Health Begins at Home

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Housing Conditions Have an Important Impact on Public Health

Most people spend an average of 50% or more of every day inside their homes.
“The connection between health and the dwelling of the population is one of the most important that exists”.

Florence Nightingale

More Than 6 Million Substandard Housing Units Nationwide

- Residents at increased risk for exposure to lead, carbon monoxide, mold, cockroaches, dust mites, pesticide residues, tobacco smoke, combustion gases, and radon, rat bites, and falls
More Than 6 Million Substandard Housing Units Nationwide

- Children in these units are more likely to have elevated blood lead levels and to have ever been diagnosed with asthma
- Children, the elderly, African Americans, American Indians, and the poorest Americans are at greatest risk for fire-related injuries and deaths
Substandard Housing Units (continued)

- Critical need to prevent the public health problems that stem from these units
- Healthy People 2020 goal calls for a ~ 20% reduction in housing with moderate or severe physical problems
Health Care and Productivity Costs for Illnesses and Injuries

- Asthma: $18.3 billion a year
- Burns: $7.5 billion a year
- Childhood Lead Poisoning: $2,552 for each 1 μg/dL increase in blood lead level
- Falls (in 2000): $81 billion in lifetime costs
- Depression: $83.1 billion in lifetime costs
The *Call to Action* describes the steps people can take now to protect themselves from disease, disability, and injury that may result from health hazards in their homes.
1. Take actions to ensure that all Americans have access to healthy, safe, and affordable housing

Housing design and construction can hamper ease of mobility within a home and interfere with reasonable access to important features of the house, such as toilets and shelving in cupboards and closets for elders and people with disability.

17 million U.S. families spend more than 50% of their income on housing and may not be able to purchase health care, medicines or adequate food.

Living in neighborhoods with concentrated poverty level increases emotional stress and exposure to intentional injury.
2. Increase public awareness by creating a national dialogue on healthy housing and by promoting health literacy about housing

A national dialogue will improve the public’s understanding of the relationship between housing and health.

Increasing health literacy should be done in many contexts and settings, from family members and academics to the many professionals and individual stakeholders involved in the housing industry.

Greater knowledge about key health issues will give people the capacity to make informed, evidence-based, and compassionate housing decisions.
3. Invest in research that increases our understanding of the long-term economic benefits of healthy housing

Identify additional housing factors that can promote and protect people’s health, develop an understanding of the causal sequences of events leading to specific injuries and describe the physiologic pathway that links the housing environment and mental health.

Further research is needed to determine the relative benefits and costs of modern construction practices such as increasing stair width, increasing traction on floor surfaces, improving home lighting, and installing handrails.

In addition, the potential for cost savings and other benefits that result in improvements in both residents’ health and cost-savings through energy conservation should also be investigated.
### Interior Biological Agents
- Multifaceted tailored asthma interventions
- Integrated pest management (allergen reduction)
- Moisture intrusion elimination

### Interior Chemical Agents
- Radon air mitigation through active subslab depressurization
- Integrated pest management (pesticide reduction)
- Smoking bans
- Lead hazard control

### Drinking Water & Waste Treatment
- Voluntary drinking & wastewater treatment standards for small systems & private wells
- Training for small system personnel
- Guidelines for immunocompromised individuals

### Structural Deficiencies
- Installation of working smoke/CO alarms
- Isolation 4-sided pool fencing
- Preset safe temperature hot water heaters
- Air condition during heat waves

### Community-level Housing Interventions
- Rental vouchers (Housing Choice Voucher Program)
## Needs More Field Evaluation

### Interior Biological Agents

- Dehumidification
- General & local exhaust ventilation (kitchens & baths)
- Air cleaners (to reduce asthma)
- Dry steam cleaning
- Vacuuming

### Interior Chemical Agents

- Radon mitigation in drinking water
- Portable HEPA air cleaners to reduce particulate
- Attached garage sealing to limit VOC intrusion
- Particulate control by envelope sealing

### Structural Deficiencies

- Home safety education on stair gates, window locks and window guards, and match & lighter storage with cabinet locks
- Fall prevention by handrails, grab bars, and improved lighting

### Drinking and Waste Water Treatment

- UV and other filtration point of use systems
- DNA to track pathogen sources
- Location of privies and failed drinking water and wastewater systems
4. Translate Healthy Homes Research into Practice and Policy

• Develop and implement mechanisms for updating recommendations and communicating them to housing agencies and professionals involved in constructing and maintaining homes.

• Develop and implement mechanisms to accelerate the transfer of research findings into home-based health care and social services, housing programs, and other service delivery systems.

• Use evidence-based interventions to develop or support a program to certify houses and homes-related consumer products as healthy and safe.

• Communicate the research findings.
CDC’s Healthy Homes Program

CDC’s Healthy Homes Program is a coordinated, comprehensive, and holistic approach to preventing diseases and injuries that result from housing-related hazards and deficiencies.
Vision: All people are healthier because they live in healthy homes

Mission: Homes are healthier because CDC advances knowledge, and ensures that the resources, partnerships, programs, and policies necessary to create and sustain healthy homes.
Healthy Homes Program Activities

- Funding State Health Departments
- Developing Guidance Documents
- Providing Training
- Improving Surveillance
- Conducting Research
Healthy Homes & Lead Poisoning Surveillance System (HHLPSS)

- Web Based – state and locals access same database
- Virtually unlimited capacity
- Address verification and geo-coding
- Improved/faster reporting
- Improved more detail methods for tracking non-paint sources
- More drop down list with fewer free text fields
- Ability to import HL7 ELRs
- Ability to track healthy housing variables
HHLPSS Timeline

• Developed in-house by Emergint Technologies Inc
• Beta testing was completed from September 2009 through January 2010
• Deployment to 18 state and local health departments
• Currently being tested with production expected over the next 2 months.
Green Housing Study

- Optimized heating, ventilation and air conditioning (HVAC) system
- Recycled building materials
- Energy efficient appliances
- Low/no volatile organic compound (VOC) carpets and paint
- Integrated Pest Management
- Improved Insulation
**Objective:**
To quantify levels of mold, allergens, pesticides and volatile organic compounds (VOCs) in Green and conventional housing.

**Study Design:**
Longitudinal, multiple assessments

**Locations:**
13 cities across the country
(n = 64 homes in each city)
Thank you!

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.