

# Environmental Health, 2012

Environmental health is a varied field that links environmental conditions with human health effects. Its scope is large and covers the management of bedbug infestations to the oversight of high-level radioactive waste. At its core, it strives to promote health and prevent or minimize exposures that may have adverse health effects. It encompasses the air we breathe, the food we eat, the water we drink, and the places where we live, play and work.<sup>1</sup>

Outdoor air and water quality are two major themes highlighted in Healthy People 2020.<sup>2</sup> Maine has the highest risk from radon of all the New England states, and one of the highest risks from radon of the states in the U.S.<sup>3</sup> 14.8% of Maine Households who have tested their air for radon report elevated rates. These numbers may be higher, however, since less than one of out three (29%) of households have tested their air for radon.<sup>4</sup> Exposure to radon is the second leading cause of lung cancer.

Maine's outdoor air quality is affected by pollution created in states south and west of us, affecting ozone and particulate matter in our air. While we cannot control these factors, we can raise awareness of the hazards these pollutants cause and alert Maine residents who may be vulnerable when these levels rise. The Maine Department of Environmental Protection monitors air quality via monitoring stations throughout the state. Monitoring stations in Androscoggin, Hancock, Kennebec and Penobscot counties provided data in 2001, 2006 and 2008, with decreases in the micrograms of particulate matter per cubic meters of air at all locations, ranging from 8.6 in Androscoggin to 4.8 in Hancock County in 2008.

Water quality issues in Maine include hazards such as disinfection by-products, arsenic and nitrates/nitrites,<sup>1</sup> as well as the addition of fluoride



to help prevent tooth decay. 49.7% of Maine households are served by public water systems, regulated and routinely tested by the Maine Drinking Water Program.<sup>3</sup> 92.8% of the people in these communities were served by community water systems that met all applicable health-based standards of the Safe Drinking Water Act, up from 61.6% in 2000. 50.3% of Maine households get their drinking water from private wells. Naturally occurring arsenic is a risk for wells in Maine, and regular testing can indicate the need for mitigation. 44% of households with private wells had ever tested their water for arsenic.

Additional major environmental risks at home and work for Mainers include carbon monoxide poisoning, of particular concern when power outages increase the use of generators, and lead poisoning, a particular concern in Maine due to the older average age of homes in the state. Unintentional non-fire related carbon-monoxide poisoning emergency department visits have remained steady over the past 10 years, with 128 such visits in 2009. The rate of children ages 0-71 months with an elevated blood lead test, among those screened, dropped from 1.5% in 2003 to 0.8% in 2010.

Environmental Health measures chosen for the State Health Assessment include:<sup>5</sup>

- Average exposure to particulate matter of 2.5 microns in size or less
- Carbon monoxide poisoning emergency department visits
- Community water systems who receive a supply of drinking water that meets the regulations of the Safe Drinking Water Act
- Children with elevated blood lead levels
- Fluoridated water
- Homes with elevated radon
- Homes with private wells tested for arsenic

Because our environment affects many health conditions, additional measures related to environmental health can be found in many sections of the State Health Assessment, including Cardiovascular Health, Cancer, Infectious Disease, Maternal and Child Health, Oral Health, and Respiratory Health.

While many environmental health hazards affect all Mainers, specific characteristics of where people live, work, go to school, and play may create disparities. Childhood lead poisoning rates are of a particular concern in Auburn/Lewiston, Bangor, Biddeford/Saco, Portland/Westbrook and Sanford<sup>6</sup> and can disproportionately affect those in older rental units, those with less income (evidenced

by higher rates for children on MaineCare, and Mainers who are foreign-born, in particular Somali and Somali Bantu populations in the Lewiston/Auburn area<sup>1</sup>). While the occurrence of arsenic in private wells may not be linked to particular socio-economic characteristics, people with incomes above \$50,000 and those who have graduated from college or technical school are more likely to have tested for arsenic, which allows them to know whether they need to treat their water.

Healthy Maine 2020 also has objectives related to environmental health, including:<sup>1</sup>

- Particulate matter in the air
- Number of days the Air Quality Index (AQI) exceeds 100
- Carbon monoxide poisoning emergency department visits per 100,000 (2009)
- Persons served by community water systems who receive a supply of drinking water that meets the regulations of the Safe Drinking Water Act
- Children with elevated blood lead levels
- Fluoridated water
- Homes with private wells tested for arsenic
- Homes with elevated radon
- Number of homes with an operating radon mitigation system for persons living in homes at risk for radon exposure

<sup>1</sup> Maine Center for Disease Control and Prevention. Healthy Maine 2020. Available from: <http://www.maine.gov/dhhs/mecdc/healthy-maine/index.shtml> (accessed 3/21/2013).

<sup>2</sup> Healthy People 2020, Environmental Health, Available from: <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=12> (accessed 8/26/2013)

<sup>3</sup> US Environmental Protection Agency, National Residential Radon Survey, 1992

<sup>4</sup> 2010 Maine Behavioral Risk Factor Surveillance System results, Available from: [https://data.mainepublichealth.gov/brfss/environmental\\_health](https://data.mainepublichealth.gov/brfss/environmental_health) (accessed 9/20/2013)

<sup>5</sup> Maine Center for Disease Control and Prevention. State Health Assessment – 2012. Available from <http://www.maine.gov/dhhs/mecdc/phdata/sha/index.shtml> (accessed 8/21/2013).

<sup>6</sup> Maine Tracking Network, Public Data Portal, Available from: <https://data.mainepublichealth.gov/tracking/lead-content> (accessed 8/26/2013)