Environmental health addresses the health-related aspects of the natural environment and the built environment. The environment includes physical, chemical, and biological factors that are external to us – air, water, food, chemicals, radiation, animals, insects. Certain populations, such as children, pregnant women, and elderly people, are more vulnerable to environmental hazards. Environmental health is a continuously evolving field of study. Much environmental data available is hazard data, which is difficult to link to health outcomes. Another challenge is to understand how chemicals interact and affect human health.

**Key facts about Environmental Health**

There is growing concern over unregulated sources of air emissions, such as motor vehicles and other mobile sources. Smoking bans in indoor public places have decreased secondhand smoke exposure, but exposure in homes and cars is still a concern. Nitrates in water are a continuing concern in private wells in certain parts of the county. A decreasing percentage of children who are tested have elevated blood lead.

**Diseases transmitted from insects to humans**
- West Nile virus: four cases were reported in Dakota County residents from 2011 to 2015.
- Lyme disease: 87 confirmed cases were reported in Dakota County residents in 2015.

**Quality of drinking water**
- Most Dakota County residents receive their drinking water from public systems (21 community and 115 non-community systems), which are highly regulated and tested regularly.
- About 7,500 households in Dakota County rely on drinking water from private wells.
- The “Targeted Townships” Project tested 1,384 private wells in the city of Hastings and 11 rural cities and townships in 2013 and 2014. The study found that 27 percent of the wells exceeded the standard for nitrate (10 mg/L).
- None of the public water systems in Dakota County exceeded the standard for nitrate in 2014.

**Food/waterborne illnesses**
- Giardiasis is the most common waterborne illness. In 2015, there were 23 cases reported in Dakota County residents. The rate generally decreased from 2006 to 2015.
- Each year an estimated one in six U.S. residents gets sick, 128,000 are hospitalized, and 3,000 die of foodborne illness.
- From 2011-2015, there were 20 confirmed foodborne outbreaks in Dakota County, resulting in 73 cases of illness.
- In 2015, 166 cases of foodborne illness were reported in Dakota County residents. Many mild cases are not detected and therefore not reported and not all foodborne illnesses are reportable.
Outdoor air

- Emissions and concentrations of key pollutants, especially fine particles and ozone, have decreased in Minnesota, according to the Minnesota Pollution Control Agency; however, current levels of air pollution still have health impacts. In the five-year period 2010-2014, there were seven air pollution alert days in Dakota County.
- In 2008, 41 percent of the most common air pollutants in Dakota County came from mobile sources, such as motor vehicles; seven percent from point sources, such as industrial plants; and 52 percent from non-point sources, such as gas stations, dry cleaners and residential burning.
- Of the 19 Dakota County lakes in which fish were tested for mercury or the perfluorocarbon PFOS in 2016, all have some restrictions for children under 15 and pregnant women, and 16 have restrictions for the general population.

Indoor air

- The average radon level measured by the reusable “E-Perm” test kits distributed by Dakota County from 2011 to 2015 was above the level at which action is recommended (4.0 pCi/L).
- Mold: Dakota County Public Health received 41 complaints due to mold in 2015.
- Asthma: 13 percent of Dakota County 5th graders, 18 percent of 8th graders, and 19 percent of 9th and 11th graders reported in 2016 that they had ever been told they had asthma. In 2014, 13 percent of Dakota County adults (25 and older) reported that they had asthma.
- Secondhand smoke: In 2014, six percent of Dakota County adults reported exposure in a car in the past week and four percent said someone smokes regularly in their home. Twelve percent of Dakota County 5th graders reported riding in a car one or more days in the past seven days with someone who was smoking and 21 percent reported being in the same room as someone who was smoking cigarettes (2016).

Lead

- Approximately 39 percent of housing units in Dakota County were built before 1980. Lead paint was banned in housing in 1978. Lead-based paint is the greatest source of exposure for children under age six.
- Twenty-one percent of Dakota County children under age six were tested for blood lead levels in 2015, an increase from 2004. The percent of tested children with elevated blood lead levels (5 micrograms/deciliter or greater) decreased from nearly twelve percent in 2009 to less than one percent in 2015.

About this Community Health Profile

For more information about the Dakota County community health assessment, contact: Melanie Countryman, Epidemiologist (melanie.countryman@co.dakota.mn.us or 651-554-6131).

For more information:
- Centers for Disease Control and Prevention www.cdc.gov
- Minnesota Department of Health www.health.state.mn.us
- Minnesota Pollution Control Agency www.pca.state.mn.us
- U.S. Environmental Protection Agency www.epa.gov

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