Other moisture concerns in assessed homes included the presence of a musty odor (16.6% of homes assessed), condensation on windows, doors, or walls (6.4%), hanging clothes indoor to air dry (6.5%), and use of an unvented dryer (2.9%). Most of the above issues were more common among owner-occupied homes than renter-occupied homes and in older homes (see Appendix I for detailed data tables). Despite the prevalent moisture issues observed in the assessed homes, only a small number of homes assessed had a dehumidifier present (4.7%).

**Figure 13** details the proportion of homes with evidence of mold growth, overall and stratified by ownership and by age of the home. Overall, 31.2% of the 1,502 homes assessed had mold growth. Among these homes, a quarter had mold growth that was measured to be greater than or equal to four square feet. Mold was observed more frequently among the owner-occupied homes (48.7%) than renter-occupied homes (27.1%), however mold growth did not appear to differ by age of the home.

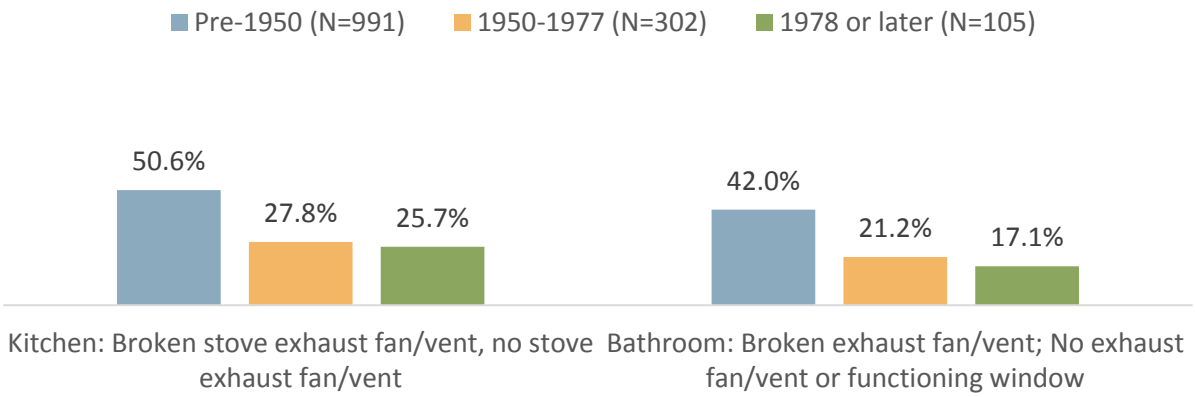
*FIGURE 13. EVIDENCE OF MOLD IN ASSESSMENT SAMPLE, BY OWNERSHIP AND AGE OF HOME*




## Kitchen and Bathroom Ventilation

A lack of ventilation in high humidity areas, such as kitchens and bathrooms, contribute to moisture and mold growth. Of the 1,502 homes assessed, 42.6% lacked a functioning stove exhaust fan/vent in the kitchen. As illustrated in **Figure 14** this was observed more often among homes built prior to 1950 (50.6%). Overall, 35.0% of homes assessed either lacked a functioning exhaust fan/vent in the bathroom or did not have a functioning window in the bathroom. This issue was also observed more often among homes built prior to 1950 (42.0%).

*FIGURE 14. VENTILATION OF KITCHEN AND BATHROOMS, BY AGE OF HOME*



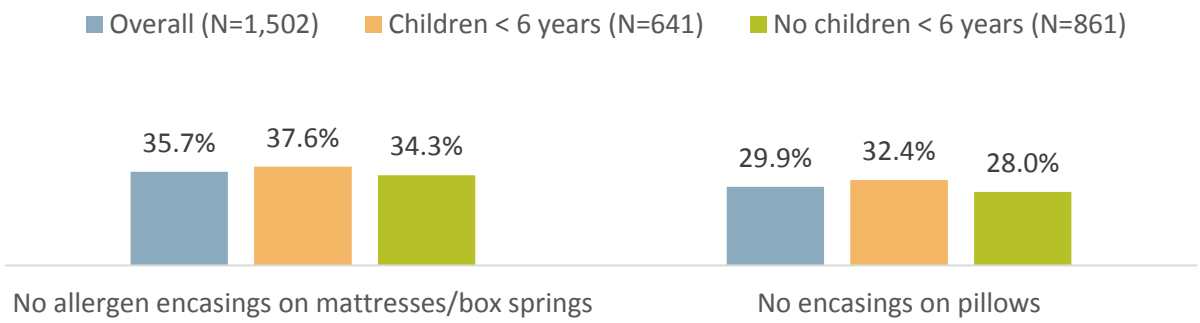

## Sleep Environment

Allergens caused by dust mites are found in bedding, mattresses, carpets, and rugs. According to the American College of Allergy, Asthma, and Immunology, dust mites are the most common cause of allergy and asthma in children[5]. They live and multiply in warm, humid places and are easily disturbed and become airborne during cleaning or simply when walking on a carpet. Removing carpets in bedrooms, frequent washing of bedding in hot water and minimizing humidity in the household are recommended to help manage dust allergies and asthma. The use of "mite proof" or allergen impermeable mattresses and pillow covers also play an important role in minimizing these triggers. Impermeable casing can also have a positive effect on the presence of bed bugs. The impermeable casings provides a smooth outer surface that can be inspected, vacuumed and easily cleaned, and makes it difficult for bed bugs to hide.

Among all homes assessed, 35.7% were reported not to have allergen impermeable encasings on their mattresses or box springs. Allergen impermeable encasings were not on pillows in 29.9% of homes. Overall, 33.1% of homes reported no allergy impermeable encasings of any kind. The proportions of homes with children under 6 years that did not have encasings were only slightly higher than the overall sample. While a larger proportion of homes did report having allergy impermeable encasings, many were not zippered: 39.8% of homes had non-zippered mattress encasings, 30.0% of homes had non-zippered box springs encasings, and 34.7% had non-zippered pillow encasings.

[5] American College of Allergy, Asthma & Immunology, Dust Allergy http://acaai.org/allergies/types/dust-allergy

*FIGURE 15. ALLERGEN IMPERMEABLE ENCASINGS, BY PRESENCE OF CHILDREN*




The assessment also identified other soft materials in the sleeping environment that provide opportunities for exposure to dust mites. Feather/down pillows and bedding, or bedding that is not washable increase risk for exposure to allergens and were present in 2.8% of homes, while an additional 11.3% of homes did not know their pillow or bedding material. Carpeting and rugs were observed in the bedrooms of nearly half of homes overall (46.7%), however, they were more common among homes built in 1978 or later (61.9%) than among older homes (15% of homes built prior to 1950; 51.3% of homes built between 1950 and 1977).

## Physical Home Safety

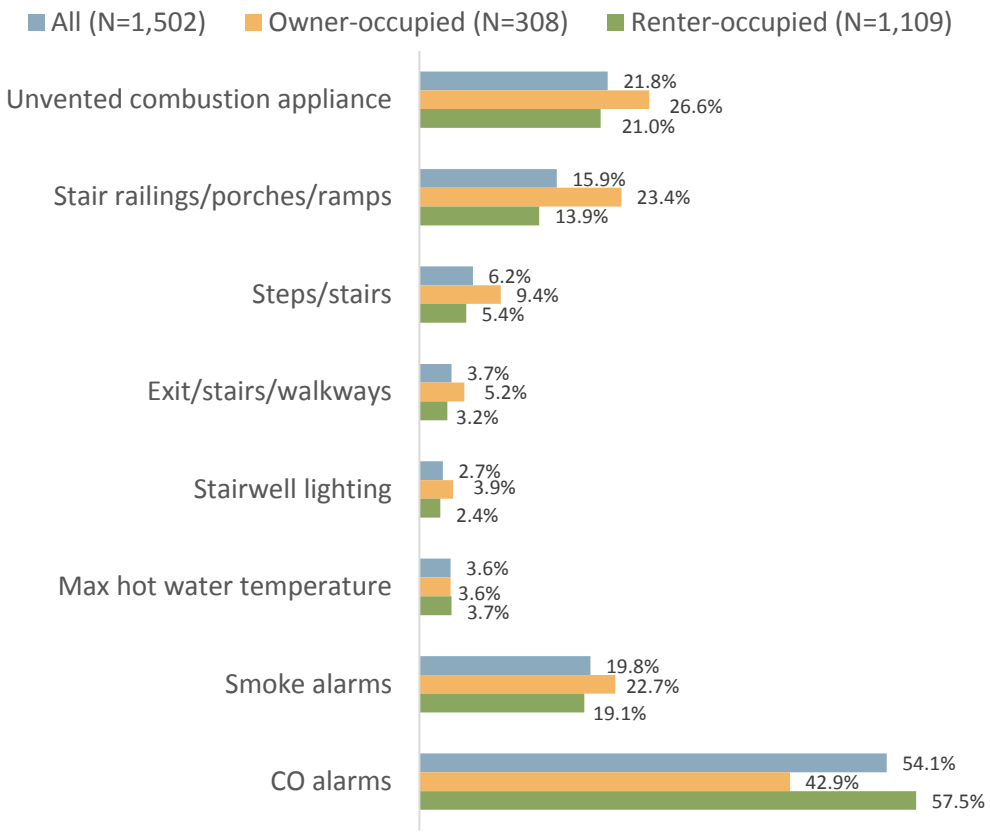
The five leading causes of residential injury (falls, fire/burns, poisoning, choking/suffocation and drowning) cause approximately 47% of Connecticut's injury-related deaths. These causes are responsible for, on average, 886 deaths, 10,281 inpatient hospitalizations and 99,501 emergency department visits among state residents each year[6]. A wide range of items related to general home safety are included in the Healthy Homes Assessment. These pertain to issues in the home that may lead to unintentional injuries including trips, slips and falls, poisonings, fire/burns, and choking/suffocation.

### Imminent Hazards

Many of the housing issues that contribute to these injuries are considered imminent hazards because they are immediate threats to health and safety and could potentially be life-threatening. There are 8 items on the Healthy Homes Assessment that can be considered imminent hazards: 1) presence of unvented combustion appliances; 2) stair railings/porches/ramps that are broken, insecure, damaged, loose, unusable or missing; 3) steps/stairs where one or more are broken or missing; 4) exits/stairs/walkways that contain tripping hazards or other obstructions; 5) stairwell lighting that is not present at the top and bottom of stairs; 6) hot water temperatures that exceed 120 degrees Fahrenheit; 7) absence of smoke alarms or smoke alarms that lack power or batteries; 8) absence of CO alarms or CO alarms that lack power or batteries. **Figure 16** presents the proportion of homes where each of the 8 hazards were observed, stratified by ownership. Details about the total counts of imminent hazards across the assessment sample can be found in the *Assessment Summary* section.

[6]Connecticut Department of Public Health, Office of Injury Prevention, Injury In Connecticut: Deaths, Hospitalizations and Emergency Department Visits, 2008 to 2013, July 14, 2016

*FIGURE 16. IMMINENT HAZARDS IN ASSESSMENT SAMPLE, BY OWNERSHIP*




The most common hazards were the absence of functioning CO alarms (54.1% of all homes), the presence of unvented combustion appliances (21.8% of all homes), the absence of functioning smoke alarms (19.8% of all homes), and issues with stair railings/porches/ramps (15.9% of all homes). Nearly all imminent hazards were more often noted among owner-occupied homes than renter-occupied, except for CO alarms. Renter-occupied homes were more likely to lack functioning CO alarms (57.5%) than owner-occupied homes (42.9%).

A few hazards were also observed to occur more frequently in older homes. Unvented combustion appliances – these were most often a stove or a gas clothes dryer - were more common among homes built before 1950 (26.3%) compared to homes built between 1950 and 1977 (10.3%) or built in 1978 or later (15.2%). A lack of CO alarms was also observed more often among the oldest homes (60.9% of homes built prior to 1950) compared to younger homes (43.0% of homes built between 1950 and 1977; 29.5% of homes built in 1978 or later).

## Smoke and CO Alarms

In addition to being two of the most frequently observed imminent hazards across the assessments, the lack of smoke or CO alarms is a primary concern from a public health perspective. According to the U.S. Fire Administration (USFA), nationally there were 380,900 residential building fires in 2015 resulting in deaths and 11,475 injuries.[7] The National Fire Protection Association (NFPA) reports that between

[7] US Fire Association, Fire Estimate Summary – Residential Building Fire Trends (2006-2015)

2007-2011 the death rate per 100 reported home fires was more than twice as high in homes that did not have any working smoke alarms. The rates were 1.18 deaths per 100 fires in homes where no smoke alarm was present or an alarm was present but not working versus 0.53 deaths per 100 fires in homes where working smoke alarms were present[8]. As noted above, 19.8% (N=297) of homes assessed did not have smoke alarms, or had smoke alarms but no power or battery present.

CO (carbon monoxide) is a colorless, odorless, gas created when fuels (such as gasoline, oil, natural gas, and wood) burn incompletely. In the home, heating and cooking equipment that burn fuel are potential sources of carbon monoxide. Vehicles or generators running in an attached garage can also produce dangerous levels of carbon monoxide. Health effects of exposure to carbon monoxide include nausea, dizziness and headaches. Exposures to high enough levels of carbon monoxide could result in loss of consciousness and ultimately death. As noted above 54.1% (N=813) of homes assessed did not have CO alarms, or had a CO alarm but had no power or battery present. Importantly, 21.8% (N=328) of homes also had an unvented combustible appliance present, which is a direct source of CO in the home (as well as other indoor pollutants). In-depth analyses of the assessment data showed that among the 328 homes with an unvented combustion appliance, 53.7% (N=176) did not have a functioning CO alarm in the home suggesting a high-risk combination of identified issues.

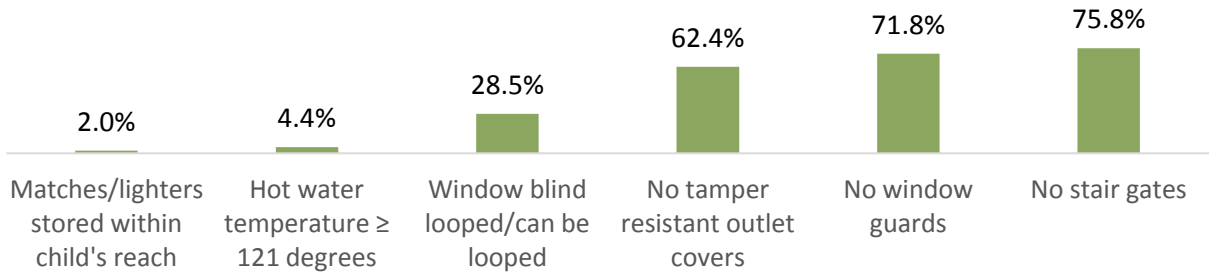
## Children's Safety

According to the Centers for Disease Control and Prevention, unintentional injuries are the leading cause of mortality among children in the United States.[9] The Healthy Homes Assessment includes a number of potential hazards that are specific to children. Based upon the age of occupancy recorded in the assessment, a total of 641 homes (42.7%) were identified as having at least one child under the age of six living in residence.

The proportion of homes where general safety issues for young children were observed are illustrated in *Figure 17*. These represent some of the leading causes of injuries to children including scalding (high hot water temperature), strangulation (window blinds with looped cords), electrical shocks (lack of tamper resistant outlet covers), and falls (lack of functional stair gates or window guards above the 1st floor). Among the assessed homes with children under 6 years, the majority lacked outlet covers (62.4%), stair gates (75.8%), or window guards (71.8%). In addition to these risks, it was also observed that 5.5% of homes with children under 6 years stored cleaning supplies, pesticides and other chemicals within children's reach while 1.7% stored medicine or vitamins within children's reach.

[8] National Fire Protection Association, Smoke Alarms in U.S. Home Fires, September 2015
[9] Centers for Disease Control and Prevention, Child Safety and Injury Prevention https://www.cdc.gov/safechild/

*FIGURE 17. GENERAL SAFETY HAZARDS TO CHILDREN < 6 YEARS IN ASSESSMENT SAMPLE*




*NOTE: Proportions based only on homes with children < 6 years present (N=641)*

The impact of disasters and emergencies affect children differently than adults. Emergency preparedness is an important factor in ensuring home safety. Only a third of Americans have developed and practiced a home fire escape plan. It was noted in the assessment that 68.2% of homes with children under 6 years did not have a family fire escape plan (a rate similar to the 68.0% observed among all 1,502 homes assessed) and 69% of homes with children under 6 years did not have the number for poison control posted by the phone. Children under six comprise nearly half of all poison exposures. These findings suggest families may not be prepared to properly react to some emergencies should they arise.

## Senior Safety

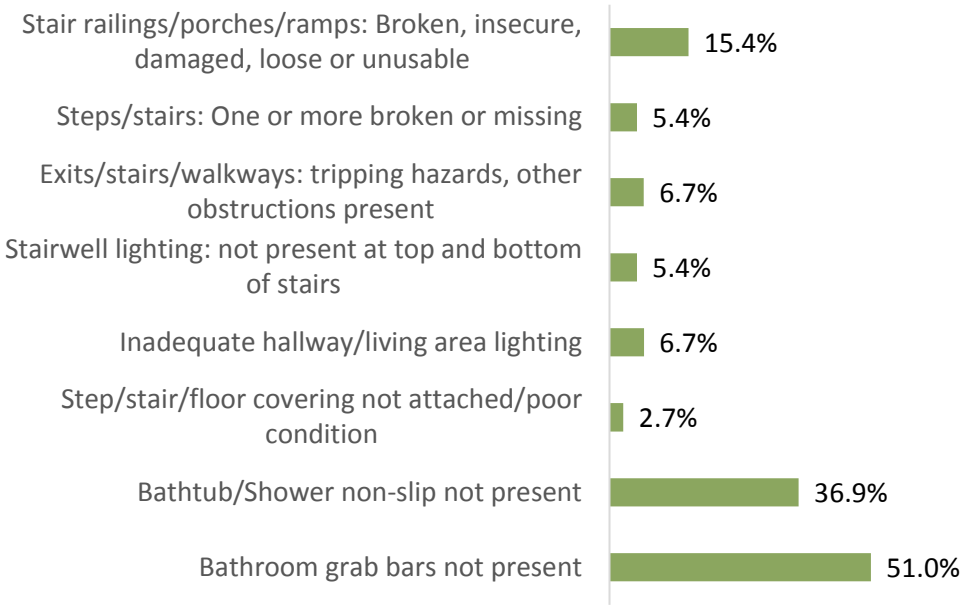
Based upon the age of occupancy recorded in the assessment, a total of 149 homes were identified as having at least one senior, age 65 or older, living there and 47.0% of seniors were reported to be living alone. According to the National Council on Aging, falls are the leading cause of both fatal and non-fatal injuries for older Americans.[10] In Connecticut, falls are the leading cause of injury death for older adults.[11] Several items included in the Healthy Homes Assessment relate to potential unintentional injury hazards that may affect seniors: stair railings/porches/ramps that are broken, insecure, damaged, loose or unusable; steps or stairs that are broken or missing; exits/stairs/walkways with tripping hazards or other obstructions present, or inadequate stairwell lighting. Other potential fall hazards were also captured in the assessment, such as inadequate lighting in hallways or living areas, step/stair/floor covering that are not attached or are in poor condition, a lack of non-slip surface in bathtub/shower, and a lack of bathroom grab bars.

Results of the assessment are illustrated in **Figure 18.** A lack of bathroom grab bars was noted in about half of the 149 homes with seniors (51.0%) while non-slip surfaces were absent in 36.9% of homes with seniors. Problems with stair railings/porches/ramps were noted in 15.4% of homes with seniors. Other issues were less common.

[10] National Council on Aging, Falls Prevention Facts https://www.ncoa.org/news/resources-for-reporters/get-the-facts/falls-prevention-facts/

[11] Connecticut Department of Public Health, Office of Injury Prevention, Injury In Connecticut: Deaths, Hospitalizations and Emergency Department Visits, 2008 to 2013, July 14, 2016

*FIGURE 18. GENERAL SAFETY HAZARDS TO SENIORS IN ASSESSMENT SAMPLE*




*NOTE: Proportions based only on homes with seniors age 65+ present (N=149)*

## Indoor Environmental Quality

A major component of the Healthy Homes Assessment included items pertaining to the quality of the indoor environment. According the Environmental Protection Agency's Report on the Environment, "indoor air quality refers to the quality of air in a home, school, office or other building environment." The potential impact of indoor air quality on human health can be considerable given that Americans typically spend approximately 90% of their time indoors where the concentration of some pollutants are often two to five times higher than typical outdoor concentrations. Individuals who are more susceptible to these pollutants (e.g. the very young, seniors and individuals with cardiovascular or respiratory disease) tend to spend even more time indoors.[12]

The indoor air pollutants examined as part of the assessment include dander, pesticides, asbestos, radon, environmental tobacco smoke, and other irritants. These pollutants can exacerbate asthma and other respiratory diseases, and are associated with a number of health effects such as headaches, dizziness, and fatigue as well as heart disease and cancer. Other topics covered in this section include potential lead paint hazards, which can cause lead poisoning.

[12] United Stated Environmental Protection Agency – Indoor Air Quality
https://cfpub.epa.gov/roe/chapter/air/indoorair.cfm

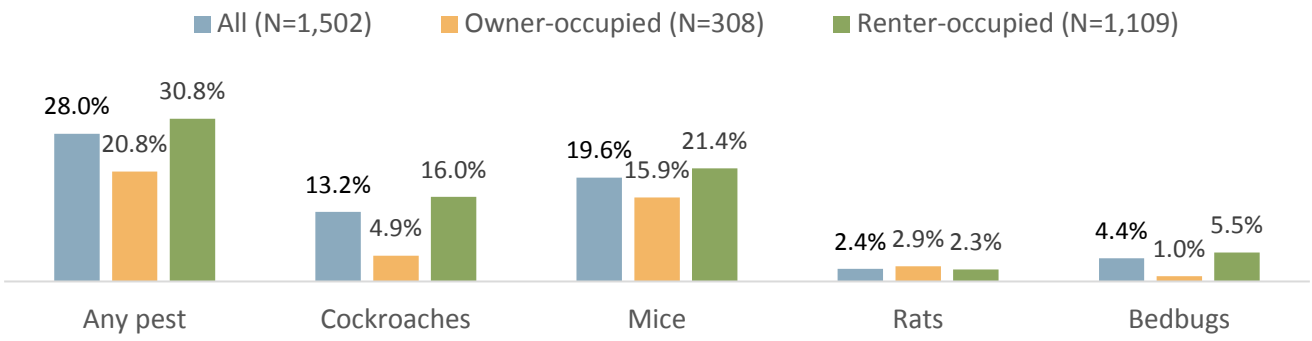
## Pets

Pets may cause allergies in some people and may also be a trigger for individuals with asthma. Among the 1,502 homes assessed, 30.5% reported having a pet and most of these were permitted full access throughout the home (67% of homes with pets). Pets shed fur, dander, and skin flakes which can trigger asthma episodes in some people. To prevent this, pets should be kept off the bed and out of the bedroom (pet free bedrooms) along with keeping them off fabric covered furniture.

## Pests

Unwanted pests can present a number of health issues to a home's occupants. They may act as triggers for asthma and may cause disease. Rodents can directly transmit a number of diseases to humans including but not limited to hantavirus, salmonellosis and leptospirosis.[13] A least 1 pest (mice, rats, cockroaches, bedbugs) was reported or evidence of a pest was seen in 28.0% of all homes assessed, **Figure 19.** Mice were the most common pest overall (19.6%) in both owner-occupied homes (15.9%) and renter-occupied homes (21.4%). Cockroaches were much more likely to be reported or observed in renter-occupied homes (16.0%) than owner-occupied homes (4.9%). Bedbugs were also reported or observed more often in renter-occupied homes (5.5%) than owner-occupied homes (1.0%). The evidence of pesticide use is a secondary indicator for the presence of pests, but it can also present a separate health concern for occupants. Exposure to pesticides can result in dizziness, headaches, nausea, vomiting, and increased risk of cancer. There was evidence of the use of pesticides in 10.5% of homes assessed.

***FIGURE 19. PESTS IN ASSESSMENT SAMPLE, BY OWNERSHIP***



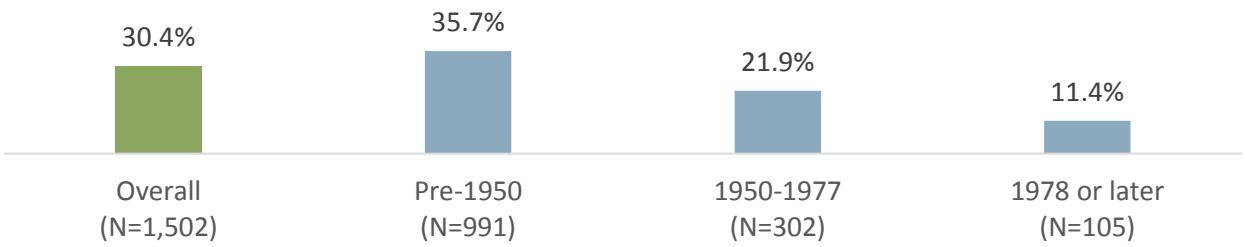

## Lead Paint

Housing built prior to 1978, and housing built before 1950 in particular, is most likely to contain lead-based paint. Of the 1,502 homes assessed, 86% (N=1,293) were built prior to 1978. The presence of lead-based paint in homes can be a source of exposure to the occupants, potentially leading to lead poisoning, with young children and pregnant women most at risk. Potential interior lead paint hazards (indicated by damaged or peeling paint) were observed among 35.7% of homes built before 1950 and 21.9% of homes built between 1950 and 1977, **Figure 20**. Additionally, active renovation or remodeling was occurring in 95 of the homes built before 1978 during the time of assessment. Such renovations, if performed without proper precautions, can expose occupants to a lead hazard. To keep residents

[13] Centers for Disease Control and Prevention – Diseases directly transmitted by rodents https://www.cdc.gov/rodents/diseases/direct.html

informed, the Environmental Protection Agency and the U.S. Department of Housing and Urban Development require that sellers and landlords provide buyers and renters with a pamphlet that contains information to prevent lead poisoning in the homes. The occupants of nearly half of the homes built prior to 1978 indicated that they had not received this pamphlet.

***FIGURE 20. DAMAGED OR PEELING PAINT IN ASSESSMENT SAMPLE, OVERALL AND BY AGE OF HOME***




## Lead Poisoning Risk to Children

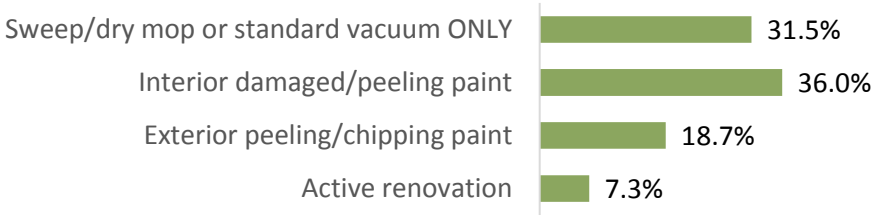
The presence of lead-based paint in homes can be a source of exposure to the occupants. Exposure to lead in a home can have serious impact on a child's health increasing their risk for a number of health issues. There is no known safe blood lead level (BLL).[14] Connecticut has adopted the national standard recommended by the Centers for Disease Control and Prevention, whereby children who are diagnosed with a blood lead level of ≥5 µg/dL are considered to be lead poisoned. In 2015, there were 2,156 children under the age of six with blood lead levels that exceeded this amount. Some symptoms in children include restlessness, irritability, decreased IQ, learning disabilities, behavioral issues, and in acute cases, coma or death. Health effects caused by lead poisoning are irreversible.

As mentioned above, homes built prior to 1978 may have lead based paint in them which can pose a serious risk to young children. Among the 1,293 homes built before 1978, 44.2% (N=572) of them had at least one occupant under the age of 6 years.

*Figure 21* details several key indicators of lead exposure risk to young children residing in these 572 homes. Approximately one third of older homes with children under 6 were observed to have interior damaged/peeling paint (36.0%) and/or use sweeping/dry mop or standard vacuum only (31.5%), both conditions that increase the risk of lead poisoning in young children. Another 18.7% of older homes with children under 6 were observed to have exterior peeling/chipping paint and 7.3% were undergoing renovation at the time of the assessment.

[14] Centers for Disease Control and Prevention, Lead https://www.cdc.gov/nceh/lead/data/learnmore.htm

*FIGURE 21. LEAD POISONING RISKS TO CHILDREN UNDER 6 AND LIVING IN PRE-1978 HOMES*




*NOTE: Proportions based only on Pre-1978 homes with children < 6 years (N=572)*

## Other Environmental Hazards

According to the Environmental Protection Agency's estimates, **radon** is the number one cause of lung cancer among non-smokers and is responsible for approximately 21,000 lung cancer deaths every year.[15] In 2015, a National Radon Action Plan was released with an ultimate goal of eliminating avoidable radon-induced lung cancer.[16] Radon is a naturally-occurring radioactive gas that is a product of uranium decay. It is colorless and odorless, and can enter homes from the surrounding soil and rock where it can accumulate to unhealthy levels inside a home. It can also enter through groundwater sources. The Connecticut Department of Public Health recommends that all homeowners test for radon, and take steps to reduce radon levels when they equal or exceed 4 picocuries per liter (pCi/L). Across all 1,502 homes assessed, 70.2% had not been tested for radon (N=1,055). There were an additional four homes where testing had indicated that levels of radon equaled or exceeded 4 pCi/L but mitigation had not been performed.

**Asbestos** is the name given to a group of minerals that occur naturally in the environment as bundles of fibers that can be separated into thin, durable threads. These fibers are resistant to heat, fire, and chemicals, and they do not conduct electricity. For these reasons, asbestos was used in many building products. Breathing asbestos can cause the tiny fibers to become stuck in the lungs and irritate lung tissues resulting in harmful health effects. Asbestosis and Pleural Disease are non-cancerous diseases that can result from breathing asbestos. Asbestos exposure also increases the risk of developing lung cancer, mesothelioma and cancer of the ovary and larynx.[17] Across all 1,502 homes assessed, 48 homes (3.2%) had suspect asbestos-containing material present but had not yet been tested. Another 16 homes (1.1%) had known asbestos-containing material present and in poor condition. Otherwise, the overwhelming majority of homes had not been tested (46.9%; N=1,155).

**Environmental Tobacco Smoke** is the smoke that is emitted from a burning cigarette or other tobacco product and the smoke exhaled by the smoker. Smoking in the home pollutes the air and can cause irritation to the eyes, skin, nose, and throat. The U.S. Surgeon General released a report in 2010 and another in 2014 suggesting there is no safe level of exposure to tobacco smoke.[18] Children exposed to

[15] US Environmental Protection Agency, Health Risk of Radon https://www.epa.gov/radon/health-risk-radon
[16] National Radon Action Plan - https://www.epa.gov/sites/production/files/2015-11/documents/nrap_guide_2015_final.pdf
[17] Agency for Toxic Substances and Disease Registry, Health Effects of Asbestos https://www.atsdr.cdc.gov/asbestos/health_effects_asbestos.html
[18] Centers for Disease Control and Prevention, What You Need to Know about Smoking https://www.cdc.gov/tobacco/data_statistics/sgr/50th-anniversary/pdfs/what-you-need-to-know.pdf

smoke are more likely to have respiratory infections, ear infections, bronchitis, and severe asthma. Chemicals found in smoke are known to cause lung cancer, respiratory illness, heart disease, and cardiovascular disease.

Smoking in the home also presents a potential fire hazard. According to the U.S. Fire Association, smoking was the third leading cause of residential building fire deaths in 2015, resulting in 320 deaths nationally.[19] According to data from the 2015 Connecticut Behavioral Risk Factor Surveillance Survey (BRFSS), one in eight Connecticut adults (13.5%) smoked cigarettes "every day" or "some days". Among the 1,502 homes assessed, 10.4% had at least one smoker reported to live in the home, while 20.0% of homes allowed smoking (indoors or outdoors), allowed visitors to smoke in the home, or had visible evidence of smoking in the home.

Other potential airborne irritants commonly used in homes include potpourri, candles, incense and air fresheners. All of these may act as triggers for those with asthma. Overall, 40.7% of homes assessed used one or more of these types of products. They were more frequently reported in owner-occupied homes (55.2%) than renter-occupied homes (37.6%).

## Asthma Triggers

Asthma is a chronic respiratory disease that is characterized by symptoms of wheezing, coughing and shortness of breath, but it can be controlled. The prevalence of adult asthma in Connecticut was 10.5% and 11.7% in children in 2015.[20] A number of conditions within the home can trigger or exacerbate asthma symptoms. Exposure to pets, dust mites, cockroaches, rodents, pesticides and molds, as well as environmental tobacco smoke can worsen asthma symptoms. While actual health conditions of occupants residing in the homes is not captured as part of the Healthy Homes Assessment, many of these asthma triggers are assessed. **Table 2** summarizes the potential asthma triggers observed across the assessment sample in order of frequency.

***TABLE 2. POTENTIAL ASTHMA TRIGGERS OBSERVED ACROSS THE ASSESSMENT SAMPLE, RANKED BY PREVALENCE***

| Healthy Homes Assessment Indicator | All Homes (N=1,502) |
|---|---|
| Bedroom Flooring is large/small rug or wall-to-wall carpet | 46.7% |
| Broken stove exhaust fan/vent or no stove exhaust fan/vent in kitchen | 42.6% |
| Other airborne irritants used (air fresheners, potpourri, incense, candles, other) | 40.7% |
| No allergen impermeable encasings on mattresses/box springs | 35.7% |
| Broken exhaust fan/vent, no exhaust fan/vent or functioning window in bathroom | 35.0% |
| Mold growth present | 31.2% |
| Standard vacuum or sweep/dry mop are only cleaning methods used | 30.9% |
| Any pets are present in the home | 30.5% |
| No allergen impermeable encasings on pillows | 29.9% |
| Any water stains/leaks observed | 29.1% |
| Any pests reported or evidenced (mice, cockroaches, rats, bedbugs) | 28.0% |
| Smoking allowed (indoor or outdoor), visitors allowed, evidence observed | 20.0% |
| Any visible dust, dirt, debris, or clutter observed | 19.6% |

[19] US Fire Association, Fire Estimate Summary – Residential Building Fire Trends (2006-2015)
[20] CT Department of Public Health, Health Indicators and Risk Behaviors in CT: 2015

| | |
|---|---|
| Musty odor observed | 16.6% |
| Pillow material is feather/down or don't know | 13.0% |
| Evidence of pesticide use | 10.5% |
| Bedding material is feather/down, not washable (wool), or don't know | 8.7% |
| Clothes are hung to air dry | 6.5% |
| Condensation observed on windows, doors, walls | 6.4% |
| Unvented clothes dryer | 2.9% |

*NOTE: Multiple responses allowed; percentages may not sum to 100%*

# Assessment Summary

## Deficiencies

A summary of the number and proportion of homes where deficiencies were noted is detailed in **Table 3**. Nearly all homes had at least one deficiency and deficiencies were noted within all sub-categories of the assessment. In total, 20,882 deficiencies were noted across the 1,502 assessments with an average of 13.9 deficiencies per home. The average number of deficiencies were similar for renter-occupied homes (13.8 per home) and owner-occupied homes (14.6 per home), however homes built before 1950 had a higher average number of deficiencies noted on the assessment (14.9 per home) compared to homes built between 1950 and 1977 (12.5 per home) or built in 1978 or later (11.8 per home). The average number of deficiencies in homes with children under 6 years was 15.0 per home while the average for homes with seniors was 13.0.

***TABLE 3. SUMMARY OF DEFICIENCIES NOTED ACROSS THE ASSESSMENT SAMPLE***

| | Total Deficiencies Possible | Homes with at Least One Deficiency | | Number of Deficiencies per Home |
|---|---|---|---|---|
| | | Count | Percent | Average |
| General and Exterior | 10 | 1,395 | 92.9% | 2.1 |
| Interior Conditions | 16 | 1,417 | 94.3% | 3.9 |
| General Home Safety | 18 | 1,432 | 95.3% | 4.3 |
| Indoor Environmental Quality | 12 | 1,452 | 96.7% | 3.6 |
| Any of the Above | 56 | 1,491 | 99.3% | 13.9 |

## Imminent Hazards

A summary of the numbers of homes where imminent hazards were identified is provided in **Table 4**. A total of 1,921 hazards were noted across the 1,502 assessments with an average of 1.3 hazards per home. The average number of hazards were similar for renter-occupied homes (1.3 per home) and owner-occupied homes (1.4 per home), however homes built before 1950 had a slighter higher average number of hazards noted on the assessment (1.4 per home) compared to homes built between 1950 and 1977 (1.0 per home) or built in 1978 or later (0.8 per home). Homes with children under 6 years and homes with seniors each averaged 1.2 hazards per home. When an imminent hazard is identified the inspector is trained to notify the enforcement agency that has the authority to ensure that the hazard is corrected (e.g., missing or broken stairs is the responsibility of the local building department, missing or broken fire alarms is the responsibility of the local fire marshal).

*TABLE 4. SUMMARY OF IMMINENT HAZARDS IDENTIFIED IN ASSESSMENT SAMPLE*

| | Homes with Imminent Hazard Identified | | Proper Authority Notified |
|---|---|---|---|
| | Count | Percent | Count |
| Unvented Combustion Appliances present | 328 | 28.1% | 18 |
| Stair railings/porches/ramps broken, insecure, damaged, or missing | 239 | 15.9% | 60 |
| Steps/stairs broken or missing | 93 | 6.2% | 21 |
| Exits/stairs/walkways not clear | 56 | 3.7% | 17 |
| Stairwell lighting not present | 41 | 2.7% | 12 |
| Maximum hot water exceeded | 54 | 3.6% | 21 |
| Smoke alarms non-functioning/absent | 297 | 19.8% | 13 |
| CO alarms non-functioning/absent | 813 | 54.1% | 28 |
| Any of the Above | 1,090 | 72.6% | 248 |

## Referrals/Outcomes

As part of the Healthy Homes Assessment, some inspectors handed out smoke alarms, CO alarms, radon test kits, and child safety kits to residents. Over the time period in which the 1,502 assessments occurred, inspectors distributed:

- 361 CO alarms to 341 homes
- 386 smoke alarms to 255 homes
- 147 child safety kits to 141 homes
- 184 radon test kits to 184 homes

Other outcomes and referrals do take place after the Healthy Homes Assessment; however they are less consistently documented in the surveillance system and likely underrepresent total numbers:

- 9 homes had lead abatement or remediation work conducted
- 2 homes had weatherization/energy efficiency work conducted
- 25 homes had healthy homes remediation conducted
- 23 homes had imminent hazards corrected
- 2 homes had housing rehab conducted

# Reassessments

Reassessments are required when being performed by agencies under contract with DPH when hazards are found during the initial assessment. Of the seven agencies that conducted Healthy Homes Assessments only five were under contract with DPH. They were CCHHP, Milford Health Department, Quinnipiack Valley Health District, Torrington Area Health District and Uncas Health District, accounting for 1114 assessments and 374 reassessments. While we would like to see every residence reassessed, there are instances where the contractor is unable to re-enter a residence because the occupant will not

allow re-entry or has moved. For CCHHP, a non-regulatory contractor, an occupant was very likely not to allow re-entry.

A total of 375 Healthy Homes Reassessments were performed. This reflects 25% of homes in the overall assessment sample. Ideally, reassessments are performed within 90 days of the initial assessment. Among this group of 375 homes, 23% (N=86) were reassessed within 90 days of their initial assessment. During these reassessments, inspectors handed out an additional 51 CO alarms to 50 homes; 55 smoke alarms to 41 homes; 11 child safety kits to 11 homes; and 11 radon test kits to 11 homes. The general characteristics of homes included in the assessment-reassessment sample are presented in **Table 5.**

***TABLE 5. CHARACTERISTICS OF HOMES WITH ASSESSMENTS AND REASSESSMENTS (N=375)***

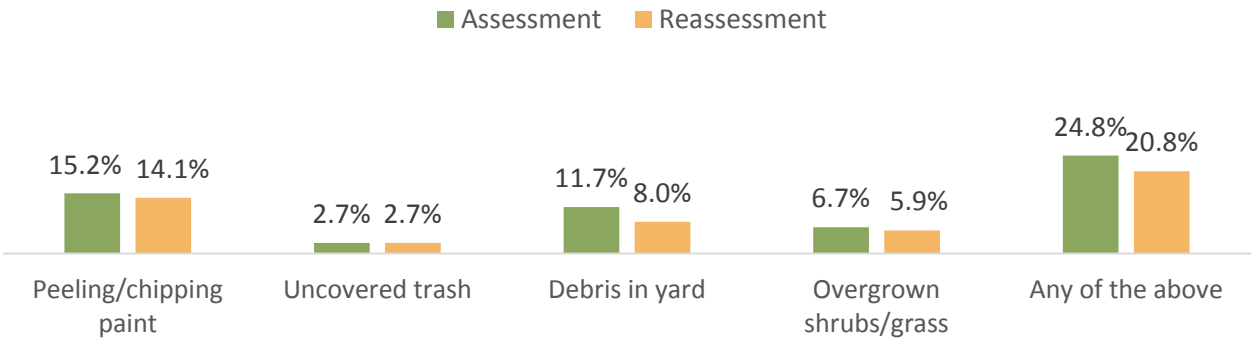
| Characteristic | Homes with Assessment and Reassessment (N=375) | |
|---|---|---|
| | Count | Percent |
| **Ownership Type** | | |
| Owner-occupied | 98 | 26.1% |
| Renter-occupied | 265 | 70.7% |
| Other | 7 | 1.9% |
| | | |
| **Age of Home** | | |
| Pre-1950 | 180 | 48.0% |
| 1950-1977 | 140 | 37.3% |
| 1978 or later | 31 | 8.3% |
| | | |
| **Occupancy** | | |
| Children, under 6 years | 185 | 49.3% |
| Children, 6 or older | 146 | 38.9% |
| Adults, 18-64 years | 320 | 85.3% |
| Seniors, 65 or older | 47 | 12.5% |

The following sections describe the assessment and reassessment findings for this group of 375 homes. These data allow one to compare the rates of deficiencies and imminent hazards (i.e. prevalence of these issues) between assessment and reassessment timepoints at the population level. This provides insight into which deficiencies or hazards are more often corrected or reduced after a Healthy Homes Assessment and illustrates, based upon this sample of homes, how persistent some deficiencies or hazards may be in Connecticut homes. In addition to this broad examination of prevalence at the two timepoints, further analyses were conducted of the major deficiencies/hazards to determine how many homes corrected an identified deficiency or hazard. Specifically, among those homes with a given deficiency or hazard at the assessment, the proportion that no longer had that given deficiency at the reassessment was examined. This proportion, referred to as the case correction rate, provides an estimate of how many homes are likely to correct the given deficiency or hazard after being alerted to the issue during an assessment.

## Exterior Conditions

As illustrated in **Figure 22**, the proportion of homes with deficiencies in exterior conditions was slightly lower at reassessment. Improvements in yard debris (11.7% at assessment and 8.0% at reassessment) was noted and the proportion of homes with any of these issues declined slightly (24.8% at assessment and 20.8% at reassessment). When analysis was restricted only to the 93 homes that had any of these exterior deficiencies at the assessment, 18 of them no longer had any of these deficiencies noted at the reassessment (19.4% case correction).

***FIGURE 22. EXTERIOR CONDITIONS, ASSESSMENT VS. REASSESSMENT (N=375)***

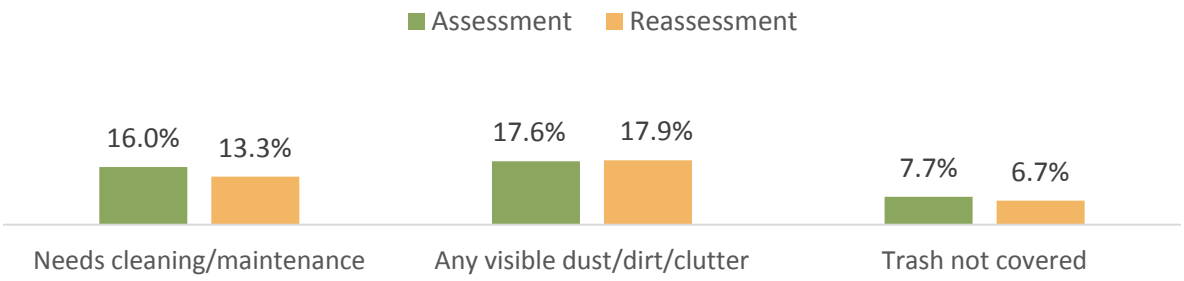



## Interior Conditions

### General Cleanliness

The proportions of homes observed to have deficiencies in the general cleanliness of the home at assessment and reassessment are illustrated in **Figure 23.** The prevalence of homes that need cleaning or general maintenance was slightly lower upon reassessment, however the prevalence of visible dust, dirt, clutter or trash that was uncovered remained stable between assessment and reassessment. Of the 90 homes with either general cleanliness issues or visible dust/dirt/clutter noted at the assessment, 3 did not have either issue noted at the reassessment (3.3% case correction) and 5 of 29 homes with uncovered trash at assessment had corrected the issue at reassessment (17.2% case correction).

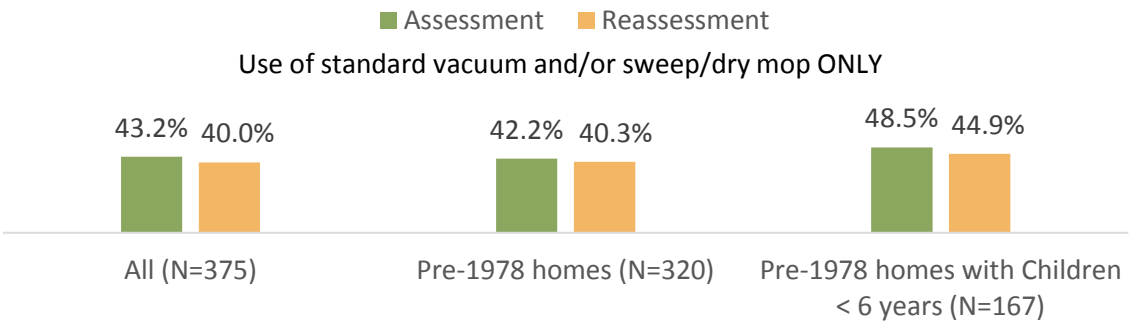
**FIGURE 23. GENERAL CLEANLINESS, ASSESSMENT VS. REASSESSMENT (N=375)**




As discussed in earlier sections of this report, the type of cleaning methods used in the home can prevent or exacerbate health risks, specifically to residents in older homes built prior to 1978 where the presence of lead paint is more likely. As illustrated in **Figure 24**, among homes built prior to 1978 and

who were included in the reassessment sample (N=320), the proportion reporting use of only a standard vacuum or sweeping/dry mopping for cleaning declined (42.2% at assessment and 40.3% at reassessment). Additionally, in the sub-set of these homes with young children present (N=167), use of only a standard vacuum or sweeping/dry mopping for cleaning declined from 48.5% at assessment to 44.9% at reassessment. Of the 135 older homes that reported only these cleaning methods at the assessment, 23 no longer reported only using these methods at the reassessment (17.0% case correction), and of the 81 older homes with children under 6 years that reported only these cleaning methods at the assessment, 8 no longer reported only using these methods at the reassessment (9.9% case correction).

***FIGURE 24. TYPE OF CLEANING BY AGE OF HOME, ASSESSMENT VS. REASSESSMENT (N=375)***



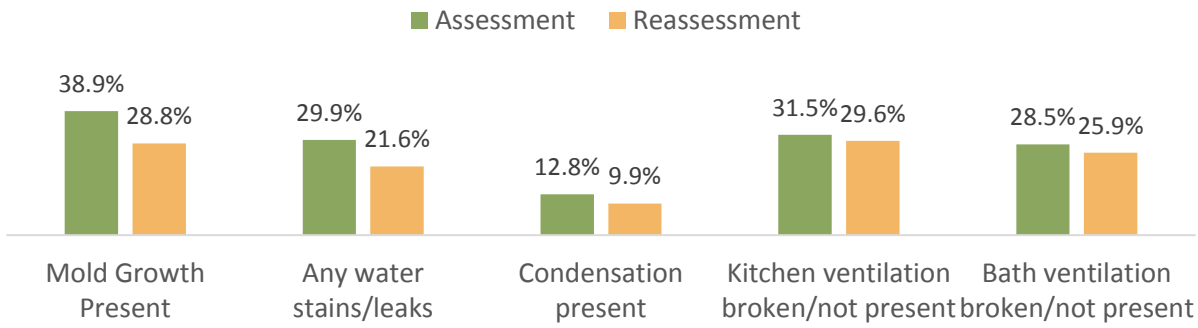

## Moisture and Mold

As described earlier in this report, mold growth and moisture issues are important factors in the health of a home. Thus, timely remediation or correction of these issues is more likely to have a positive impact on the health of the home's residents. As shown in **Figure 25**, the prevalence of mold growth declined from 38.9% at assessment to 28.8% at reassessment among the 375 homes that were reassessed. Of the 146 homes with mold growth at the assessment, 33 of them no longer had visible mold growth present at the reassessment (22.6% case correction).

Consistent with a reduction in the prevalence of mold growth, indicators of moisture problems declined between the assessment and reassessment. Water stains/leaks decreased from 29.9% at assessment to 21.6% at reassessment; condensation on windows, doors, or walls decreased from 12.8% at assessment to 9.9% at reassessment. Of the 112 homes with water stains/leaks at assessment, 31 no longer had water stains or leaks at reassessment (27.7% case correction); and of the 48 homes with condensation issues at assessment, 2 no longer had condensation at reassessment (4.2% case correction).

Proper ventilation in the high humidity environments of kitchens and bathrooms can assist in keeping moisture issues in check. The proportion of homes with broken or absent exhaust fans/vents in the kitchen decreased from 31.5% at assessment to 29.6% at reassessment, with 8 of 118 homes with the issue identified at assessment correcting the issue at reassessment (6.8% case correction). Similarly, the proportion of homes with broken or absent exhaust fans/vents in the bathroom (or lacking a functioning window in the bathroom) decreased from 28.5% at assessment to 25.9% at reassessment. Of the 107 homes identified with this issue at assessment, 12 did not have the issue when reassessed (11.2% case correction).

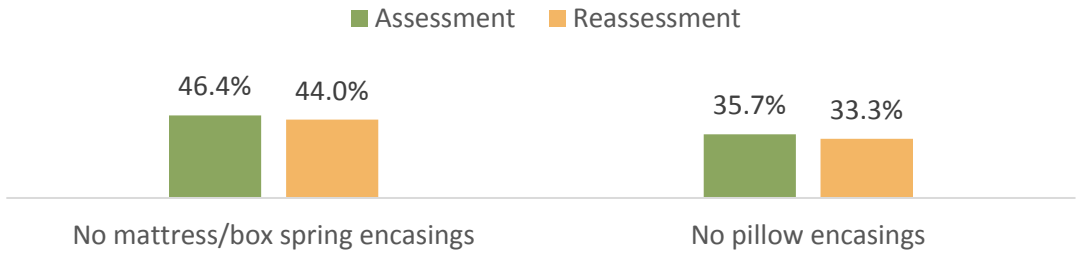
*FIGURE 25. MOISTURE AND MOLD ISSUES, ASSESSMENT VS. REASSESSMENT (N=375)*




### Sleep Environment

A key factor in a healthy sleep environment is the use of allergen impermeable encasings on mattresses, box springs, and pillows. As illustrated in **Figure 26**, the proportion of homes without encasings on mattress/box spring decreased slightly (46.4% at assessment and 44.0% at reassessment) and the proportion of homes without encasings on pillows decreased slightly (35.7% at assessment and 33.3% at reassessment). The numbers of homes that corrected these issues after they were noted on the assessment was also small. Of the 174 homes without mattress/box spring encasings at assessment, 5 did have them at reassessment (2.9% case correction) and of the 134 homes without pillow encasings at assessment, 2 did have them at reassessment (1.5% case correction).

*FIGURE 26. ALLERGEN IMPERMEABLE ENCASINGS, ASSESSMENT VS. REASSESSMENT (N=375)*

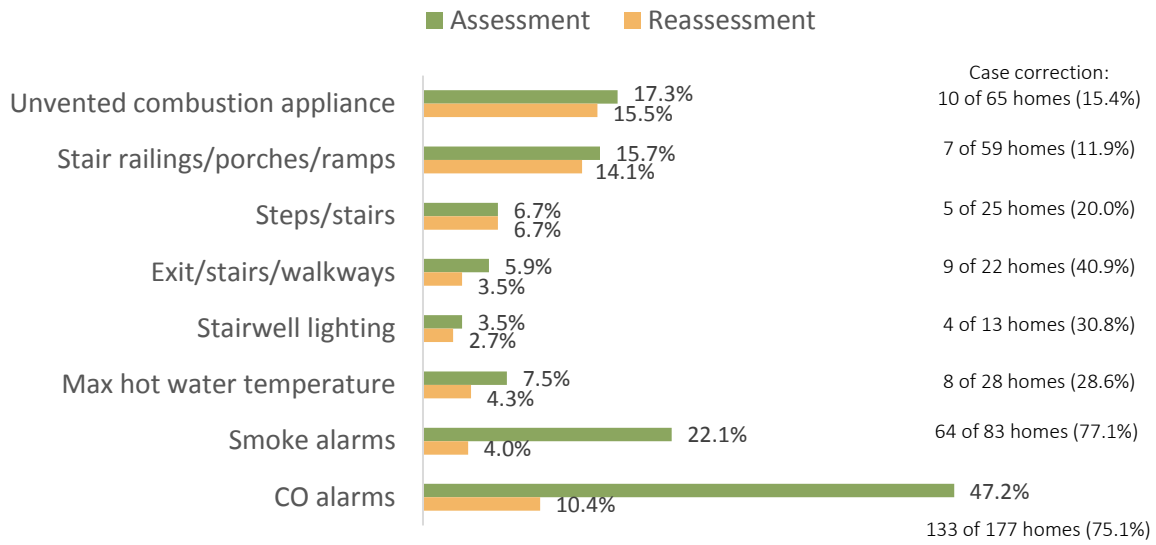



## Physical Home Safety

### Imminent Hazards

Because of the immediate dangers associated with the hazards that are included the Healthy Homes Assessment, timely correction of the issues identified are a high priority. Many of the referrals and safety kits distributed by inspectors during the assessments are directly related to these hazards. As illustrated in **Figure 27,** the proportion of homes with hazards identified did decrease between the assessment and reassessment for most of the hazards examined.

*FIGURE 27. IMMINENT HAZARDS, ASSESSMENT VS. REASSESSMENT (N=375)*




The imminent hazards that decreased the most in the group of 375 homes were the absence of CO alarms (47.2% at assessment and 10.4% at reassessment) and the absence of smoke alarms (22.1% at assessment and 4.0% at reassessment), likely attributed to the number of smoke and CO alarms that were distributed by inspectors.

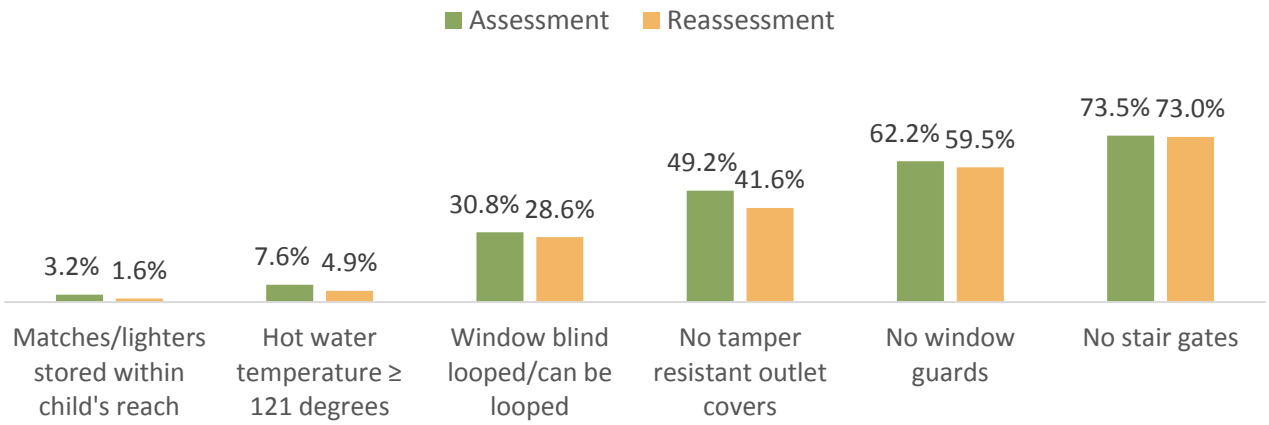
While the declines in the proportions of homes with imminent hazards were more modest for the other hazards examined, it is important to highlight the case correction rates in these cases. The overall proportion of homes with hazards identified at reassessment does include new issues that have arisen since the initial assessment was conducted, which makes the proportion a useful indicator of the presence or persistence of these hazards at the population level. On the other hand, the case correction rates for these hazards provide data on the actual number of homes that corrected or remediated the hazard after they were alerted to the issue during the assessment.

As detailed within **Figure 27**, the case correction rates for most of the imminent hazards were quite high. Over 75% of homes without smoke or CO alarms at the assessment had them at reassessment, 40.9% of homes with exits/stairs/walkways that contained tripping hazards or other obstacles had corrected the issue, 30.8% of homes with inadequate stairwell lighting had corrected the issue, and 28.6% of homes with hot water temperatures over 120 degrees Fahrenheit had corrected the issue.

## Children's Safety

The prevalence of safety hazards in the home that are specific to young children were reduced slightly between the time of assessment and reassessment, among the homes in the reassessment sample that had at least one resident under the age of 6 years (N=185). Results are shown in **Figure 28.** The largest decreases were seen in the lack of tamper resistant outlet covers (49.2% at assessment and 41.6% at reassessment). Case correction rates were generally low for each of these safety hazards, detailed data are provided in Appendix II.

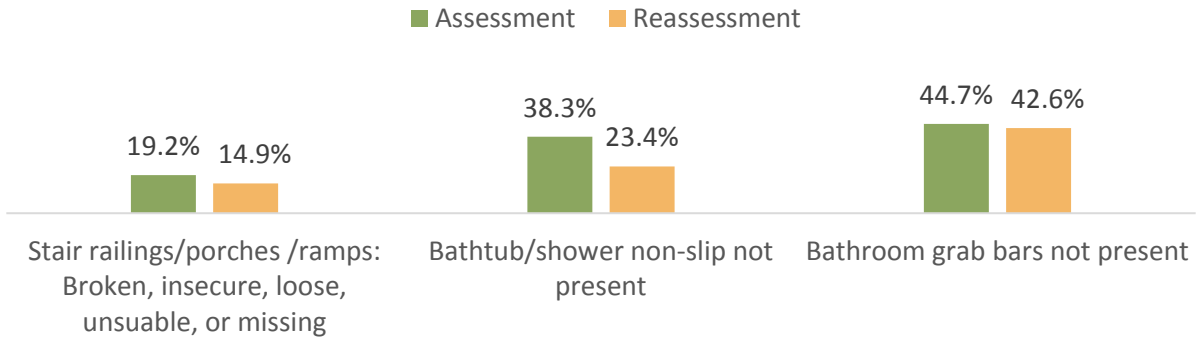
*FIGURE 28. HAZARDS TO CHILDREN < 6 YEARS, ASSESSMENT VS. REASSESSMENT (N=185)*




### Senior Safety

The prevalence of safety hazards in the home that are specific to seniors age 65 or older were reduced between the time of assessment and reassessment, among the homes in the reassessment sample that had at least one resident age 65 years or older (N=47). Results are shown in **Figure 29.** Modest decreases were observed for stair railings, porches, or ramps that were broken, insecure, loose, unusable or missing (19.2% at assessment and 14.9% at reassessment) and for the absence of bathroom grab bars (44.7% at assessment and 42.6% at reassessment). A more notable decrease was observed in the proportion of homes with seniors that lacked non-slip surface in the bathtub or shower (38.3% at assessment and 23.4% at reassessment). Of the 18 homes with seniors that did not have non-slip surfaces in the bathtub or shower at assessment, seven homes had them installed before reassessment (38.9% case correction).

*FIGURE 29. HAZARDS TO SENIORS, ASSESSMENT VS. REASSESSMENT (N=47)*



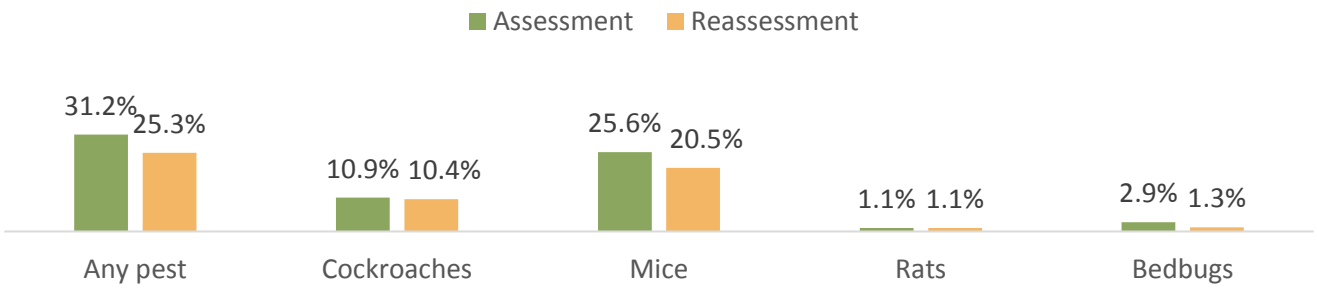

## Indoor Environmental Quality

### Pests

The proportion of homes with resident's report or evidence of any pest (cockroaches, mice, rats, or bedbugs) declined from 31.2% at assessment to 25.3% at reassessment, **Figure 30.** Of the 117 homes that had any of these pests at assessment, 28 no longer had evidence of pests at reassessment (23.9%

case correction). However, the decreases/improvements were primarily confined to reductions in homes with mice or bedbugs as the proportions of homes with cockroaches or rats were unchanged. Of the 96 homes with mice at assessment, 23 no longer reported or had evidence of mice at reassessment (24.0% case correction) and of the 11 homes with report or evidence of bedbugs at assessment, 6 had remedied the issue at reassessment (54.5% case correction). Consistent with these findings, the proportion of homes where evidence of pesticide use was noted increased slightly from 14.1% at assessment to 17.6% at reassessment.

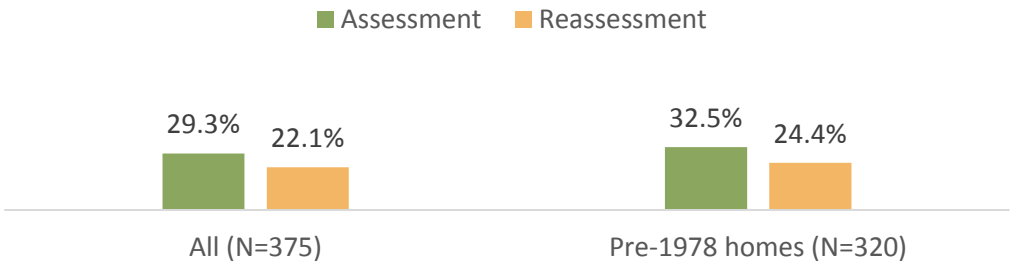
***FIGURE 30. PESTS, ASSESSMENT VS. REASSESSMENT (N=375)***




## Lead Paint

Damaged or peeling paint poses a potential health risk in homes built prior to 1978 due to an increased likelihood of the lead in the paint becoming airborne and settling as dust in the home. As illustrated in **Figure 31**, the proportion of homes with damaged or peeling paint decreased between assessment and reassessment. Among homes built prior to 1978 the proportion decreased from 32.5% to 24.4%. And among the 104 homes built prior to 1978 where the issue was identified at assessment, 25 homes had corrected the issue at reassessment (24.0% case correction rate).

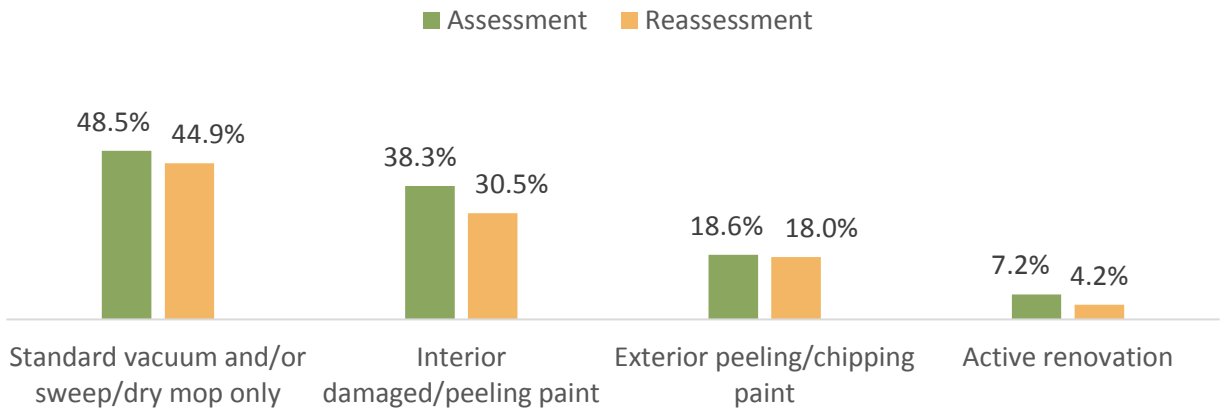
***FIGURE 31. DAMAGED OR PEELING PAINT BY AGE OF HOME, ASSESSMENT VS. REASSESSMENT (N=375)***




## Lead Poisoning Risk to Children

The timely correction of potential lead exposure risks is particularly important for homes built prior to 1978 and have young children living in them. **Figure 32** shows the assessment-reassessment results for several key indicators of lead exposure risk in the 167 homes with children under 6 years and that were built before 1978. Overall, the prevalence of these exposure risks all decreased slightly. The largest reduction was observed for the presence of damaged or peeling interior paint (38.3% at assessment and 30.5% at reassessment). Of the 64 older homes with young children that had damaged or peeling paint at assessment, 14 of them had corrected the issue at reassessment (21.9% case correction).

**FIGURE 32. LEAD POISONING RISKS TO CHILDREN < 6 IN HOMES BUILT PRE-1978 (N=167)**




# Reassessment Summary

## Deficiencies

The detailed results for other items that were not highlighted in the above assessment-reassessment sections can be found in Appendix II. As shown in **Table 6**, a total of 5,357 deficiencies were noted across the 375 assessments with an average of 14.3 deficiencies per home. Upon reassessment of the same 375 homes, a total of 5,089 deficiencies were noted, a reduction of 268 deficiencies, and the average had dropped slightly to 13.6 deficiencies per home.

**TABLE 6. SUMMARY OF DEFICIENCIES NOTED ACROSS THE ASSESSMENT-REASSESSMENT SAMPLE (N=375)**

| | ASSESSMENT Homes with at Least One Deficiency | | REASSESSMENT Homes with at Least One Deficiency | |
|---|---|---|---|---|
| | Count | Percent | Count | Percent |
| General and Exterior | 349 | 93.1% | 330 | 88.0% |
| Interior Conditions | 363 | 96.8% | 350 | 93.3% |
| General Home Safety | 361 | 96.3% | 344 | 91.7% |
| Indoor Environmental Quality | 363 | 96.8% | 360 | 96.0% |
| Any of the Above | 374 | 99.7% | 370 | 98.7% |
| | Average 14.3 per home | | Average 13.6 per home | |

## Imminent Hazards

A total of 472 Imminent Hazards were identified across the 375 reassessments with an average of 1.3 hazards per home. Upon reassessment of the same 375 homes, 229 hazards were noted, a decrease of 243 hazards, and the average number had dropped to 0.6 per home. The hazards that were addressed or corrected in the largest number of homes between the assessment and reassessment were CO alarms (138 more homes had a CO alarm upon reassessment) and smoke alarms (68 more homes had a smoke alarm upon reassessment).

*TABLE 7. SUMMARY OF IMMINENT HAZARDS NOTED IN ASSESSMENT-REASSESSMENT SAMPLE (N=375)*

| | ASSESSMENT Homes with Imminent Hazard Identified | | REASSESSMENT Homes with Imminent Hazard Identified | |
|---|---|---|---|---|
| | Count | Percent | Count | Percent |
| Unvented Combustion Appliances present | 65 | 17.3% | 58 | 15.5% |
| Stair railings/porches/ramps broken, insecure, damaged, or missing | 59 | 15.7% | 53 | 14.1% |
| Steps/stairs broken or missing | 25 | 6.7% | 25 | 6.7% |
| Exits/stairs/walkways not clear | 22 | 5.9% | 13 | 3.5% |
| Stairwell lighting not adequate | 13 | 3.5% | 10 | 2.7% |
| Maximum hot water exceeded | 28 | 7.5% | 16 | 4.3% |
| Smoke alarms non-functioning/absent | 83 | 22.1% | 15 | 4.0% |
| CO alarms non-functioning/absent | 177 | 47.2% | 39 | 10.4% |
| Any of the Above | 241 | 64.3% | 138 | 36.8% |
| | Average 1.25 per home | | Average 0.61 per home | |

# APPENDIX I

## General and Exterior Conditions in Assessment Sample

| | Total (N=1,502) | | Type of Ownership: Own (N=308) | | Type of Ownership: Rent (N=1,109) | | Age of Home: Pre-'50 (N=991) | | Age of Home: '50-'77 (N=302) | | Age of Home: '78 or later (N=105) | | Presence of Children <6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Type of Ownership** | | | | | | | | | | | | | | | | |
| Owner-occupied, single family | 308 | 20.5% | 308 | 100.0% | 0 | 0.0% | 164 | 16.5% | 95 | 31.5% | 38 | 36.2% | 128 | 20.0% | 61 | 40.9% |
| Rental, single family or multi-apartments | 1,109 | 73.8% | 0 | 0.0% | 1,109 | 100.0% | 778 | 78.5% | 196 | 64.9% | 58 | 55.2% | 477 | 74.4% | 77 | 51.7% |
| Other | 57 | 3.8% | 0 | 0.0% | 0 | 0.0% | 37 | 3.7% | 9 | 3.0% | 9 | 8.6% | 29 | 4.5% | 9 | 6.0% |
| **Age of Home** | | | | | | | | | | | | | | | | |
| Pre-1950 | 991 | 66.0% | 164 | 53.2% | 778 | 70.2% | 991 | 100.0% | 0 | 0.0% | 0 | 0.0% | 430 | 67.1% | 73 | 49.0% |
| 1950-1977 | 302 | 20.1% | 95 | 30.8% | 196 | 17.7% | 0 | 0.0% | 302 | 100.0% | 0 | 0.0% | 142 | 22.2% | 55 | 36.9% |
| 1978 or later | 105 | 7.0% | 38 | 12.3% | 58 | 5.2% | 0 | 0.0% | 0 | 0.0% | 105 | 100.0% | 29 | 4.5% | 18 | 12.1% |
| **Occupants of Dwelling Unit*** | | | | | | | | | | | | | | | | |
| Children, < 6 years | 641 | 42.7% | 128 | 41.6% | 477 | 43.0% | 430 | 43.4% | 142 | 47.0% | 29 | 27.6% | 641 | 100.0% | 23 | 15.4% |
| Children, >= 6 years | 544 | 36.2% | 109 | 35.4% | 408 | 36.8% | 351 | 35.4% | 122 | 40.4% | 29 | 27.6% | 281 | 43.8% | 15 | 10.1% |
| Adults, 18-64 years | 1,222 | 81.4% | 247 | 80.2% | 919 | 82.9% | 806 | 81.3% | 254 | 84.1% | 83 | 79.0% | 610 | 95.2% | 44 | 29.5% |
| Seniors, 65+ years | 149 | 9.9% | 61 | 19.8% | 77 | 6.9% | 73 | 7.4% | 55 | 18.2% | 18 | 17.1% | 23 | 3.6% | 149 | 100.0% |
| **Heating Fuel Source*** | | | | | | | | | | | | | | | | |
| Natural gas/propane | 1,042 | 69.4% | 167 | 54.2% | 815 | 73.5% | 716 | 72.3% | 193 | 63.9% | 62 | 59.0% | 494 | 77.1% | 70 | 47.0% |
| Oil | 289 | 19.2% | 128 | 41.6% | 149 | 13.4% | 191 | 19.3% | 72 | 23.8% | 15 | 14.3% | 108 | 16.8% | 46 | 30.9% |
| Electric | 158 | 10.5% | 18 | 5.8% | 134 | 12.1% | 86 | 8.7% | 40 | 13.2% | 25 | 23.8% | 49 | 7.6% | 36 | 24.2% |
| Wood | 4 | 0.3% | 3 | 1.0% | 1 | 0.1% | 0 | 0.0% | 2 | 0.7% | 2 | 1.9% | 2 | 0.3% | 1 | 0.7% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children <6 | | Presence of Seniors | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | (N=641) | | (N=149) | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Access to Heating Controls** | | | | | | | | | | | | | | | | |
| Hard to control, or no access to control | 197 | 13.1% | 37 | 12.0% | 153 | 13.8% | 143 | 14.4% | 39 | 12.9% | 7 | 6.7% | 79 | 12.3% | 16 | 10.7% |
| **Cooling** | | | | | | | | | | | | | | | | |
| Windows or Fans ONLY | 867 | 57.7% | 112 | 36.4% | 715 | 64.5% | 632 | 63.8% | 155 | 51.3% | 33 | 31.4% | 373 | 58.2% | 53 | 35.6% |
| **Ventilation*** | | | | | | | | | | | | | | | | |
| Open windows | 1,319 | 87.8% | 265 | 86.0% | 988 | 89.1% | 885 | 89.3% | 267 | 88.4% | 89 | 84.8% | 574 | 89.5% | 130 | 87.2% |
| Central ventilation | 74 | 4.9% | 40 | 13.0% | 30 | 2.7% | 19 | 1.9% | 26 | 8.6% | 22 | 21.0% | 23 | 3.6% | 22 | 14.8% |
| Window AC units | 336 | 22.4% | 108 | 35.1% | 206 | 18.6% | 218 | 22.0% | 82 | 27.2% | 22 | 21.0% | 156 | 24.3% | 40 | 26.8% |
| Open windows ONLY | 990 | 65.9% | 146 | 47.4% | 789 | 71.1% | 689 | 69.5% | 181 | 59.9% | 54 | 51.4% | 429 | 66.9% | 78 | 52.3% |
| **Exterior Conditions: All Homes*** | | | | | | | | | | | | | | | | |
| Peeling, chipping paint | 235 | 15.6% | 58 | 18.8% | 164 | 14.8% | 195 | 19.7% | 20 | 6.6% | 5 | 4.8% | 119 | 18.6% | 24 | 16.1% |
| Uncovered trash | 28 | 1.9% | 3 | 1.0% | 23 | 2.1% | 19 | 1.9% | 3 | 1.0% | 2 | 1.9% | 14 | 2.2% | 1 | 0.7% |
| Debris in yard | 144 | 9.6% | 28 | 9.1% | 102 | 9.2% | 111 | 11.2% | 21 | 7.0% | 5 | 4.8% | 63 | 9.8% | 15 | 10.1% |
| Overgrown shrubs, grass | 56 | 3.7% | 19 | 6.2% | 31 | 2.8% | 36 | 3.6% | 10 | 3.3% | 4 | 3.8% | 29 | 4.5% | 4 | 2.7% |
| **Windows** | | | | | | | | | | | | | | | | |
| One or more windows can't be opened | 281 | 18.7% | 72 | 23.4% | 196 | 17.7% | 220 | 22.2% | 36 | 11.9% | 13 | 12.4% | 127 | 19.8% | 25 | 16.8% |
| One or more missing or torn screens | 440 | 29.3% | 95 | 30.8% | 310 | 28.0% | 335 | 33.8% | 60 | 19.9% | 21 | 20.0% | 212 | 33.1% | 37 | 24.8% |
| One or more panes cracked, broken, or missing | 301 | 22.0% | 77 | 25.0% | 210 | 18.9% | 240 | 24.2% | 36 | 11.9% | 15 | 14.3% | 134 | 20.9% | 27 | 18.1% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children <6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Drainage - Gutters, Downspouts** | | | | | | | | | | | | | | | | |
| Not attached/ missing, not functioning, pooling of water; No gutters/downspouts | 299 | 19.9% | 96 | 31.2% | 187 | 16.9% | 223 | 22.5% | 51 | 16.9% | 17 | 16.2% | 133 | 20.7% | 29 | 19.5% |
| **Drainage - Roof flashing** | | | | | | | | | | | | | | | | |
| Roof flashing does not appear to be functioning | 148 | 9.9% | 53 | 17.2% | 89 | 8.0% | 116 | 11.7% | 21 | 7.0% | 9 | 8.6% | 55 | 8.6% | 16 | 10.7% |
| **Public Water** | | | | | | | | | | | | | | | | |
| Yes | 1,424 | 94.8% | 281 | 91.2% | 1,073 | 96.8% | 950 | 95.9% | 290 | 96.0% | 93 | 88.6% | 620 | 96.7% | 142 | 95.3% |
| ***If Public water - Water quality*** | | | | | | | | | | | | | | | | |
| No knowledge of Consumer Confidence Reports | 1,245 | 87.4% | 227 | 80.8% | 966 | 90.0% | 827 | 87.1% | 257 | 88.6% | 77 | 82.8% | 562 | 90.6% | 117 | 82.4% |
| **Private Water** | | | | | | | | | | | | | | | | |
| Yes | 36 | 2.4% | 21 | 6.8% | 12 | 1.1% | 12 | 1.2% | 11 | 3.6% | 12 | 11.4% | 9 | 1.4% | 5 | 3.4% |
| ***If Private water - Water quality*** | | | | | | | | | | | | | | | | |
| Water testing not conducted; Don't know | 22 | 61.1% | 10 | 47.6% | 11 | 91.7% | 9 | 75.0% | 6 | 54.5% | 7 | 58.3% | 6 | 66.7% | 2 | 40.0% |
| ***If Private water - Well construction*** | | | | | | | | | | | | | | | | |
| Well not visible or in pit | 6 | 16.7% | 2 | 9.5% | 4 | 33.3% | 2 | 16.7% | 2 | 18.2% | 2 | 16.7% | 3 | 33.3% | 1 | 20.0% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children <6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Septic System** | | | | | | | | | | | | | | | | |
| Failure evident (breakout) | 3 | 3.5% | 2 | 0.6% | 1 | 0.1% | 0 | 0.0% | 1 | 0.3% | 1 | 1.0% | 1 | 0.2% | 0 | 0.0% |

* Multiple responses possible

## Interior Conditions in Assessment Sample

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 | | Presence of Seniors | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | (N=641) | | (N=149) | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **General Cleanliness*** | | | | | | | | | | | | | | | | |
| Needs cleaning/ maintenance | 348 | 23.2% | 50 | 16.2% | 279 | 25.2% | 277 | 28.0% | 43 | 14.2% | 12 | 11.4% | 134 | 20.9% | 39 | 26.2% |
| Visible dust; Visible dirt and debris; Excess clutter | 295 | 19.6% | 41 | 13.3% | 237 | 21.4% | 233 | 23.5% | 41 | 13.6% | 9 | 8.6% | 130 | 20.3% | 30 | 20.1% |
| **Trash or Garbage Sealed/ Covered** | | | | | | | | | | | | | | | | |
| No | 164 | 10.9% | 18 | 5.8% | 139 | 12.5% | 133 | 13.4% | 19 | 6.3% | 4 | 3.8% | 81 | 12.6% | 10 | 6.7% |
| **Type of Cleaning*** | | | | | | | | | | | | | | | | |
| Standard vacuum | 600 | 39.9% | 168 | 54.5% | 399 | 36.0% | 389 | 39.3% | 125 | 41.4% | 54 | 51.4% | 258 | 40.2% | 72 | 48.3% |
| Sweep or dry mop | 598 | 39.8% | 132 | 42.9% | 431 | 38.9% | 394 | 39.8% | 140 | 46.4% | 29 | 27.6% | 318 | 49.6% | 47 | 31.5% |
| HEPA vacuum | 154 | 10.3% | 45 | 14.6% | 107 | 9.6% | 73 | 7.4% | 46 | 15.2% | 30 | 28.6% | 52 | 8.1% | 32 | 21.5% |
| Damp mop or Damp dusting | 759 | 50.5% | 175 | 56.8% | 539 | 48.6% | 563 | 56.8% | 127 | 42.1% | 37 | 35.2% | 347 | 54.1% | 67 | 45.0% |
| Standard vacuum and/or Sweep or Dry mop ONLY | 464 | 30.9% | 76 | 24.7% | 367 | 33.1% | 257 | 25.9% | 129 | 42.7% | 38 | 36.2% | 210 | 32.8% | 48 | 32.2% |
| **Holes (interior or exterior)** | | | | | | | | | | | | | | | | |
| Present | 416 | 27.7% | 102 | 33.1% | 293 | 26.4% | 299 | 30.2% | 68 | 22.5% | 22 | 21.0% | 213 | 33.2% | 32 | 21.5% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 | | Presence of Seniors | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | (N=641) | | (N=149) | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Damage (walls, ceilings, floors)** | | | | | | | | | | | | | | | | |
| Present | 574 | 38.2% | 134 | 43.5% | 412 | 37.2% | 432 | 43.6% | 80 | 26.5% | 32 | 30.5% | 235 | 36.7% | 59 | 39.6% |
| **Water Stains/Leaks*** | | | | | | | | | | | | | | | | |
| <4 sq. ft water stains/leaks | 354 | 23.6% | 91 | 29.5% | 249 | 22.5% | 244 | 24.6% | 67 | 22.2% | 28 | 26.7% | 147 | 22.9% | 35 | 23.5% |
| >=4 sq. ft water stains/leaks | 92 | 6.1% | 38 | 12.3% | 49 | 4.4% | 56 | 5.7% | 22 | 7.3% | 6 | 5.7% | 25 | 3.9% | 19 | 12.8% |
| Any water stains/leaks | 437 | 29.1% | 126 | 40.9% | 292 | 26.3% | 295 | 29.8% | 86 | 28.5% | 34 | 32.4% | 168 | 26.2% | 52 | 34.9% |
| **Mold and Moisture*** | | | | | | | | | | | | | | | | |
| Musty Odor | 250 | 16.6% | 83 | 26.9% | 149 | 13.4% | 185 | 18.7% | 45 | 14.9% | 15 | 14.3% | 116 | 18.1% | 25 | 16.8% |
| Unvented Dryer | 44 | 2.9% | 12 | 3.9% | 28 | 2.5% | 31 | 3.1% | 8 | 2.6% | 2 | 1.9% | 18 | 2.8% | 7 | 4.7% |
| Clothes hung to air dry | 97 | 6.5% | 11 | 3.6% | 78 | 7.0% | 74 | 7.5% | 13 | 4.3% | 9 | 8.6% | 40 | 6.2% | 8 | 5.4% |
| Condensation on windows, doors, walls | 96 | 6.4% | 35 | 11.4% | 55 | 5.0% | 53 | 5.3% | 33 | 10.9% | 8 | 7.6% | 52 | 8.1% | 10 | 6.7% |
| Mold growth present | 469 | 31.2% | 150 | 48.7% | 301 | 27.1% | 311 | 31.4% | 94 | 31.1% | 34 | 32.4% | 220 | 34.3% | 48 | 32.2% |
| **Dehumidifier** | | | | | | | | | | | | | | | | |
| Present | 70 | 4.7% | 41 | 13.3% | 28 | 2.5% | 38 | 3.8% | 18 | 6.0% | 12 | 11.4% | 30 | 4.7% | 9 | 6.0% |
| **Ventilation: Kitchen** | | | | | | | | | | | | | | | | |
| Broken or no stove exhaust fan/vent | 640 | 42.6% | 114 | 37.0% | 500 | 45.1% | 501 | 50.6% | 84 | 27.8% | 27 | 25.7% | 271 | 42.3% | 54 | 36.2% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 | | Presence of Seniors | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | (N=641) | | (N=149) | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Ventilation: Bathroom** | | | | | | | | | | | | | | | | |
| Broken or no exhaust fan/vent or functioning window | 526 | 35.0% | 124 | 40.3% | 377 | 34.0% | 416 | 42.0% | 64 | 21.2% | 18 | 17.1% | 215 | 33.5% | 50 | 33.6% |
| **Allergen impermeable encasings** | | | | | | | | | | | | | | | | |
| No covers on Mattress or Box Spring | 536 | 35.7% | 165 | 53.6% | 377 | 34.0% | 360 | 36.3% | 150 | 49.7% | 44 | 41.9% | 241 | 37.6% | 75 | 50.3% |
| No covers on Pillows | 449 | 29.9% | 135 | 43.8% | 282 | 25.4% | 284 | 28.7% | 113 | 37.4% | 30 | 28.6% | 208 | 32.4% | 48 | 32.2% |
| No Covers on Mattress or Box Spring or Pillows | 497 | 33.1% | 143 | 46.4% | 322 | 29.0% | 307 | 31.0% | 127 | 42.1% | 40 | 38.1% | 224 | 34.9% | 66 | 44.3% |
| **Encasings*** | | | | | | | | | | | | | | | | |
| Mattress Covered, Not Zippered | 598 | 39.8% | 84 | 27.3% | 493 | 44.5% | 434 | 43.8% | 104 | 34.4% | 20 | 19.0% | 301 | 47.0% | 42 | 28.2% |
| Box Spring Covered, Not Zippered | 450 | 30.0% | 47 | 15.3% | 388 | 35.0% | 327 | 33.0% | 88 | 29.1% | 11 | 10.5% | 228 | 35.6% | 31 | 20.8% |
| Pillows Covered, Not Zippered | 521 | 34.7% | 64 | 20.8% | 440 | 39.7% | 369 | 37.2% | 100 | 33.1% | 13 | 12.4% | 272 | 42.4% | 33 | 22.1% |
| **Soft Materials*** | | | | | | | | | | | | | | | | |
| Pillows: Feather/down; Don't know | 195 | 13.0% | 50 | 16.2% | 135 | 12.2% | 148 | 14.9% | 30 | 9.9% | 10 | 9.5% | 88 | 13.7% | 24 | 16.1% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| Bedding: Feather/down; Not washable (wool); Don't know | 130 | 8.7% | 25 | 8.1% | 97 | 8.7% | 112 | 11.3% | 9 | 3.0% | 5 | 4.8% | 54 | 8.4% | 12 | 8.1% |
| Flooring: Large rug/Small rug/Wall-to-wall carpet present | 702 | 46.7% | 191 | 62.0% | 472 | 42.6% | 446 | 45.0% | 155 | 51.3% | 65 | 61.9% | 290 | 45.2% | 94 | 63.1% |

* Multiple responses possible

## General Home Safety in Assessment Sample

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Unvented Combustion Appliances**** | | | | | | | | | | | | | | | | |
| Present | 328 | 21.8% | 82 | 26.6% | 233 | 21.0% | 261 | 26.3% | 31 | 10.3% | 16 | 15.2% | 156 | 24.3% | 29 | 19.5% |
| **Stair Railings/Porches /Ramps**** | | | | | | | | | | | | | | | | |
| Broken, insecure: damaged, loose, unusable; Missing | 239 | 15.9% | 72 | 23.4% | 154 | 13.9% | 186 | 18.8% | 35 | 11.6% | 9 | 8.6% | 102 | 15.9% | 23 | 15.4% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| *If so, refer to appropriate authority?* | 60 | 25.1% | 7 | 9.7% | 53 | 34.4% | 52 | 28.0% | 6 | 17.1% | 1 | 11.1% | 22 | 21.6% | 3 | 13.0% |
| **Steps/Stairs**** | | | | | | | | | | | | | | | | |
| One or more broken or missing | 93 | 6.2% | 29 | 9.4% | 60 | 5.4% | 69 | 7.0% | 16 | 5.3% | 5 | 4.8% | 35 | 5.5% | 8 | 5.4% |
| *If so, refer to appropriate authority?* | 21 | 22.6% | 1 | 3.4% | 20 | 33.3% | 19 | 27.5% | 2 | 12.5% | 0 | 0.0% | 5 | 14.3% | 1 | 12.5% |
| **Exits/Stairs/ Walkways Kept Clear**** | | | | | | | | | | | | | | | | |
| Tripping hazards, other obstructions present | 56 | 3.7% | 16 | 5.2% | 36 | 3.2% | 38 | 3.8% | 15 | 5.0% | 0 | 0.0% | 25 | 3.9% | 10 | 6.7% |
| *If so, refer to appropriate authority?* | 17 | 30.4% | 4 | 25.0% | 12 | 33.3% | 11 | 28.9% | 6 | 40.0% | 0 | 0.0% | 6 | 24.0% | 4 | 40.0% |
| **Stairwell Lighting**** | | | | | | | | | | | | | | | | |
| Light not present at top and bottom of stairs | 41 | 2.7% | 12 | 3.9% | 27 | 2.4% | 30 | 3.0% | 7 | 2.3% | 3 | 2.9% | 21 | 3.3% | 8 | 5.4% |
| *If so, refer to appropriate authority?* | 12 | 29.3% | 4 | 33.3% | 8 | 29.6% | 9 | 30.0% | 1 | 14.3% | 1 | 33.3% | 4 | 19.0% | 5 | 62.5% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 | | Presence of Seniors | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | (N=641) | | (N=149) | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Hot water**** | | | | | | | | | | | | | | | | |
| Max Temp 121 degrees F or greater | 54 | 3.6% | 11 | 3.6% | 41 | 3.7% | 24 | 2.4% | 17 | 5.6% | 6 | 5.7% | 28 | 4.4% | 10 | 6.7% |
| No hot water available | 29 | 1.9% | 3 | 1.0% | 24 | 2.2% | 24 | 2.4% | 3 | 1.0% | 1 | 1.0% | 9 | 1.4% | 3 | 2.0% |
| *If so, refer to appropriate authority?* | 21 | 72.4% | 3 | 100.0% | 17 | 70.8% | 18 | 75.0% | 1 | 33.3% | 1 | 100.0% | 7 | 77.8% | 3 | 100.0% |
| **Smoke Alarms**** | | | | | | | | | | | | | | | | |
| Smoke alarms installed, but no power or battery; No smoke alarms | 297 | 19.8% | 70 | 22.7% | 212 | 19.1% | 205 | 20.7% | 64 | 21.2% | 10 | 9.5% | 118 | 18.4% | 23 | 15.4% |
| *If so, refer to appropriate authority?* | 46 | 15.5% | 8 | 11.4% | 36 | 17.0% | 33 | 16.1% | 11 | 17.2% | 1 | 10.0% | 16 | 13.6% | 4 | 17.4% |
| **CO Alarms**** | | | | | | | | | | | | | | | | |
| CO alarms installed, but no power or battery; No CO alarms | 813 | 54.1% | 132 | 42.9% | 638 | 57.5% | 604 | 60.9% | 130 | 43.0% | 31 | 29.5% | 309 | 48.2% | 65 | 43.6% |
| If so, refer to appropriate authority? | 162 | 19.9% | 16 | 12.1% | 142 | 22.3% | 129 | 21.4% | 27 | 20.8% | 4 | 12.9% | 60 | 19.4% | 17 | 26.2% |
| **Family Fire Escape Plan** | | | | | | | | | | | | | | | | |
| None | 1,021 | 68.0% | 174 | 56.5% | 787 | 71.0% | 670 | 67.6% | 216 | 71.5% | 74 | 70.5% | 437 | 68.2% | 99 | 66.4% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 | | Presence of Seniors | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | (N=641) | | (N=149) | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Poison Control Number** | | | | | | | | | | | | | | | | |
| Not posted by phone | 1,043 | 69.4% | 199 | 64.6% | 784 | 70.7% | 704 | 71.0% | 206 | 68.2% | 72 | 68.6% | 442 | 69.0% | 100 | 67.1% |
| **Child Tamper-Resistant Outlet Covers** | | | | | | | | | | | | | | | | |
| No tamper-resistant outlet covers | 588 | 39.1% | 120 | 39.0% | 435 | 39.2% | 443 | 44.7% | 89 | 29.5% | 26 | 24.8% | 400 | 62.4% | 26 | 17.4% |
| **Matches and Lighters Stored** | | | | | | | | | | | | | | | | |
| Within children's reach | 26 | 1.7% | 4 | 1.3% | 20 | 1.8% | 16 | 1.6% | 4 | 1.3% | 1 | 1.0% | 13 | 2.0% | 2 | 1.3% |
| **Cleaning Supplies, Pesticides, Other Chemicals Stored** | | | | | | | | | | | | | | | | |
| Within children's reach | 45 | 3.0% | 6 | 1.9% | 35 | 3.2% | 21 | 2.1% | 14 | 4.6% | 3 | 2.9% | 35 | 5.5% | 2 | 1.3% |
| **Medicine and Vitamins Stored** | | | | | | | | | | | | | | | | |
| Within children's reach | 14 | 0.9% | 2 | 0.6% | 10 | 0.9% | 6 | 0.6% | 3 | 1.0% | 1 | 1.0% | 11 | 1.7% | 3 | 2.0% |
| **Window Blind Cords** | | | | | | | | | | | | | | | | |
| Looped or can loop (accessible to children) | 312 | 20.8% | 74 | 24.0% | 220 | 19.8% | 223 | 22.5% | 60 | 19.9% | 18 | 17.1% | 183 | 28.5% | 13 | 8.7% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Stair Gates** | | | | | | | | | | | | | | | | |
| No stair gates | 754 | 50.2% | 127 | 41.2% | 596 | 53.7% | 549 | 55.4% | 130 | 43.0% | 23 | 21.9% | 486 | 75.8% | 36 | 24.2% |
| **Window Guards (above 1st Floor)** | | | | | | | | | | | | | | | | |
| None or broken | 730 | 48.6% | 129 | 41.9% | 566 | 51.0% | 540 | 54.5% | 118 | 39.1% | 26 | 24.8% | 460 | 71.8% | 40 | 26.8% |
| **Step/Stair/Floor Covering** | | | | | | | | | | | | | | | | |
| Covering on stairs and/or floor not firmly attached or is in poor condition | 35 | 2.3% | 16 | 5.2% | 19 | 1.7% | 25 | 2.5% | 5 | 1.7% | 3 | 2.9% | 11 | 1.7% | 4 | 2.7% |
| **Hallway Lighting** | | | | | | | | | | | | | | | | |
| Inadequate, not present | 47 | 3.1% | 9 | 2.9% | 35 | 3.2% | 39 | 3.9% | 5 | 1.7% | 2 | 1.9% | 13 | 2.0% | 8 | 5.4% |
| **Living Area Lighting** | | | | | | | | | | | | | | | | |
| Inadequate, not present | 30 | 2.0% | 9 | 2.9% | 19 | 1.7% | 26 | 2.6% | 3 | 1.0% | 0 | 0.0% | 5 | 0.8% | 5 | 3.4% |
| **Bathtub/Shower Non-Slip** | | | | | | | | | | | | | | | | |
| Non-slip surface not present | 848 | 56.5% | 168 | 54.5% | 632 | 57.0% | 658 | 66.4% | 110 | 36.4% | 43 | 41.0% | 373 | 58.2% | 55 | 36.9% |
| **Bathroom Grab Bars** | | | | | | | | | | | | | | | | |
| Not installed | 652 | 43.4% | 131 | 42.5% | 492 | 44.4% | 503 | 50.8% | 73 | 24.2% | 33 | 31.4% | 284 | 44.3% | 76 | 51.0% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children < 6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Electrical Plate Covers** | | | | | | | | | | | | | | | | |
| Cover is missing (exposed wiring); Cover is broken | 168 | 11.2% | 28 | 9.1% | 128 | 11.5% | 145 | 14.6% | 14 | 4.6% | 5 | 4.8% | 60 | 9.4% | 14 | 9.4% |
| **Extension Cord Use** | | | | | | | | | | | | | | | | |
| Extension cords not used properly | 63 | 4.2% | 18 | 5.8% | 42 | 3.8% | 46 | 4.6% | 11 | 3.6% | 5 | 4.8% | 25 | 3.9% | 8 | 5.4% |
| **Extension Cord Condition** | | | | | | | | | | | | | | | | |
| Not good: Extension cords cracked or frayed | 9 | 0.6% | 5 | 1.6% | 4 | 0.4% | 5 | 0.5% | 2 | 0.7% | 0 | 0.0% | 6 | 0.9% | 0 | 0.0% |

** Can indicate housing, building, or fire code violation

## Indoor Environmental Quality in Assessment Sample

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children <6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| **Pets** | | | | | | | | | | | | | | | | |
| Cat; Dog; Other | 458 | 30.5% | 116 | 37.7% | 323 | 29.1% | 267 | 26.9% | 129 | 42.7% | 35 | 33.3% | 215 | 33.5% | 38 | 25.5% |
| Pet has full access | 308 | 20.5% | 74 | 24.0% | 220 | 19.8% | 182 | 18.4% | 85 | 28.1% | 24 | 22.9% | 136 | 21.2% | 29 | 19.5% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children <6 (N=641) | | Presence of Seniors (N=149) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| throughout home | | | | | | | | | | | | | | | | |
| **Pests*** | | | | | | | | | | | | | | | | |
| Cockroaches - Evidence seen; Family reports | 198 | 13.2% | 15 | 4.9% | 177 | 16.0% | 153 | 15.4% | 23 | 7.6% | 4 | 3.8% | 97 | 15.1% | 11 | 7.4% |
| Mice - Evidence seen; Family reports | 295 | 19.6% | 49 | 15.9% | 237 | 21.4% | 196 | 19.8% | 60 | 19.9% | 9 | 8.6% | 148 | 23.1% | 19 | 12.8% |
| Rats - Evidence seen; Family reports | 36 | 2.4% | 9 | 2.9% | 26 | 2.3% | 27 | 2.7% | 5 | 1.7% | 1 | 1.0% | 16 | 2.5% | 0 | 0.0% |
| Bedbugs - Evidence seen; Family reports | 66 | 4.4% | 3 | 1.0% | 61 | 5.5% | 51 | 5.1% | 8 | 2.6% | 2 | 1.9% | 27 | 4.2% | 2 | 1.3% |
| Any of the above | 420 | 28.0% | 64 | 20.8% | 342 | 30.8% | 291 | 29.4% | 77 | 25.5% | 13 | 12.4% | 207 | 32.3% | 28 | 18.8% |
| **Evidence of Pesticide Use** | | | | | | | | | | | | | | | | |
| Yes | 157 | 10.5% | 39 | 12.7% | 110 | 9.9% | 111 | 11.2% | 27 | 8.9% | 13 | 12.4% | 80 | 12.5% | 17 | 11.4% |
| **Active renovation** | | | | | | | | | | | | | | | | |
| Yes | 111 | 7.4% | 30 | 9.7% | 77 | 6.9% | 85 | 8.6% | 10 | 3.3% | 7 | 6.7% | 47 | 7.3% | 4 | 2.7% |
| **Damage or peeling paint** | | | | | | | | | | | | | | | | |
| Present | 457 | 30.4% | 115 | 37.3% | 310 | 28.0% | 354 | 35.7% | 66 | 21.9% | 12 | 11.4% | 219 | 34.2% | 51 | 34.2% |
| **Provided with Lead-based paint booklet provided** | | | | | | | | | | | | | | | | |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children <6 | | Presence of Seniors | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | (N=641) | | (N=149) | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| No | 746 | 49.7% | 110 | 35.7% | 602 | 54.3% | 523 | 52.8% | 138 | 45.7% | 44 | 41.9% | 308 | 48.0% | 67 | 45.0% |
| **Asbestos** | | | | | | | | | | | | | | | | |
| Not Tested; Not tested--Suspect Material present; Tested-Present and in poor condition | 1,219 | 81.2% | 267 | 86.7% | 881 | 79.4% | 841 | 84.9% | 221 | 73.2% | 96 | 91.4% | 490 | 76.4% | 130 | 87.2% |
| **Radon** | | | | | | | | | | | | | | | | |
| Not Tested; >=4 pCi/L but not mitigated | 1,059 | 70.5% | 204 | 66.2% | 790 | 71.2% | 732 | 73.9% | 192 | 63.6% | 83 | 79.0% | 418 | 65.2% | 113 | 75.8% |
| **Tobacco Smoke*** | | | | | | | | | | | | | | | | |
| Smoking allowed indoors | 148 | 9.9% | 25 | 8.1% | 113 | 10.2% | 100 | 10.1% | 27 | 8.9% | 15 | 14.3% | 51 | 8.0% | 18 | 12.1% |
| Smoking allowed outdoors | 148 | 9.9% | 19 | 6.2% | 123 | 11.1% | 80 | 8.1% | 51 | 16.9% | 5 | 4.8% | 84 | 13.1% | 8 | 5.4% |
| Evidence of smoking seen | 119 | 7.9% | 23 | 7.5% | 88 | 7.9% | 76 | 7.7% | 23 | 7.6% | 16 | 15.2% | 42 | 6.6% | 16 | 10.7% |
| Visitors allowed to smoke in home | 99 | 6.6% | 20 | 6.5% | 75 | 6.8% | 66 | 6.7% | 20 | 6.6% | 11 | 10.5% | 35 | 5.5% | 12 | 8.1% |
| Any of the above | 301 | 20.0% | 46 | 14.9% | 239 | 21.6% | 184 | 18.6% | 79 | 26.2% | 21 | 20.0% | 135 | 21.1% | 28 | 18.8% |
| **Smokers** | | | | | | | | | | | | | | | | |
| >= 1 smoker lives in home | 156 | 10.4% | 28 | 9.1% | 117 | 10.6% | 104 | 10.5% | 33 | 10.9% | 16 | 15.2% | 64 | 10.0% | 19 | 12.8% |
| **Other Irritants** | | | | | | | | | | | | | | | | |
| Air Fresheners; Potpourri, | 611 | 40.7% | 170 | 55.2% | 417 | 37.6% | 353 | 35.6% | 176 | 58.3% | 41 | 39.0% | 312 | 48.7% | 56 | 37.6% |

| | Total (N=1,502) | | Type of Ownership | | | | Age of Home | | | | | | Presence of Children <6 | | Presence of Seniors | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Own (N=308) | | Rent (N=1,109) | | Pre-'50 (N=991) | | '50-'77 (N=302) | | '78 or later (N=105) | | (N=641) | | (N=149) | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| incense, candles; Other | | | | | | | | | | | | | | | | |

* Multiple responses possible

# APPENDIX II

## General Characteristics of Reassessment Sample

| | Reassessment Sample (N=375) | |
|---|---|---|
| | **N** | **%** |
| **Type of Ownership** | | |
| Owner-occupied, single family | 98 | 26.1% |
| Rental, single family or multi-apartments | 265 | 70.7% |
| Other | 7 | 1.9% |
| **Age of Home** | | |
| Pre-1950 | 180 | 48.0% |
| 1950-1977 | 140 | 37.3% |
| 1978 or later | 31 | 8.3% |
| **Occupants of Dwelling Unit*** | | |
| Children, < 6 years | 185 | 49.3% |
| Children, >= 6 years | 146 | 38.9% |
| Adults, 18-64 years | 320 | 85.3% |
| Seniors, 65+ years | 47 | 12.5% |

## Exterior Conditions in Reassessment Sample

| | Assessment (N=375) | | Reassessment (N=375) | | Corrected Cases ‡ | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **Exterior Conditions: All Homes*** | | | | | | |
| Peeling, chipping paint | 57 | 15.2% | 53 | 14.1% | - | - |
| Uncovered trash | 10 | 2.7% | 10 | 2.7% | - | - |
| Debris in yard | 44 | 11.7% | 30 | 8.0% | - | - |
| Overgrown shrubs, grass | 25 | 6.7% | 22 | 5.9% | - | - |
| Any of the above | 93 | 24.8% | 78 | 20.8% | 18 | 19.4% |
| **Windows** | | | | | | |
| One or more windows can't be opened | 74 | 19.7% | 63 | 16.8% | 11 | 14.9% |
| One or more missing or torn screens | 103 | 27.5% | 91 | 24.3% | 15 | 14.6% |
| One or more panes cracked, broken, or missing | 72 | 19.2% | 65 | 17.3% | 10 | 13.9% |
| **Drainage - Gutters, Downspouts** | | | | | | |
| Not attached/missing, not functioning, pooling of water; No gutters/downspouts | 93 | 24.8% | 91 | 24.3% | 9 | 9.7% |
| **Drainage - Roof flashing** | | | | | | |
| Roof flashing does not appear to be functioning | 40 | 10.7% | 43 | 11.5% | 6 | 15.0% |
| **Knowledge of Water Quality** | | | | | | |
| Public - No knowledge of Consumer Confidence Reports | 320 | 90.4% | 309 | 88.0% | 14 | 4.3% |
| Private - Water testing not conducted; Don't know | 8 | 47.1% | 6 | 35.3% | | |
| **Private Water** | | | | | | |
| Well not visible or in pit | 3 | 17.6% | 3 | 17.6% | 0 | 0.0% |
| **Septic System** | | | | | | |
| Failure evident (breakout) | 2 | 0.5% | 1 | 0.3% | 0 | 0.0% |

* Multiple responses possible

‡ Proportion based only upon the homes that had the deficiency identified at the initial assessment

- Indicates case correction analysis was not conducted on the specific indicator

## Interior Conditions in Reassessment Sample

| | Assessment (N=375) | | Reassessment (N=375) | | Corrected Cases ‡ | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **General Cleanliness*** | | | | | | |
| Needs cleaning and maintenance | 60 | 16.0% | 50 | 13.3% | - | - |
| Visible dust; Visible dirt and debris; Excess clutter | 66 | 17.6% | 67 | 17.9% | - | - |
| Any of the above | 90 | 24.0% | 79 | 21.1% | 3 | 3.3% |
| **Trash or Garbage Sealed/Covered** | | | | | | |
| No | 29 | 7.7% | 25 | 6.7% | 5 | 17.2% |
| **Type of Cleaning*** | | | | | | |
| Standard vacuum | 151 | 40.3% | 155 | 41.3% | - | - |
| Sweep or dry mop | 170 | 45.3% | 166 | 44.3% | - | - |
| HEPA vacuum | 43 | 11.5% | 41 | 10.9% | - | - |
| Damp mop or Damp dusting | 148 | 39.5% | 158 | 42.1% | - | - |
| Standard vacuum and/or Sweep or Dry mop ONLY | 162 | 43.2% | 150 | 40.0% | - | - |
| *If HOME BUILT PRE-1978: Standard vacuum and/or Sweep or Dry mop ONLY* | *135* | *42.2%* | *129* | *40.3%* | *23* | *17.0%* |
| *If HOME BUILT PRE-1978 AND CHILD < 6: Standard vacuum and/or Sweep or Dry mop ONLY* | *81* | *48.5%* | *75* | *44.9%* | *8* | *9.9%* |
| **Holes (interior or exterior)** | | | | | | |
| Present | 143 | 38.1% | 106 | 28.3% | 42 | 29.4% |
| **Damage (walls, ceilings, floors)** | | | | | | |
| Present | 115 | 30.7% | 91 | 24.3% | 26 | 22.6% |
| **Water Stains/Leaks*** | | | | | | |
| <4 sq. ft water stains/leaks | 86 | 22.9% | 68 | 18.1% | - | - |
| >=4 sq. ft water stains/leaks | 27 | 7.2% | 13 | 3.5% | - | - |
| Any water stains/leaks | 112 | 29.9% | 81 | 21.6% | 31 | 27.7% |
| **Mold and Moisture*** | | | | | | |
| Musty Odor | 76 | 20.3% | 68 | 18.1% | - | - |

| | Assessment (N=375) | | Reassessment (N=375) | | Corrected Cases ‡ | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Unvented Dryer | 16 | 4.3% | 8 | 2.1% | - | - |
| Clothes hung to air dry | 21 | 5.6% | 20 | 5.3% | - | - |
| Any of the above | 94 | 25.1% | 78 | 20.8% | 28 | 29.8% |
| **Condensation** | | | | | | |
| Condensation on windows, doors, walls | 48 | 12.8% | 37 | 9.9% | 2 | 4.2% |
| **Mold** | | | | | | |
| Mold growth present | 146 | 38.9% | 108 | 28.8% | 33 | 22.6% |
| **Dehumidifier Present** | | | | | | |
| No | 352 | 93.9% | 348 | 92.8% | 11 | 3.1% |
| **Ventilation: Kitchen** | | | | | | |
| Broken or no stove exhaust fan/vent | 118 | 31.5% | 111 | 29.6% | 8 | 6.8% |
| **Ventilation: Bathroom** | | | | | | |
| Broken or no exhaust fan/vent or functioning window | 107 | 28.5% | 97 | 25.9% | 12 | 11.2% |
| **Allergen Impermeable Encasings** | | | | | | |
| No covers on Mattress or Box Spring | 174 | 46.4% | 165 | 44.0% | 5 | 2.9% |
| No covers on Pillows | 134 | 35.7% | 125 | 33.3% | 2 | 1.5% |
| **Soft Materials*** | | | | | | |
| Pillows: Feather/down; Don't know | 60 | 16.0% | 63 | 16.8% | 12 | 20.0% |
| Bedding: Feather/down; Not washable (wool); Don't know | 20 | 5.3% | 18 | 4.8% | 7 | 35.0% |
| Flooring: Large rug/Small rug/Wall-to-wall carpet present | 207 | 55.2% | 189 | 50.4% | 17 | 8.2% |

* Multiple responses possible

‡ Proportion based only upon the homes that had the deficiency identified at the initial assessment

- Indicates case correction analysis was not conducted on the specific indicator

## General Home Safety in Reassessment Sample

| | Assessment (N=375) | | Reassessment (N=375) | | Corrected Cases ‡ | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **Unvented Combustion Appliances**** | | | | | | |
| Present | 65 | 17.3% | 58 | 15.5% | 10 | 15.4% |
| **Stair Railings/Porches/Ramps**** | | | | | | |
| Broken, insecure: damaged, loose, unusable; Missing | 59 | 15.7% | 53 | 14.1% | 7 | 11.9% |
| *If so, refer to appropriate authority?* | *8* | *13.6%* | *3* | *5.7%* | - | - |
| *IF SENIOR IN HOME: Broken/damaged/missing* | *9* | *19.1%* | *7* | *14.9%* | *2* | *22.2%* |
| **Steps/Stairs**** | | | | | | |
| One or more broken or missing | 25 | 6.7% | 25 | 6.7% | 5 | 20.0% |
| *If so, refer to appropriate authority?* | *1* | *4.0%* | *0* | *0.0%* | - | - |
| **Exits/Stairs/Walkways Kept Clear**** | | | | | | |
| Tripping hazards, other obstructions present | 22 | 5.9% | 13 | 3.5% | 9 | 40.9% |
| *If so, refer to appropriate authority?* | *8* | *36.4%* | *2* | *15.4%* | - | - |
| **Stairwell Lighting**** | | | | | | |
| Light not present at top and bottom of stairs | 13 | 3.5% | 10 | 2.7% | 4 | 30.8% |
| *If so, refer to appropriate authority?* | *4* | *30.8%* | *2* | *20.0%* | - | - |
| **Hot water**** | | | | | | |
| Max Temp 121 degrees F or greater | 28 | 7.5% | 16 | 4.3% | 8 | 28.6% |
| *IF CHILD <6 IN HOME: Max temp 121 or greater* | *14* | *7.6%* | *9* | *4.9%* | *4* | *28.6%* |
| No hot water available | 4 | 1.1% | 2 | 0.5% | 4 | 100.0% |
| *If so, refer to appropriate authority?* | *3* | *75.0%* | *2* | *100.0%* | - | - |
| **Smoke Alarms**** | | | | | | |
| Smoke alarms installed, but no power or battery; No smoke alarms | 83 | 22.1% | 15 | 4.0% | 64 | 77.1% |
| *If so, refer to appropriate authority?* | *13* | *15.7%* | *0* | *0%* | - | - |
| **CO Alarms**** | | | | | | |

| | Assessment (N=375) | | Reassessment (N=375) | | Corrected Cases ‡ | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| CO alarms installed, but no power or battery; No CO alarms | 177 | 47.2% | 39 | 10.4% | 133 | 75.1% |
| If so, refer to appropriate authority? | 28 | 15.8% | 2 | 5.1% | - | - |
| **Family Fire Escape Plan** | | | | | | |
| None | 256 | 68.3% | 238 | 63.5% | 29 | 11.3% |
| **Poison Control Number** | | | | | | |
| Not posted by phone | 286 | 76.3% | 222 | 59.2% | 67 | 23.4% |
| **Child Tamper-Resistant Outlet Covers** | | | | | | |
| No tamper-resistant outlet covers | 137 | 36.5% | 122 | 32.5% | 21 | 15.3% |
| *IF CHILD <6 IN HOME: No tamper-resistant outlet covers* | *91* | *49.2%* | *77* | *41.6%* | *14* | *15.4%* |
| **Matches and Lighters Stored** | | | | | | |
| Within children's reach | 10 | 2.7% | 6 | 1.6% | 5 | 50.0% |
| *IF CHILD <6 IN HOME: Within children's reach* | *6* | *3.2%* | *3* | *1.6%* | *2* | *33.3%* |
| **Cleaning Supplies, Pesticides, Other Chemicals Stored** | | | | | | |
| Within children's reach | 13 | 3.5% | 7 | 1.9% | 6 | 46.2% |
| *IF CHILD <6 IN HOME: Within children's reach* | *12* | *6.5%* | *7* | *3.8%* | *5* | *41.7%* |
| **Medicine and Vitamins Stored** | | | | | | |
| Within children's reach | 5 | 1.3% | 4 | 1.1% | 2 | 40.0% |
| *IF CHILD <6 IN HOME: Within children's reach* | *5* | *2.7%* | *3* | *1.6%* | *2* | *40.0%* |
| **Window Blind Cords** | | | | | | |
| Looped or can loop (accessible to children) | 89 | 23.7% | 87 | 23.2% | 6 | 6.7% |
| *IF CHILD <6 IN HOME: Looped or can loop* | *57* | *30.8%* | *53* | *28.6%* | *4* | *7.0%* |
| **Stair Gates** | | | | | | |
| No stair gates | 180 | 48.0% | 189 | 50.4% | 11 | 6.1% |
| *IF CHILD <6 IN HOME: No stair gates* | *136* | *73.5%* | *135* | *73.0%* | *9* | *6.6%* |

| | Assessment (N=375) | | Reassessment (N=375) | | Corrected Cases ‡ | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **Window Guards (above 1st Floor)** | | | | | | |
| None or broken | 160 | 42.7% | 155 | 41.3% | 14 | 8.8% |
| *IF CHILD <6 IN HOME: None or broken* | *115* | *62.2%* | *110* | *59.5%* | *8* | *7.0%* |
| **Step/Stair/Floor Covering** | | | | | | |
| Covering on stairs and/or floor not firmly attached or is in poor condition | 13 | 3.5% | 11 | 2.9% | 3 | 23.1% |
| **Hallway Lighting** | | | | | | |
| Inadequate, not present | 11 | 2.9% | 9 | 2.4% | 2 | 18.2% |
| **Living Area Lighting** | | | | | | |
| Inadequate, not present | 7 | 1.9% | 7 | 1.9% | 2 | 28.6% |
| **Bathtub/Shower Non-Slip** | | | | | | |
| Non-slip surface not present | 149 | 39.7% | 131 | 34.9% | 32 | 21.5% |
| *IF SENIOR IN HOME: Non-slip surface not present* | *18* | *38.3%* | *11* | *23.4%* | *7* | *38.9%* |
| **Bathroom Grab Bars** | | | | | | |
| Not installed | 126 | 33.6% | 125 | 33.3% | 17 | 13.5% |
| *IF SENIOR IN HOME: Not installed* | *21* | *44.7%* | *20* | *42.6%* | *2* | *9.5%* |
| **Electrical Plate Covers** | | | | | | |
| Cover is missing (exposed wiring); Cover is broken | 30 | 8.0% | 22 | 5.9% | 9 | 30.0% |
| **Extension Cord Use** | | | | | | |
| Extension cords not used properly | 26 | 6.9% | 19 | 5.1% | 9 | 34.6% |
| **Extension Cord Condition** | | | | | | |
| Not good: Extension cords cracked or frayed | 5 | 1.3% | 4 | 1.1% | 0 | 0.0% |

** Can indicate housing, building, or fire code violation

‡ Proportion based only upon the homes that had the deficiency identified at the initial assessment

- Indicates case correction analysis was not conducted on the specific indicator

## Indoor Environmental Quality in Reassessment Sample

| | Assessment (N=375) | | Reassessment (N=375) | | Corrected Cases ‡ | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **Pets** | | | | | | |
| Cat; Dog; Other | 164 | 43.7% | 153 | 40.8% | - | - |
| Pet has full access throughout home | 104 | 27.7% | 99 | 26.4% | 1 | 1.0% |
| **Pests*** | | | | | | |
| Cockroaches - Evidence seen; Family reports | 41 | 10.9% | 39 | 10.4% | 5 | 12.2% |
| Mice - Evidence seen; Family reports | 96 | 25.6% | 77 | 20.5% | 23 | 24.0% |
| Rats - Evidence seen; Family reports | 4 | 1.1% | 4 | 1.1% | 0 | 0.0% |
| Bedbugs - Evidence seen; Family reports | 11 | 2.9% | 5 | 1.3% | 6 | 54.5% |
| Any of the above | 117 | 31.2% | 95 | 25.3% | 28 | 23.9% |
| **Evidence of Pesticide Use** | | | | | | |
| Yes | 53 | 14.1% | 66 | 17.6% | 6 | 11.3% |
| **Active renovation** | | | | | | |
| Yes | 29 | 7.7% | 20 | 5.3% | 12 | 41.4% |
| *If HOME BUILT PRE-1978: Yes* | *21* | *6.6%* | *15* | *4.7%* | - | - |
| **Damage or peeling paint** | | | | | | |
| Present | 110 | 29.3% | 83 | 22.1% | 27 | 24.5% |
| *If HOME BUILT PRE-1978: Present* | *104* | *32.5%* | *78* | *24.4%* | *25* | *24.0%* |
| *If HOME BUILT PRE-1978 AND CHILDREN < 6: Present* | *64* | *38.3%* | *51* | *30.5%* | *14* | *21.9%* |
| **Provided with Lead-based paint booklet provided** | | | | | | |
| No | 163 | 43.5% | 160 | 42.7% | 11 | 6.7% |
| *If HOME BUILT PRE-1978: No* | *140* | *43.8%* | *135* | *42.2%* | *11* | *7.9%* |
| **Asbestos** | | | | | | |
| Not Tested; Not tested--Suspect Material present; Tested-Present and in poor condition | 256 | 68.3% | 267 | 71.2% | 3 | 1.2% |

| | Assessment (N=375) | | Reassessment (N=375) | | Corrected Cases ‡ | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **Radon** | | | | | | |
| Not Tested; >=4 pCi/L but not mitigated | 226 | 60.3% | 210 | 56.0% | 9 | 4.0% |
| **Tobacco Smoke*** | | | | | | |
| Smoking allowed indoors | 58 | 15.5% | 54 | 14.4% | - | - |
| Smoking allowed outdoors | 73 | 19.5% | 69 | 18.4% | - | - |
| Evidence of smoking seen | 50 | 13.3% | 51 | 13.6% | - | - |
| Visitors allowed to smoke in home | 46 | 12.3% | 47 | 12.5% | - | - |
| Any of the above | 131 | 34.9% | 122 | 32.5% | 9 | 6.9% |
| **Other Irritants** | | | | | | |
| Air Fresheners; Potpourri, incense, candles; Other | 239 | 63.7% | 225 | 60.0% | 22 | 9.2% |

* Multiple responses possible

‡ Proportion based only upon the homes that had the deficiency identified at the initial assessment

- Indicates case correction analysis was not conducted on the specific indicator

# Appendix III

## Analytic Business Rules

### Dataset

- The assessment dates range from September 10, 2010, to September 29, 2016, using a cut-off date of September 30, 2016.
- However, if an assessment or reassessment was performed during this timeframe, but not entered into the SS after the cut-off date of September 30, 2016, it was not included in the analytic dataset.
- For the purposes of describing the characteristics of homes in the sample, and sub-group identification/analyses, only the data as reported in the 'General Housing Characteristics' section were used. If the home was in the assessment-reassessment sample, only the data as reported in the 'General Housing Characteristics' section on the initial assessment were used.

### Calculating Proportions

- N=1,502 was used as the denominator for assessment data.
- N=375 was used as the denominator for reassessment data.
- Any homes with data that indicated the presence of a given deficiency or hazard was included in the numerator.
- Homes with a field left blank or with data that suggested the item was not applicable (e.g. 999, 123) were retained in the denominator and the given deficiency or hazard was considered not to be present.
- For sub-group analyses, the denominator was limited to the sample of homes with data on that sub-groups' key characteristic (e.g. Home built before 1950, occupancy includes a child under 6 years, etc.), thus any home missing data on the key characteristic was excluded from the denominator and sub-group analyses.

### Analysis of Reassessments

- Only homes with an assessment and reassessment, matched by unique ID, were included in analysis.
- Prevalence of a given deficiency or hazard at each timepoint was based on the proportions of homes with the presence of a given deficiency or hazard at each timepoint, regardless of the presence/absence of the deficiency or hazard at assessment.
- Case correction was based upon only the homes that were identified as having the given deficiency or hazard at the initial assessment, thus the denominator was unique for each item. The case was considered as 'corrected' if the deficiency or hazard was no longer present on the reassessment (for example, a home was noted as lacking a CO alarm at assessment, but the reassessment of the home did not note it to be lacking a CO alarm).