

## HEALTH AND HOUSING HAZARDS MATRIX

Housing & Health Hazards and Sources	Health Effects	Data & Statistics	Related to Healthy Homes Principles?	Related to Healthy People 2010 Objectives?	Related to International Property Maintenance Codes (IPMC)?
<p style="text-align: center;"><b>Allergens &amp; Asthma</b></p> <p>Dust mites, roaches, mouse dander, environmental tobacco smoke, mold etc are the most common household allergens which could develop and/or trigger asthma attacks.</p>	<p>Allergens can develop asthma and/or trigger asthma attacks.</p> <p>Asthma is the second most prevalent chronic condition among children and the leading cause of school absences from a chronic illness among children aged 5-17 years.</p>	<p>In 2007, the National Kids Count Program, ranked OK highest in the nation along with OH, CT, KY, AL for percent of children with asthma problems.</p> <p>In 2008 Tulsa, OK was ranked the second worst city in the U.S. for those suffering from asthma by the Asthma and Allergy Foundation of America (AAFA).</p> <p>In 2007, annual medical expenditures due to asthma medical care totaled \$14.7 billion and lost productivity accounted for \$5 billion. Overall, asthma accounts for approximately 3% of total health care costs.</p>	<p>Keep it dry</p> <p>Keep it clean</p> <p>Keep it pest free</p> <p>Keep it contaminant free</p>	<p><b>HP 2010 Obj. 8-16:</b> Reduce indoor allergen levels.</p> <p><b>HP 2010 Obj. 24-1:</b> Reduce asthma deaths.</p> <p><b>HP 2010 Obj. 24-2:</b> Reduce hospitalizations for asthma.</p> <p><b>HP 2010 Obj. 24-3:</b> Reduce hospital emergency department visits for asthma.</p> <p><b>HP 2010 Obj. 24-4:</b> Reduce activity limitations among persons with asthma.</p> <p><b>HP 2010 Obj. 24-5:</b> Reduce the number of school or work days missed by persons with asthma due to asthma.</p>	<p><b>IPMC 305.1:</b> General</p> <p><b>IPMC 302.1:</b> Sanitation</p> <p><b>IPMC 307.1:</b> Accumulation of rubbish of garbage</p> <p><b>IPMC 503.4:</b> Floor Surface</p> <p><b>IPMC 308.1:</b> Infestation</p> <p><b>IPMC 302.5:</b> Rodent harborage</p> <p><b>IPMC 304.14:</b> Insect screens</p> <p><b>IPMC 308.2:</b> Owner</p> <p><b>IPMC 308.3:</b> Single Occupant</p> <p><b>IPMC 308.4:</b> Multiple Occupancy</p> <p><b>IPMC 308.5:</b> Occupant</p>
<p style="text-align: center;"><b>Lead-Based Paint Hazards</b></p> <p>Residential lead-based paint and lead contaminated dust and soil found in pre-1978 homes are the most common sources. According to the findings of the National Survey of Lead and Allergens in Housing (NSLAH, 2001), there were 4.8 million U.S. homes with household incomes under \$30,000 and one or more children under age six. Of these homes, an estimated 1.6 million (34%) have significant lead-based paint hazards. Thus, one in three homes with young children has significant lead-based paint hazards.</p>	<p>Developmental problems lower I.Q., behavioral problems, attention deficit disorder, learning problems, language delay, anemia, damage to kidneys and nervous system.</p> <p>Exposure in pregnant females could lead to adverse health effects in their unborn children. such as pre-term birth, decreased gestational maturity, lower birth weight, and reduced postnatal growth.</p>	<p>The CDC estimates approximately 250,000 U.S. children under age six with elevated blood lead levels (EBLL) <math>\geq 10 \mu\text{g} / \text{dL}</math></p> <p>According to the latest National Health and Nutrition Examination Survey (NHANES) 1999-2004, the EBLL prevalence among U.S. children is 1.4%. In OK the EBLL prevalence was 0.5% in 2009.</p>	<p>Keep it dry</p> <p>Keep it clean</p> <p>Keep it contaminant free</p> <p>Keep it maintained.</p>	<p><b>HP 2010 Obj. 8-1:</b> Reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for harmful air pollutants.</p> <p><b>HP 2010 Obj. 8-11:</b> Eliminate elevated blood lead levels in children.</p> <p><b>HP 2010 Obj. 8-22:</b> Increase the proportion of persons living in pre-1950s housing that has been tested for the presence of lead-based paint.</p>	<p><b>IPMC 304.2:</b> Protective treatment</p> <p><b>IPMC 304.6:</b> Exterior walls</p> <p><b>IPMC 305.3:</b> Interior surfaces</p>
<p style="text-align: center;"><b>Carbon Monoxide (CO)</b></p> <p>CO is produced by the incomplete combustion of gas, oil or wood. Any malfunctioning fuel burning appliance is a source of CO.</p> <p>Car exhaust is another source of CO exposure.</p>	<p>CO can cause;</p> <ul style="list-style-type: none"> <li>- Fatigue in healthy people and chest pain in people with heart disease at low concentrations.</li> <li>- Headaches, dizziness, confusion, nausea at higher concentrations.</li> <li>- Death at very high conc.</li> </ul>	<p>Every year, CO poisoning accounts for more than 500 deaths and approximately 15,000 hospital ER visits in the U.S. In OK between 1994 and 2003 there were 291 CO related deaths (29 deaths every year).</p>	<p>Keep it ventilated</p> <p>Keep it safe</p> <p>Keep it maintained</p>	<p><b>HP 2010 Obj. 8-1:</b> Reduce the proportion of persons exposed to air that does meet the U.S. Environmental Protection Agency's health based standards for harmful air pollutants.</p>	<p><b>IPMC 603.2:</b> Removal of combustion products</p> <p><b>IPMC 505.4:</b> Water heating facilities</p> <p><b>IPMC 603.2:</b> Combustion air</p>

**Un-intentional Injury Hazards (Falls, poisonings, suffocation drowning, fires and burns etc.)**

Most of the unintentional injuries tend to occur at home and are completely preventable.

According to the Home Safety Council (HSC), the home is the second most common location of unintentional fatal injuries and was ranked below only motor vehicle deaths. Approximately 20% of all injury deaths occur inside the home. Unsecure stairways and other walking surfaces, windows without locks or safety guards, unsecure handrails, electrical system hazards, insufficient lighting, malfunctioning smoke and carbon monoxide detectors, improper storage/labeling of hazardous household products.

Leading cause of death for persons in the age group of 1-44 years.

Leading cause of years of potential life lost (YPLL) before age 65 years.

In 2006, falls were the leading cause of deaths in individuals over age 65 in the U.S. and OK. Poisoning was the second and falls were the third leading cause of all unintentional injury deaths for all ages in the U.S. and OK. Unintentional injuries were the leading cause of years of YPLL in individuals under age 65 in the U.S. and OK.

According to the CDC's Web-based Injury Statistics Query and Reporting System (WISQARS) data from 2006:

In U.S., 179,065 people died from all types of injuries with unintentional injuries accounting for 121,599 (67.9%) deaths (Age-Adjusted Rate: 39.8 deaths per 100,000 population).

In OK, 2,864 people died from an injury with unintentional injuries accounting for 2,039 (71.2%) deaths (Age-Adjusted Rate: 56.1 deaths per 100,000 population).

Keep it safe

Keep it maintained

**HP 2010 Obj. 15-13:**  
Reduce deaths caused by unintentional injuries.

**HP 2010 Obj. 15-14:**  
Reduce emergency department visits for nonfatal unintentional injuries.

**HP 2010 Obj. 15-25:**  
Reduce residential fire deaths.

**HP 2010 Obj. 15-26:**  
Increase functioning residential smoke alarms.

**HP 2010 Obj. 15-27:**  
Reduce deaths from falls.

**HP 2010 Obj. 15-28:**  
Reduce hip fractures among older adults.

**HP 2010 Obj. 15-29:**  
Reduce drownings.

**IPMC 304.10:** Stairways, decks, porches and balconies  
**IPMC 304.13:** Window, skylight and door frames

**IPMC 304.18:** Building security  
**IPMC 304.18.2:** Windows

**IPMC 305.2:** Structural members  
**IPMC 305.4:** Stairs and walking surfaces

**IPMC 305.5:** Handrails and guards  
**IPMC 306.1:** General

**IPMC 402.2:** Common halls and stairways

**IPMC 604.2:** Service  
**IPMC 604.3:** Electrical system hazards

**IPMC 605.2:** Receptacles  
**IPMC 605.3:** Lighting fixtures

**Radon**

The main sources of radon inside a home are the soil and the water supply. Radon from soil is the main cause of radon problems and can get inside through cracks in solid floors, construction joints, cracks in walls, gaps in suspended floors, gaps around service pipes, and cavities inside walls.

Radon is the leading cause of lung cancer among non-smokers and the second leading cause of lung cancer in the U.S. responsible for 21,000 deaths every year.

State or national level radon mortality data is not available. EPA recommends homes be fixed if the radon level is 4 pCi/L (pico Curies per Liter) or more.

In 2008, 13% of the total homes in OK that have tested indoor air for radon had levels > 4 pCi/L.

Keep it ventilated

Keep it contaminant free

Keep it maintained

**HP 2010 Obj. 8-18:** Increase the proportion of persons who live in homes tested for radon concentrations.

**HP 2010 Obj. 8-19:**  
Increase the number of new homes constructed to be radon resistant.

**IPMC 304.2:** Protective treatment  
**IPMC 304.5:** Foundation walls  
**IPMC 304.6:** Exterior walls

**Environmental Tobacco Smoke (ETS) or Secondhand Smoke**

ETS is the combination of smoke;  
- given off by the burning end of a tobacco product and,  
- exhaled by the smoker.

ETS as a known human carcinogen. Children exposed to secondhand smoke are at an increased risk of sudden infant death syndrome (SIDS), ear infections, colds, pneumonia, bronchitis, and more severe asthma.

According to the EPA and the American Lung Association, every year approximately 53,800 Americans die from secondhand smoke.

In OK, 700 people die every year from secondhand smoke.

Keep it ventilated

Keep it contaminant free

**HP 2010 Obj. 27-9:**  
Reduce the proportion of children who are regularly exposed to tobacco smoke at home.

**HP 2010 Obj. 27-10:**  
Reduce the proportion of nonsmokers exposed to environmental tobacco smoke.

**IPMC 403.1:** Habitual spaces  
**IPMC 403.4:** Process ventilation

**Mold & Moisture**

Mold can enter through open doorways, windows, vents, and heating and air conditioning systems. Molds often grow in damp or wet areas. Uncontrolled humidity can also be a source.

Trigger asthma attacks. Also results in upper respiratory tract symptoms, coughing, wheezing, and hypersensitivity pneumonitis.

State or national level data on mold is not available

Keep it dry

Keep it ventilated

Keep it maintained

**HP 2010 Obj. 8-23:**  
Reduce the proportion of occupied housing units that have moderate or severe physical problems.

**IPMC 302.2:** Grading and drainage  
**IPMC 304.7:** Roofs and drainage  
**IPMC 304.6:** Exterior walls  
**IPMC 304.2:** Protective treatment