

Essentials for Healthy Homes Practitioners



Overview

- Welcome to the Essentials for Healthy Homes Practitioner course. In this Overview module, we will discuss
- Why are healthy homes important?
- The connection between housing and health
- A holistic approach to healthy housing
- The Seven Principles of Healthy Housing Basic Statistics – American Housing Survey
- Can We Make Change?
- Codes Related to Healthy Homes
- Federal Health Priorities: Healthy People 2020 Objectives
- Green Building Properties
- National Healthy Homes Training Center & Network
- Course Outline
- Key Messages
- Review Learning Objectives



“The connection between health and the dwelling of the population is one of the most important that exists.”

Florence Nightingale¹

Overview

Start with People

House as a System

Keep It:

1. Dry

2. Clean

3. Pest-Free

4. Ventilated

5. Safe

6. Contaminant-Free

7. Maintained

Making it Work

Learning Objectives for this module

- Describe four housing conditions and their associated health problems
- Identify three populations at higher risk for housing related disease and injury
- Identify three types of codes used to enforce remediation of housing-related hazards.

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Why Are Healthy Homes Important?

The role of housing as a contributor to health known for decades, while new agents and pathways continue to be discovered and explored. In the early 1800s, the relation between housing conditions and health was recognized among public health practitioners in the United States and Europe and led to the rise of the sanitary reform movement.

Slum clearance and improving the quality of housing and sanitation were important components of 19th and 20th century campaigns to control typhus, tuberculosis, and other infectious diseases. Interest in housing as a determinant of health has fluctuated in response to housing-related infectious disease outbreaks (e.g. cholera in New York City in the 1830's), social unrest and class conflict, industrial interest in maintaining a healthier workforce, and economic downturns leading to crises in housing availability and quality.

The physical home environment as a determinant of health is gaining renewed attention. Researchers have linked indoor air pollution and other exposures in homes to acute and chronic diseases, including cancer.

Today, we know that the primary exposure setting for most Americans is the indoor environment. Most of us, especially children, spend more time inside than outside. Young children spend about 70% of the time in their home.² The air we breathe and things we touch inside matter. Yet the primary focus of health and environmental regulations are on the outside environment.

Housing is a multi-dimensional construct, which affects health both directly and indirectly. A significant body of research acknowledges and supports the case that housing conditions have a direct effect on health. Research also points to the health dangers associated with overcrowding, excessive expenditures on shelter, and homelessness. Inside the home, there is the potential for physical, chemical and biological exposures. Housing is also seen as a component of general well-being—it confers a sense of security, privacy, and control. It also is related to one's perception of social status, in both individual and community contexts.

A range of health problems result from hazards in houses including injuries, asthma and other respiratory illnesses, carbon monoxide poisoning, cancers, and childhood lead poisoning.

Why do we care?

Here are some estimates of the costs associated with unhealthy housing. The estimate of \$54.9 billion listed below is likely low because it considers only four categories of illness and does not include the cost of lost days from school and work.

Why do we care?

Housing affects health both directly and indirectly through:

- Physical, chemical, biological exposures, and
- Psychological impacts

Annual costs for environmentally attributable childhood diseases in the U.S.: \$55.4 billion

Lead Poisoning	Neurobehavioral disorders	Asthma	Childhood Cancer
\$43.9 Billion	\$9.2 Billion	\$2.0 Billion	\$0.3 Billion

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- Additional costs from asthma care for the more than 10 million missed school days a year.
- Asthma contributes to approximately 3% of total health care costs.

How significant is the problem?

American Housing Survey - 2011

Occupied Housing Units	Severe Physical Problems	Moderate Physical Problems	Total
2007	1.8 million	4.0 million	5.8 million
2009	1.9 million	3.9 million	5.8 million
2011	2.1 million	4.1 million	6.2 million

Based on 2007 data, the Centers for Disease Control and Prevention (CDC) set a goal of reducing the number of occupied homes with severe and moderate physical problems from 5.2 % to 4.2%. CDC uses the American Housing Survey to measure progress to this goal. In 2011, the percent of occupied homes with severe and moderate problems was 5.4%.

In the broadest sense, housing is the right to not just basic shelter but to “adequate housing” in terms of legal security of tenure; availability of services, materials, facilities, and infrastructure; affordability; habitability; accessibility; and location and cultural adequacy.

Maslow’s Hierarchy of Need

The graphic on the next page illustrates Maslow’s Hierarchy of Needs. Housing is related to safety and security. The key message is that you must satisfy basic needs first then you can get to the other needs. For people to be contributing members of society, we need to address their safety and security concerns – that means they must be safe and secure in their home.

Physiological needs: Include basic necessities such as air, water, food, sleep.

Safety and Security: Includes keeping ourselves out of danger and from feeling threatened, having shelter from the environment, and feeling safe when walking in a neighborhood.

Belonging: Humans have a desire to belong to groups (clubs, work groups, religious groups, family) because we need to feel loved and desired by others.

Ego: Humans have:

- Esteem needs to achieve, be competent, gain approval, and gain recognition.
- Cognitive needs include the need to know, to understand, and to explore.
- Aesthetic needs or a desire for symmetry, order, and beauty.

Self-actualization: Human need to find self-fulfillment and realize one’s full potential.

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This graphic below emphasizes the very special place a home has in our history and our emotions. While Maslow's Hierarchy of Need makes analytical sense, it misses this emotional mark. This page was developed by Deb Millette at CDC. The first quote on the right—by William Pitt—captures the information perfectly: it may have serious physical problems but it

Home is where the heart is.
Pliny

*It may be frail; its roof may shake;
the wind may blow through it; the
storms may enter; the rain may enter
– but the King of England cannot
enter; all his forces dare not cross the
threshold of the ruined tenement.*
William Pitt

One of our deepest needs is to be at home.
Timothy Radcliffe

*Where thou art,
that is home.*
Emily Dickinson

Home is the place where,
when you have to go there,
They have to take you in.
Robert Frost

The strength of a nation derives from the integrity of the home.
Confucius

There's no place like home.
Dorothy, Wizard of Oz

He is happiest, be he king or peasant,
who finds peace in his home.
Johann Wolfgang von Goethe



The Connection Between Health and Housing

Two Key Institute of Medicine (IOM) Reports

The 2000 IOM report called “Clearing the Air” addressed the connection between asthma and exposures in the home. It laid the foundation for the healthy homes effort. The second IOM report was published in 2004 and evaluated the connection between dampness and health. See pages 1–2 of the References section.

Pay special attention to the first two rows of the reports – “Sufficient evidence of a causal relationship” and “Sufficient evidence of a relationship.” Note that the first report differentiates between hazards on the left half of the page (causing asthma to develop) and hazards on the right-half of the page—those that can trigger asthma attacks (exacerbation).

Also on page 5 of the References section, you will see the 2005 World Health Organization (WHO) report exploring evidence of quantifiable linkages between diseases and housing.

As noted above, the two IOM summary reports are from 2000 (biological and chemical exposures and asthma) and 2004 (health outcomes and damp indoor environments). Those two reports are still the authoritative sources for the association between asthma and biological and chemical exposures in the home and between asthma and damp indoor environments. However, there are a number of more recent papers published that support the IOM conclusions and provide small updates.

In addition, the 2009 World Health Organization Guidelines for Indoor Air Quality (on Dampness and Mold) update the associations between dampness and mold and several health conditions. This report directly addresses the 2004 IOM report on health outcomes and damp indoor environments.

Updated information:

1. Stronger evidence on the association between asthma and mice:

- The 2000 IOM report said there was inadequate or insufficient evidence to determine if an association exists between asthma and rodents.
- A study published that year (Phipatanakul et al. 2000) concluded that mouse allergen may be an important indoor allergen in inner-city children with asthma. The study stated that “we believe that mouse allergen is likely to be an important indoor allergen that has thus far been underrecognized.”³
- Another study published in 2006 (Matsui et al. 2006) came to the same conclusion. That paper stated that “In mouse-sensitized inner-city children, exposure to mouse allergen may be an important cause of asthma morbidity.”⁴

2. Stronger evidence on the association between asthma and rats:

- The 2000 IOM report said there was inadequate or insufficient evidence to determine if an association exists between asthma and rodents.
- A study published in 2003 (Perry et al 2003) concluded that rat allergen sensitization and exposure are associated with increased asthma morbidity in inner-city children.⁵

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3. Updated information from the 2009 World Health Organization Guidelines for Indoor Air Quality (on Dampness and Mold):⁶

- Dampness/mold and Asthma exacerbation (or asthma symptoms in sensitized persons) stays in the Sufficient Evidence of an Association.
 - Note that the Guidelines state that: “For . . . asthma exacerbation, we consider the evidence to be sufficient to document an association and almost sufficient to document causality of dampness-related factors. A number of newly available studies added to the evidence of an association between dampness and asthma exacerbation.” (Pages 70–71.)

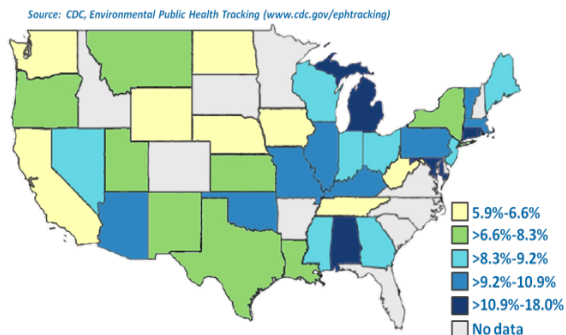
- Dampness/mold and Asthma development moves from **Limited or Suggestive Evidence of an Association** to **Sufficient Evidence of an Association**.
- Dampness/mold and Current asthma (not evaluated in 2004) is placed in **Sufficient Evidence of an Association**.
- Dampness/mold and Respiratory infections (not evaluated in 2004) is placed in **Sufficient Evidence of an Association**.
- Dampness/mold and Upper respiratory tract symptoms, cough, and wheeze all stay in the **Sufficient Evidence of an Association**.
- Dampness/mold and Shortness of breath (dyspnoea) moves from: **Limited or Suggestive Evidence of an Association** to **Sufficient Evidence of an Association**.
- Mold and Hypersensitivity pneumonitis stays in the **Sufficient Evidence of an Association**.
- Mold and Humidifier fever and inhalation fevers move from: **Limited or Suggestive Evidence of an Association** to **Sufficient Evidence of an Association**.
- Dampness/mold and Allergic rhinitis and bronchitis is placed in **Limited or Suggestive Evidence of an Association**.
- Lung function, allergy or atopy, and “asthma, ever” is placed in **Inadequate or Insufficient Evidence to Determine Whether or Not an Association Exists**.

Also helpful to review are CDC maps showing the prevalence of childhood and adult asthma across the United States.⁷ The prevalence and number of persons with asthma have increased since 2001, and demographic differences among population subgroups persist despite improvements in outdoor air quality and decreases in cigarette smoking and secondhand smoke exposure. CDC’s top priority is getting people to manage their asthma better. Asthma has been more prevalent among children than adults, women than men, and blacks than whites since 2001. Similarly, in 2009, asthma was more prevalent among children, women, non-Hispanic blacks, the poor, and in the Northeast and Midwest. The cause of this variation remains unclear and might be the result of multiple characteristics associated with asthma development and disease duration including genetic predisposition, history of atopy (a genetic tendency to develop an allergic reaction), health risk factors (e.g., smoking, obesity), earlier diagnosis, socioeconomic status (e.g., education or occupation), and exposure to environmental allergens or irritants (e.g., mold, tobacco smoke, secondhand smoke exposure, pet dander, outdoor air pollution, and any upper respiratory infection, such as influenza or common cold).⁸

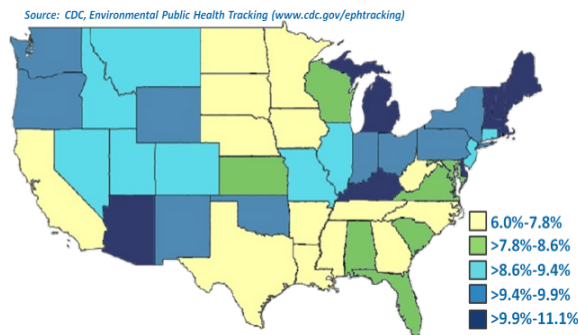
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Childhood Asthma Current prevalence, 2010 BRFSS data



Adult Asthma Current prevalence, 2010 BRFSS data



You can find these and other maps online as part of the CDC Behavioral Risk Factor Surveillance System (BRFSS) or the CDC Environmental Public Health Tracking Network: You can find these and other maps online as part of the CDC Behavioral Risk Factor Surveillance System (BRFSS) or the CDC Environmental Public Health Tracking Network: <http://ephttracking.cdc.gov/showAsthma.action> (click on Search Data).

A Holistic Approach to Healthy Housing

In this course we are introducing a different way of thinking about the home environment. We are proposing that instead of using a categorical approach, we should be using a holistic approach.

This is an integrated approach that considers the people living in the home, the structure, and the potential health hazards. Considering health and housing problems together in a coordinated way is more efficient and prevention-effective. Healthy Homes programs offer a comprehensive and coordinated approach by promoting interagency collaboration, community participation, and cross training.

Holistic Approach Integrated approach that considers:

- People living in the home.
- The structure
- Potential health hazards

Deb Millette of CDC developed the charts on the next page to emphasize the connections between the hazards in a house.

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Moisture/water intrusion



Mold



Asthma exacerbation



Moisture/
water intrusion



Structural damage

Structural damage



Pests



Deteriorated lead paint/
lead poisoning

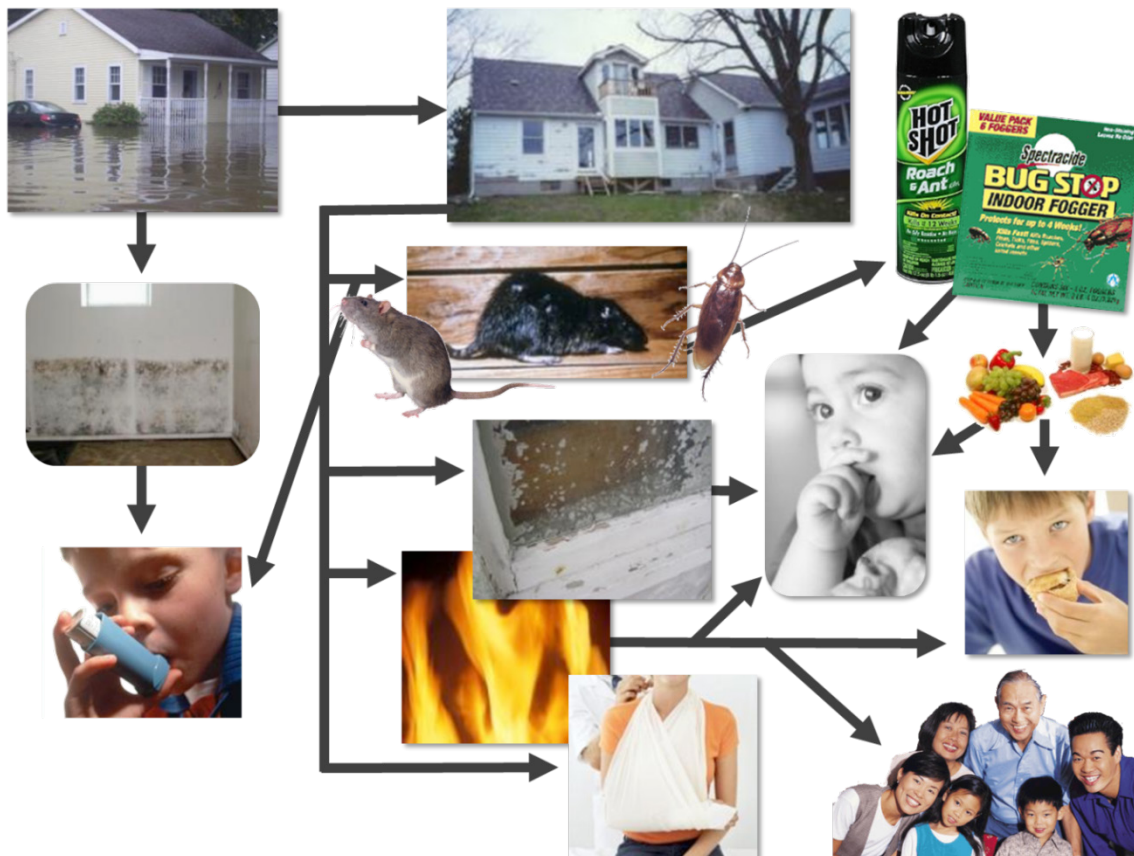


Fire



Injuries

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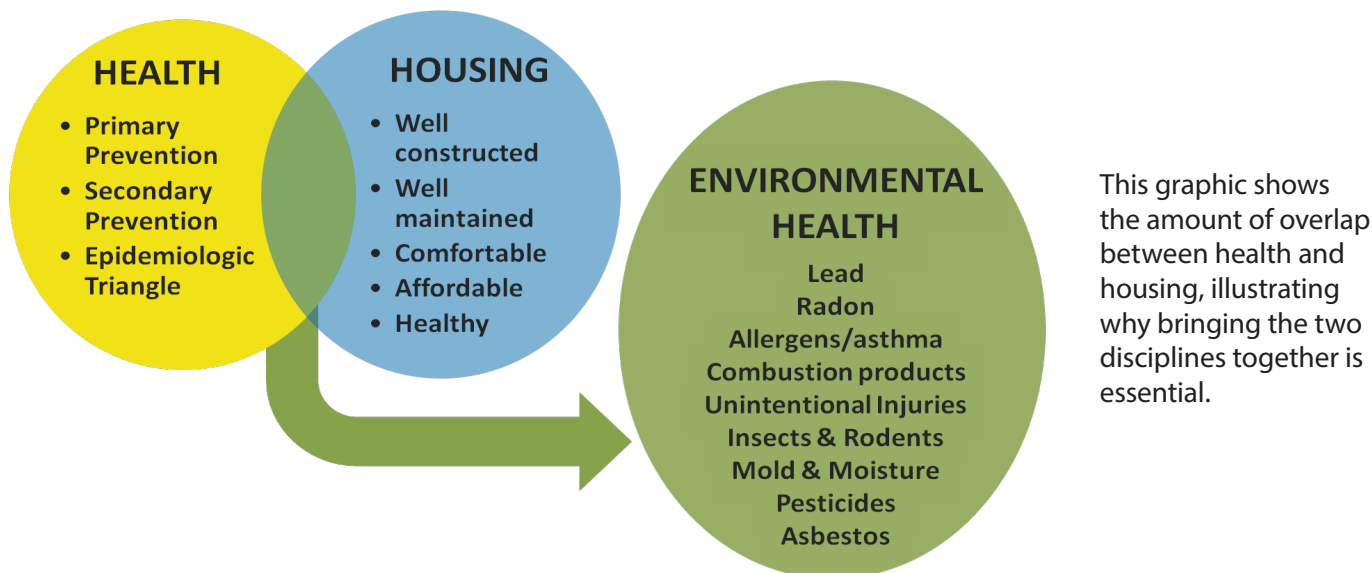


This is a summary of the previous graphics. Note the confusing, multiple interconnections.

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Below is a depiction of three different approaches to address the connection between health and housing.



Understanding the landscape can help you navigate how your public agencies provide health and housing services.

Health in the graphic above refers to public health, as well as environmental health. Often environmental health is a department within the department of public health. However, it may also be a stand-alone department.

The Seven Principles of Healthy Housing

While there is no recipe that can guarantee a healthy home, you'll be learning about key principles that can help create healthier indoor environments. You'll hear about these principles throughout the course of the training.

Healthy homes is a systems level approach. We have few programs that look at the whole home environment and the total needs of a family. In this training, we are introducing a new way of thinking about the home environment—an integrated approach that considers the people living in the home, the structure, and the potential health hazards. Considering health and housing problems together in a coordinated way is more efficient and prevention-effective.

Healthy Homes programs offer a comprehensive and coordinated approach by promoting interagency collaboration, community participation, and cross training. That is why we have convened this multi-disciplinary training. By design, we have recruited public health, housing, and environmental health professionals. Many of the core healthy homes principles are captured in the codes and regulations designed to protect residents.

-  **Keep It:**
-  1. Dry
 -  2. Clean
 -  3. Pest-Free
 -  4. Ventilated
 -  5. Safe
 -  6. Contaminant-Free
 -  7. Maintained

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What is Healthy Housing?

Healthy Housing is

- Designed
- Constructed
- Maintained, and
- Rehabilitated

—in a manner that is conducive to good occupant health.

This is the definition of healthy housing that the National Center for Healthy Housing uses. There is no statutory or regulatory definition of healthy housing. Note that the definition brings in occupant health – starting with people.

Basic Statistics - the American Housing Survey Data [AHS]

- Conducted by the U.S. Census Bureau
- Funded by HUD
- Conducted every two years since the 1980s
- Periodically for 47 Metropolitan Statistical Areas (MSA)
- Consistent set of homes
- Phone survey since 1997

Overview of the AHS⁹

NCHH has created a summary of healthy homes elements from the 2011 national AHS data—see below and on the next page. Your instructor will go over data on the housing-related health hazards that are a significant problem in the United States. You should also become familiar with the AHS data on your nearest metropolitan statistical area (MSA). NCHH provides this data to your instructor as well as the national data. Here are the categories covered in the national AHS data

- General Description of Housing (including year built and type of foundation)
- Exterior Problems (including exterior water leakage)
- Interior Problems (including interior water leakage, rodents, and electrical)
- Sanitation/Water Problems & Safety Devices
- Heating/Fuel (including main heating, water heating, clothes dryer, problems)
- Selected Physical Problems and Overall Opinion of Structure.

Demographics	Exterior Problems
<ul style="list-style-type: none">• 114.9 million homes• 33.8% rental• 64.2% single-family detached homes• 61.3% built pre-1980• 32.7% basement under all of house*	<ul style="list-style-type: none">• 18% exterior physical problems• 3.6% missing roofing material• 11% exterior water leakage

AHS National 2011

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Additional Information Included in the Data Packet:

- Overview and Key Definitions. Note the tests for holds in floors and open cracks at the end.
- Overview and Key Definitions. Note the tests for holes in floors and open cracks at end.
- Rating System. This will help you understand what moderate and severe physical problems mean. These homes have serious problems.
- Potential Errors in AHS. You should understand that a high level of inconsistency means that a high level of inconsistency means that you need to use caution in using these numbers.
- Table Showing Relationship Between Interior and Exterior Problems

Interior Problems	Safety Devices	Heating
<ul style="list-style-type: none"> • 8.5% interior water leakage • 5.2% open cracks or holes • 3.6% pipes leaked • 11.1% mice • 9.4% blown fuses or breakers 	<ul style="list-style-type: none"> • 5.3% no working smoke alarm • 56.9% more than two-year old fire extinguisher • 54.9% no carbon monoxide alarm 	<ul style="list-style-type: none"> • 64.1% warm air furnace • 1.0% room heater without flue • 0.9% stove as main heating equipment • 9.1% uncomfortably cold

AHS National 2011

Here is a sample of AHS data for a particular community.

Characteristic	Outside Central City				Central City			
	Owner-Occupied		Rental		Owner-Occupied		Rental	
	Number/Percent	National	Number/Percent	National	Number/Percent	National	Number/Percent	National
Number of units	449,400	-	257,600	-	59,200	-	89,500	-
Percent of Area	63.6%	-	36.4%	12,765,700	39.8%	-	60.2%	-
Median year of construction	1968	-	1965	-	1944	-	1950	-
% Pre-1940	9.5%	-	13.5%	-	43.1%	25.5%	38.2%	-
% Post-1979	27.3%	-	18.1%	29.6%	15.0%	-	5.3%	17.7%
% Below poverty	8.1%	-	3.7%	18.0%	13.5%	9.6%	8.3%	25.6%
Basic Housing Quality	-	-	-	-	-	-	-	-
Severe physical problems	0.9%	-	3.5%	2.4%	1.1%	1.6%	6.5%	4.6%
Moderate physical problems	2.2%	-	6.8%	-	2.7%	-	9.7%	-
Interior Problems	-	-	-	-	-	-	-	-
Holes in floors	0.2%	0.6%	1.9%	1.4%	0.7%	-	3.0%	-
Open cracks or holes in walls	7.4%	3.5%	10.8%	6.2%	9.3%	5.0%	13.4%	-
Broken plaster/peeling paint	2.2%	1.6%	6.4%	3.4%	4.4%	2.5%	10.0%	5.7%
Signs of rats	1.8%	0.6%	1.8%	1.0%	3.2%	1.0%	3.4%	2.2%
Signs of mice	6.4%	-	8.1%	5.6%	7.9%	5.6%	10.1%	-
Water leaks from inside	10.9%	8.0%	17.4%	11.7%	10.1%	-	17.4%	-
Water leaks from outside	17.7%	12.8%	16.1%	9.4%	30.3%	14.3%	18.4%	10.6%
Water supply stoppage	5.0%	-	9.9%	5.3%	2.4%	-	5.5%	-
Flush toilet breakdown	2.7%	1.7%	6.8%	4.6%	1.9%	-	6.0%	-
Sewage disposal breakdown	2.1%	1.3%	3.8%	2.1%	2.3%	-	3.8%	2.5%
Lacking complete plumbing	1.5%	0.8%	1.9%	-	2.6%	1.2%	2.5%	-
Heating equip breakdown	2.4%	1.5%	4.4%	2.3%	1.5%	2.0%	6.0%	4.3%
Space heater w/o flues	0.9%	2.8%	1.9%	3.8%	0.7%	3.0%	4.8%	-
Exposed wiring in unit	0.2%	0.5%	1.0%	-	0.0%	0.5%	1.3%	0.8%
Rooms w/o working elect. outlet	0.9%	-	2.7%	-	2.2%	1.3%	5.4%	2.4%
Lacking kitchen facilities	0.9%	0.5%	4.0%	-	1.2%	0.6%	6.6%	4.8%
Exterior Problems	-	-	-	-	-	-	-	-
Roofing problems	8.3%	4.5%	11.5%	7.0%	11.1%	6.1%	12.9%	7.1%
Siding problems	3.8%	2.0%	8.3%	4.0%	6.1%	2.7%	9.9%	5.2%
Window problems	4.0%	2.9%	7.4%	4.8%	8.3%	4.5%	11.7%	7.1%
Foundation problems	3.1%	1.9%	4.6%	3.0%	5.4%	3.0%	5.8%	4.0%

This one-page profile compares various types of housing to national averages. Green is good. More green is better. Red is bad. More red is worse.

The hyphens mean the local information is close to the national average for similar housing. Where the number is significantly better or worse, the national number is listed.

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Data from the American Housing Survey also shows that there is clearly a relationship between interior problems and exterior problems in a house. If you were doing a windshield survey, for example, and see a house that has exterior problems such as a hole in the roof or broken windows, that home likely has interior problems as well.

No place like home!

<i>Resident Overall Opinion of Structure, American Housing Survey – National 2011</i>						
	Worst					Best
Type of resident	1	2-4	5-7	8	9	10
All	0.6%	2.0%	23.6%	27.2%	16.0%	30.6%
Renters	1.1%	3.7%	32.8%	27.8%	12.7%	21.9%
Below Poverty	1.5%	4.4%	29.5%	24.4%	11.3%	28.9%

People like their home, even if it has serious problems. If you are trying to make homes healthier, you must realize this challenge. The numbers above come from the 2011 National American Housing Survey. Residents rate their home on a 1 to 10 scale. 1 is the worst. 10 is the best. More than half of all groups rate their home at 8 or better—even those living below the poverty level. We think this means that people balance cost, health, comfort and other factors to make a decision. They also think there is no place like home.

Real World Complex

It is often difficult to address the many interrelated healthy homes issues. Part of the reason that this is so difficult is that the real world is extremely complex and many factors including the ones listed below contribute to the complexity.

- Current knowledge
- Economic factors
- Social and cultural
- Political and legal factors
- “DO NO Harm”

For example, we have to look at what we currently know and identify gaps in our knowledge. While we tend to focus on identifying health effects associated with exposure to one agent, often we don’t know the health effects associated with exposure to several agents simultaneously.

Funding, social and cultural, and political issues also play a role in how we identify and address healthy housing issues.

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Can We Make a Change?

Yes, we can make things change. In 2007, CDC published how the country had improved on Smoke-Free Home Rules. These are homes where the residents made a rule—not a law—that smoking is not allowed inside the home. More recent statistics concerning homes with a no smoking rule confirm this improvement: 43% in 1992–1993, 72% in 2003 and 81.8% in 2009–2010.¹⁰

Healthy Homes Interventions

In 2008, CDC and NCHH convened an expert panel to evaluate the effectiveness of various healthy homes interventions. The expert panel considered a number of categories of health hazards in the home and the interventions available to deal with these hazards. According to available research, the expert panel placed each intervention into one of the following categories:

- Effective
- Needs More Field Evaluation
- Needs Formative Research
- No Evidence of Ineffective

See <http://www.nchh.org/Research/Archived-Research-Projects/Housing-Interventions-and-Health-Outcomes.aspx> for the full report.

Until effective standards for the domestic environment are devised, it is likely that children will continue to be employed as biological indicators of substandard housing. Improving the quality of the nation’s housing can form a foundation for the health and well-being of families across the country. Reducing the amount of substandard housing and creating healthier neighborhoods is a task that requires public health and housing officials to find “a meeting place” for their shared interests – together they offer a powerful voice and the capacity to create large-scale system level change in the way we develop, deliver, and value housing in America.

Standards are in place to address some, but not all of the problems that result in unhealthy homes. The next section provides an overview of those codes and standards.



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Codes Related to Healthy Homes

This section will cover the following types of codes:

- Health / Sanitation Codes
- Housing / Property Maintenance Codes
- Landlord–Tenant Laws
- Product Standards
- Hazard Management Laws

There are different names for housing and health codes. You should know the difference between housing, building, and zoning codes.

- Zoning codes define what kind of buildings can go into a community.
- Building codes define how buildings must be built or rebuilt
- Housing codes define how buildings must be maintained.

(See *Laws, Rules and Codes for Healthier Homes: Review of Approaches Impacting Existing Homes and International Property Maintenance Code* in the References section.)



International Property Maintenance Code (IPMC)?

A: Yes, Definitely. You should review the IPMC requirements and identify which sections are violated by the house featured in this photo.

These are common provisions in housing or a health code. Review your local code for these provisions

- Structural integrity
- Weatherproof
- Maintained
- Cracks and holes
- Loose or rotting materials
- Dampness and deterioration
- Peeling Paint
- Ventilation/windows
- Infestation
- Sanitation and trash
- Cleanability
- Clothesdryer
- Space heater

Codes for Housing

- Building Construction – International Building Code
- Residential Construction – International Residential Code
- Rehab–International Existing Building Code
- Electrical–International Code Council Electrical Code
- Fire–International Fire Code and National Fire Protection Association
- Ventilation–International Mechanical Code
- Plumbing–International Plumbing Code
- Sewage–International Prive Sewage Disposal Code
- All Buildings–International Property Maintenance Code

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These are the nation's model codes as adopted by the International Code Council (ICC).¹¹ The IPMC is the most important one because it applies to all buildings. When a state or community adopts a model code, they often modify it—adding, deleting or changing the requirements.

International Property Maintenance Code (IPMC)

- **Adopted in**
 - More than 550 communities
 - Two states—New York and Virginia
 - Several states including Georgia and Oklahoma recommend it for locals and codes.
- **Applicability**
 - Existing buildings
 - Rental and owner-occupied homes
 - Local variations
- **Code official enforces**

Landlord-Tenant Laws

Landlord-Tenant laws are also an important part of healthy homes since rental property is generally in worse condition. Most states mandate that the lease require the landlord to comply with the housing code.

- **Rights and responsibilities**
- **Common requirements**
 - Certificate of occupancy
 - Duty to pay rent
 - Withholding rent to make repairs
 - Retaliation
- **Eviction and enforcement**

Federal Health Priorities: Healthy People 2020 Objectives

In addition to familiarity with codes, you should also be familiar with the federal health priorities as established by the Department of Health and Human Services. The federal government through the Department of Health and Human Services set long-term objectives for the nation's health. The program is called Healthy People 2020.¹² The measurable objectives set a target to achieve by 2020. The objectives listed below are those that directly relate to healthy homes.

- **Reduce blood lead levels in children**
 - Eliminate elevated blood lead levels in children
 - Reduce the mean blood lead levels in children
- **Reduce pesticide exposures that result in visits to a health care facility**
- **Reduce indoor allergen levels**
 - Reduce indoor allergen levels: cockroach
 - Reduce indoor allergen levels: mouse

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- **Increase the number of homes with an operating radon mitigation system for persons living in homes at risk for radon exposure**
- **Increase the percentage of new single family homes (SFH) constructed with radon-reducing features, especially in high-radon-potential areas**
- **Increase the proportion of persons living in pre-1978 housing that has been tested for the presence of lead-based paint or related hazards**
 - Increase the proportion of pre-1978 housing that has been tested for the presence of lead-based paint
 - Increase the proportion of pre-1978 housing that has been tested for the presence of paint-lead hazards
 - Increase the proportion of pre-1978 housing that has been tested for the levels of lead in dust
 - Increase the proportion of pre-1978 housing that has been tested for the presence of lead in soil
- **Reduce the number of U.S. homes that are found to have lead-based paint or related hazards**
 - Reduce the number of U.S. homes that are found to have lead-based paint
 - Reduce the number of U.S. homes that have paint-lead hazards
 - Reduce the number of U.S. homes that have dust-lead hazards
 - Reduce the number of U.S. homes that have soil-lead hazards
- **Reduce the proportion of occupied housing units that have moderate or severe physical problems**

Green Building Priorities

In February 2009, NCHH conducted a comparison of green building programs. NCHH considered the following major, national programs:

- Green Communities by Enterprise Community Partners
- Leadership in Energy and Environmental Design for Homes (LEED for Homes) by U.S. Green Building Council (USGBC)
- National Green Building Standard (ICC-700-2008) by the International Code Council (ICC) and National Association of Home Builders (NAHB)
- Energy Star with Indoor Air Package by U.S. Environmental Protection Agency (EPA)

These are the four national programs driving green building. NCHH compared the healthy homes aspects of each of the four programs.¹³ See the Summary of National Green Building Programs in your Reference section.

National Healthy Homes Training Center and Network

The National Healthy Homes Training Center & Network is funded by a grant from the U.S. Department of Housing & Urban Development with support from the U.S. Environmental Protection Agency. Brings together public health and housing practitioners to promote practical and cost-effective methods for making homes healthier.

- Serves as a forum for exchanging information on new research and best practices.
- Brings together public health and housing practitioners to promote practical and cost-effective methods for making homes healthier.

Essentials for Healthy Homes Practitioners



Purpose of this course:

- Provide training for public health and housing practitioners in the assessment and treatment of housing related health hazards, with a focus on practical and cost-effective methods.
- Promote cross training of public health and housing practitioners.
- Create a forum for the exchange of practical guidance about healthy housing strategies among federal, state, tribal and local agency staff.
- Develop a mechanism for the ongoing introduction of new research findings into public health training and practice.
- Identify and optimize opportunities for networking, collaboration and partnerships.

Course Outline

- Overview
- Start with People
- House as a System
- Keep it:
 - 1. Dry
 - 2. Clean
 - 3. Pest-Free
 - 4. Ventilated
 - 5. Safe
 - 6. Contaminant-Free
 - 7. Maintained
- Making it Work

Key Messages

- There is a link between housing and health.
- Certain groups are at greater risk for adverse health effects.
- There are basic public health and housing principles that can help us understand the link between housing and health.
- The Healthy Homes movement is a holistic approach to promote health through better housing.
- Codes and regulations are tools that can help you achieve healthier housing in your community.

Learning Objectives

- Describe four housing conditions and their associated health problems.
- Identify three populations at higher risk for housing related disease and injury.
- Identify three types of codes used to enforce remediation of housing-related hazards.