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Angel Campo used to live in a home damaged by water and then mold after Hurricane Katrina struck the Gulf Coast in 2005. Angel and her two siblings suffered asthma attacks and rashes while living in a FEMA trailer in Lafayette Parish, Louisiana. But now she and her family have a Habitat home in Slidell, Louisiana.

Although there is less research in the developing world linking housing and health, there is a growing body of evidence in the United States and Europe that adequate housing is essential to the prevention and treatment of diseases ranging from asthma to mental illness.

In the United States, perhaps the two most intensively studied connections between housing and health involve asthma and lead poisoning. Asthma sends almost 2 million people a year to hospital emergency rooms. Extensive research shows that the occurrence and severity of asthma attacks can be linked to pests, pet dander, dust, molds and excessive moisture inside the home, and housing instability or homelessness can result in missed medical visits and irregular treatment plans—the same problems faced by some of those who are coping with HIV and AIDS. Strides to control or eliminate lead paint hazards in housing have resulted in a successful reduction of lead levels in children's blood, but too many children are still exposed to dangerous levels of lead. Residential lead paint is banned in the United States but easily

Chapter 6

Asthma

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

24 The Forum, 2009: Volume 16, No. 2, Habitat for Humanity, November 2009. purchased in Asia and Africa.

Many Americans may be surprised to know that 84 percent of bedrooms in the United States have detectable levels of dust mite allergens that can contribute to both asthma and allergies. Older homes and those occupied by low-income residents are also much more likely to have detectable levels of mouse and cockroach allergens.

Dampness and mold in homes account for more than one in five cases of asthma in the United States at an annual cost of \$3.5 billion.²³ Still, even though we know the connection between these common household health risks and asthma, more research is needed to determine how best to deal with them, says Mary Jean Brown of the CDC's National Center for Healthy Housing.

The lack of scientific evidence of the effectiveness of commonly employed remedies—from expensive air filters to detergents and over-the-counter pesticides—may result in not just a waste of money, but also the continuing risk of an attack, she says.

The lack of decent, affordable housing is only exacerbating this problem in the United States. In 2008, the number of households spending more than 50 percent of their income on housing rose by one-third, or 16 percent, to 18.6 million, according to Harvard's Joint Center for Housing Studies. That's 44.2 million Americans who have few resources left over to make healthy food choices, heat their homes, purchase medicines and pay for health care.

Overcrowding and exposure to heat and cold are house-related causes of illness in many parts of the world. Cold houses are associated with an

increased risk of cardiovascular and respiratory diseases, along with psychological problems such as depression, studies show. "Irish research indicated that households enduring cold (or 'fuelpoor' households) were over three times as likely to report respiratory conditions and almost three times as likely to self-perceive ill health caused by cold housing," researcher Jonathan Healy wrote in a WHO report.

The crowded housing conditions that many people in developing countries face have been associated with the spread of tuberculosis, respiratory infections and even hepatitis B. In a study in New Zealand of meningococcal disease in children younger than 8, household crowding was identified as the key risk factor.

Improved housing conditions have also had an impact on a variety of chronic conditions that plague the poor in Eastern Europe.

Government and social workers in Slovakia recently discovered that infection rates in a Roma settlement in Svinia from hepatitis, respiratory infections and other chronic conditions were reduced substantially by repairing leaky roofs, installing new floors, building drainage channels, creating garbage collection points and performing other public health services in and outside of the dwellings.²⁴

Global health leaders are quickly coming to conclude, as the U.S. Surgeon General did in a 2009 report, that to improve the health of the world's most vulnerable residents, sustainable health practices should play an equally important role as bricks and mortar in reconstruction and building plans.



Tumar Ajiev has a new roof for the condominium he shares with his wife and daughters in Bishkek, Kyrgyzstan.

THE HEALTH-HOUSING CONNECTION

Kyrgyzstan: Safe from winter, snow, rain

For eight winters, Tumar Ajiev and his family of four went without heat in their tiny room on the ninth floor of a Soviet-era high rise in Bishkek, Kyrgyzstan, where the average January temperature is 24.8 degrees Fahrenheit (-4 degrees Celsius).

The old tar-paper roof began to leak, so when snow melted and the rains began, water poured into the family's room. "We moved the children's beds to wherever we could to get them out of the wet," Ajiev said. "There was wet, there was mold, and the children were often sick."

Because of damage to electrical wiring from the wetness, the electricity was sometimes shut off for as long as three days, meaning no food could be cooked. "When the children were small, it was very hard for my family," Tumar said.

The high-rise was built in 1980 as housing for workers of a local auto-parts factory. Each floor is the same: One toilet is shared among four families, and eight families share a kitchen. With the fall of the Soviet Union, Kyrgyzstan regained its independence in 1991, and state-owned assets such as the building were privatized.

The residents say that although they were happy to own their rooms—or condos, as they are called now—they had no money for heating or upkeep. They managed to restore the heating in 2003, but it wasn't until 2007—10 years after the leaks began—that the condo owners found Habitat for Humanity. By then, dampness and mold had penetrated much of a building that had aged way beyond its years.

Unable to afford the interest rate charged by commercial lenders, two residents agreed to mortgage their rooms for a Habitat loan to repair the roof, and all of the residents paid their share of the loan. Now, with a new zinc-coated roof, and after renovations to get rid of the water damage, the residents are looking ahead to a second loan to repair the elevators.