

*Healthiest Wisconsin 2010* Health Priority:  
**Environmental and Occupational Health Hazards**  
**Final Review: Executive Summary**

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Wisconsin Public Health Council  
State Health Plan Committee

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# **Progress Report: Healthiest Wisconsin 2010**

## **Health Priority: Environmental and Occupational Health**

### **Introduction**

The Institute of Medicine defined environmental health as the “freedom from illness or injury related to exposure to toxic agents and other environmental conditions that are potentially detrimental to human health” (Sattler, 2005). Our ability to assess and improve our environmental health is constantly improving. It has recently been understood that our environmental health can impact the incidence of many chronic diseases and mortality rates. Through surveillance of environmental health indicators, Wisconsin can identify concerns, determine how to minimize the risk, and allocate resources to maximize the health of all residents.

Healthiest Wisconsin 2010 focuses the human and fiscal resources on specific and prioritized objectives. The collaborative effort of public and private institutions maximizes the effectiveness of all interventions taken. Wisconsin’s state health plan also evaluates environmental justice which was defined by the EPA as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development implementation, and enforcement of environmental laws, regulations, and policies.” Throughout this report, environmental health disparities are related where data reveals their existence.

As outlined in the state health plan: Healthiest Wisconsin 2010, the environmental and occupational health priority has five overarching objectives:

- Decreasing illness from microbial or chemical contamination of food and drinking water;

- Reducing illness and death from respiratory disease;
- Reducing occupational injury, illness and death;
- Reducing illness and death related to chemical and biological contaminants in the home;
- Improving environmental health indicators for air, land and water in Wisconsin.

## **Results and Recommendations**

The following is an analysis of progress towards the above mentioned objectives. The process of reviewing and restructuring the Wisconsin State Health Plan every decade provides the opportunity to change the objectives or how they are measured. This analysis will evaluate whether the state's resources are being used appropriately to meet the health needs of residents. Recommendations are listed according to the five environmental and occupational health objectives. The rationale for each objective and recommendation can be found in Appendices 18-22.

**Objective 1:** By 2010, decrease the incidence of illness resulting from microbial or chemical contamination of food and drinking water.

**1a:** By 2010, reduce CDC risk factor violations for food and water by 25 %, based on a 2004 baseline.

**Performance as of 2007 (Food Violations):** Nearly all CDC risk factor violations increased from 2005 to 2007 for all restaurant classifications (Department of Public Health, 2008).

**Performance Status: No Progress** \*\*Note: An increase in CDC risk factor violations may be attributed to an increase in staff participation and inspections. In 2004 and 2005, 1% of CDC violations were related to unsafe food sources, 2% were related to inadequate cooking, 24% were related to improper hold techniques, 23% were related to cross contamination, 24% were related to personal hygiene, and 26% were related to other factors including consumer advisory awareness, demonstration of knowledge, and chemical storage.

**Performance as of 2008 (Water Violations):** According to the Department of Natural Resources, Wisconsin public water systems had fewer violations of the maximum contaminant levels (MCLs) in 2008 compared to 2004-- 3.70% and 3.90% respectively. **\*\*Note:** The number of annual violations may be indicative of the presence of natural disasters which cause flooding and increase the risk of contamination.

**Performance Status: Improved** **\*\*Note:** In 2008, Wisconsin public drinking water systems had 409 MCL violations; 353 violations were related to coliform bacteria, 17 violations were related to arsenic, 14 violations were related to nitrate, 10 violations were related to radium, 8 violations were related to gross alpha, 4 violations were related to DBP (dibutyl phthalate), 2 violations were related to synthetic organic, and 1 violation was related to 'other' organic. There has been a marked improvement in the number of radium violations--down to 11 from 31 in 2007.

**1b:** By 2010, the incidence of E.Coli 0157:H7 infection will be 3 per 100,000 population or less.

**Performance as of 2008:** 2.7 per 100,000

**Performance Status: Achieved** **\*\*Note:** Incidence of E.Coli in Wisconsin consistently decreased from 6.8 per 100,000 in 2000 to 2.7 per 100,000 in 2008. However, between the years 2003 and 2007, the incidence of E.Coli in Wisconsin was twice the average found among 10 Food Net participant states (see Appendix 1 for participating states).

**1c:** By 2010, the incidence of Salmonellosis will be 8 per 100,000 population or less.

**Performance as of 2008:** 13.2 per 100,000

**Performance Status: No Progress** **\*\*Note:** Salmonellosis incidence increased from 14.3 in 2000 to 18.2 in 2004 and then declined to 13.2 in 2008. Between the years 2003 and 2007, the incidence of Salmonellosis was slightly higher in Wisconsin compared to the average found among 10 Food Net participant states.

**1d:** By 2010, the incidence of Shigellosis will be 4 per 100,000 population or less.

**Performance as of 2008:** 9.6 per 100,000

**Performance Status: No Progress** **\*\*Note:** A spike in Shigellosis incidence was noted in 2007 related to an outbreak linked to Milwaukee child care settings. Compared to 10 Food Net participant states, Wisconsin had fewer cases in 2003 and 2006. However, Wisconsin had more cases than the Food Net participant average in 2004, 2005, and 2007.

**1e:** By 2010, the incidence of Campylobacteriosis will be 11 per 100,000

population or less.

**Performance as of 2008:** 22.5 per 100,000

**Performance Status: No Progress** \*\*Note: Incidence of *Camphylobacteriosis* remained consistent in Wisconsin between 2000 and 2008. The incidence in Wisconsin is nearly twice the average incidence found among the 10 Food Net participant states.

**1f:** By 2010, the incidence of Hepatitis A will be 1 per 100,000 population or less.

**Performance as of 2008:** 0.6% per 100,000

**Performance Status: Achieved**

In 2006, CDC vaccination guidelines changed to recommend all children aged 12-23 months receive the Hepatitis A vaccine (CDC: MMWR, 2006). Wisconsin has had significantly less cases of Hepatitis A compared to the national average.

**1g:** By 2010, increase the awareness of health threats from arsenic in private water supplies, mercury in sport fish, and methemoglobinemia, by 50 percent in each case, over a 2002 (or future) baseline.

**Performance as of 2008:** No statewide tracking of this objective for knowledge of nitrates and arsenic hazards.

**Performance Status:**

Seventy-eight percent of adults living in Wisconsin had 'heard something' about the issue of mercury contamination in fish, according to the 2004 BRFSS; however, increased awareness was associated with race (highest among Native Americans and whites) and increases in income or educational attainment (Wisconsin Department of Health and Family Services, Division of Public Health, 2005).

### **Objective 1: Recommendations**

1. In support of CDC recommendations, include *Listeria monocytogenes* among microbial pathogens tracked by Healthiest Wisconsin.
2. Consider the use of an electronic data tracking system (such as HealthSpace) within local health departments so that reporting of food safety violations is standardized.

3. Consider making the *Norwalk*-like virus, communicable disease a reportable condition to coincide with the anticipated CDC decision to make non-food borne incidence of *Norwalk*-like viruses nationally reportable.
4. Monitor the use of hormones within the agricultural setting.
5. Consistent with the recommendations made by the American Medical Association and the American Nurses' Association, adopt a policy to ban the use of non-therapeutic antibiotics in animals. Legislation such as this should include infection prevention measures such as overcrowding prevention and isolation procedures for ill animals.
6. Continue to promote awareness of arsenic, radium, nitrates, mercury, and PCB's in our waters and how these toxic agents pose risks to human populations.
7. Support legislation to restrict the use of Bisphenol A (BPA) in all food related materials such as cans and plastics.
8. Support the collection of pharmaceutical and agricultural wastes through initiatives such as the Clean Sweep Program.

**Objective 2:** By 2010, reduce the incidence of illness and death from respiratory diseases related to or aggravated by environmental and occupational exposures.

**2a:** By 2010, reduce the asthma hospitalization rate to 8.5 per 10,000 population from the 2000 baseline asthma hospitalization rate of 10.6 per 10,000.

**Performance as of 2007:** 8.9 per 10,000

**Performance Status: Improved (Statistically Significant)**

**\*\*Note:** Rate of asthma hospitalization increased to 11.4 in 2003; the significantly decreased rate does not indicate goal or a constantly lowering trend. With regard to sex, females are hospitalized approximately 20% more frequently than males. Based on 2000-2005 data, African Americans in Wisconsin are hospitalized at 5

times the rate of whites (36.6 compared to 7.1 per 10,000). Mortality among African Americans is 3.5 times higher than whites, (41.2 versus 12 deaths per million) (Wisconsin Asthma Coalition, 2009).

**2b:** Reduce public exposures to indoor radon in all buildings with radon concentrations >4 pCi/L in occupied spaces.

**Performance as of 2008:** No statewide tracking of this objective.

**Performance Status: No Progress.** \*\*Note: Between 5% to 10 % of the homes in Wisconsin have radon levels above the US EPA guideline of 4 pCi/L on the main floor for the year average (Wisconsin Department of Health Services, 2009). Currently all testing and remediation is done on a voluntary basis.

**2c:** By 2010, reduce occupational mesothelioma, illness and death by 30% below the 2000 baseline.

**Performance as of 2006(7):** The incidence of mesothelioma remained stable from 2000 (1.6 per 100,000) through 2006 (1.4 per 100,000). The incidence of mesothelioma death also remained stable from 2000 (1.0 per 100,000) through 2007 (1.0 per 100,000).

**Performance Status: No Progress** – Malignant Mesothelioma is caused by exposure to asbestos. Due to restrictions placed on the manufacture and use of asbestos in the United States and the predicted duration to illness after exposure, the incidence of mesothelioma is estimated to peak at 2010. Asbestos was first regulated under the Clean Air Act in 1970 and its use was further restricted by the Toxics Controls Substance Act.

**2d:** By 2010, reduce occupational pneumoconiosis illness and death by 30% below the 2000 baseline.

**Performance as of 2007:** Pneumoconiosis hospitalizations (primary diagnosis) remained stable from 2000 (0.2 per 100,000) through 2007 (0.3 per 100,000). Pneumoconiosis hospitalizations (any diagnosis of pneumoconiosis) also remained stable from 2000 (4.5 per 100,000) through 2007 (4.5 per 100,000). The rate of deaths caused by pneumoconiosis also remained stable from 2000 (0.4 per 100,000) through 2007 (0.5 per 100,000).

**Performance Status: No Progress.** Pneumoconiosis includes coal workers pneumoconiosis, asbestosis, silicosis, and unspecified pneumoconiosis. Wisconsin's incidence rate is below the national average for all types except silicosis. The hospitalization and death rate related to silicosis is more than twice the national average in 2000 and 2001; this is thought to be related to the many foundries and ceramics companies located in Wisconsin (Islam & Anderson, 2006).

## **Objective 2: Recommendations**

1. Support the collaboration between the Wisconsin Asthma Coalition and other public and private organizations who work toward the prevention and treatment of asthma.
2. Develop and implement legislation to standardize radon testing and mitigation. See Objective 4, point 3.
3. Due to the restriction of asbestos and the current indeterminate cause of background mesothelioma cases; tracking incidence of mesothelioma should not be a priority in Healthiest Wisconsin 2020.
4. Healthiest Wisconsin 2020 should focus on the type of pneumoconiosis which is a risk for Wisconsin residents, silicosis.

**Objective 3:** By December 31, 2010, the incidence of occupational injury, illness, and death will be reduced by 30 %.

**Performance as of 2007 (Occupational Death):** The death rate due to occupational injury remained stable from 2000 (1.9 per 100,000) through 2007 (1.8 per 100,000).

**Performance Status: No Progress:** No significant decrease of occupational death.

**Performance as of 2007 (Occupational Injury and Illness):** The rate of non-fatal occupational illness and injury steadily decreased from 2000 (9.0 per 100 full time workers) through 2007 (5.3 per 100 full time workers).

**Performance Status: Achieved:** Achieved a 41% reduction in non-fatal occupational illness and injury.

## **Objective 3: Recommendations**

1. Support legislation which offers tax-based incentives for companies to reduce injury and death as well as to promote the overall health of employees.
2. Develop objectives related to reduction in workplace fatalities, particularly within the industries of farms and construction.
3. According to the recommendation made by the American Medical Association, increase the number occupational health professionals from 63 to 100 per 100,000 residents.

**Objective 4:** By December 31, 2010, reduce by 50% the incidence of illness and death related to chemical and biological contaminants in the home.

**4a:** By 2010, rehabilitate 120,000 dwellings in Wisconsin with lead hazards present and occupied by children under six years old.

**Performance as of 2008:** No statewide tracking of this objective.

**Performance Status:**

The DHS Legacy of Lead Report (2008) published a housing analysis which concluded that there are 652,291 occupied housing units built before 1950 and approximately 120,000 housing units which are likely to cause lead poisoning. Rehabilitation permits are issued from local departments and not required to be reported to any state agency. The Wisconsin Lead Prevention Program estimates that every year 5,000 pre-1950 homes will be demolished and approximately 1,500 homes will be made lead safe through HUD grants and Community Development Block Grants. If progress continues at this rate it will be 40 years before all homes built before 1950 would be made lead safe or demolished.

**4b:** By 2010, all Wisconsin children enrolled in Medicaid will receive age appropriate blood lead tests.

**\*\*Note:** Children who live in Milwaukee or Racine must also be tested annually until age 6 with one additional test at age 18 months. Children living outside of Milwaukee or Racine must be tested at 12 and 24 months and between the ages of 3-5 if the test was not previously documented and they have a risk factor. Risk factors include: having lived in or visited a house built before 1950, having lived in or visited a house built before 1978 which has had recent renovation, if a sibling or close friend of the child has been diagnosed with an elevated blood lead level, or being enrolled in or eligible for the Medicaid or WIC program (Wisconsin Department of Health, 2000).

**Performance as of 2008:** The number of Medicaid/BadgerCare recipients at the age of 1 who received a blood lead test increased steadily from 2000 (45.3%) through 2008 (54.7%). The number of Medicaid/BadgerCare recipients at the age of 2 who received a blood lead test increased steadily from 2000 (36.9%) through 2008 (45.9%). Additionally, the percent of Medicaid/BadgerCare recipients aged 3-5 who had received no previous blood lead test decreased from 14.4% in 2000 to 11.4% in 2008.

**Performance Status: Improved.** Although the goal was not achieved, the percentage of children tested for blood lead and enrolled in Medicaid/BadgerCare steadily increased between 2000-2008.

**4c:** By the end of 2010, no Wisconsin children, age 6 or younger, will be newly identified with lead poisoning.

**Performance as of 2008:** The number of children diagnosed with lead poisoning decreased from 7.5% in 2000 to 1.7% in 2008. Wisconsin has had more than twice the United States' average of children identified with elevated blood lead levels for the years 2000-2006 (see Appendix 14).

**Performance Status: Improved.** \*\*Note: In 2008, 5% of African Americans tested positive for blood lead compared to the statewide average of 1.7%. However, using statistics from 1998-2002, the risk is demonstrated to be directly related to the age of housing. For instance, 31% of African-Americans living in pre-1950s housing were shown to have elevated blood lead compared to 6.7% of African Americans living in post-1950s housing (DHFS, 2004). Additionally, it must be remembered that nearly half of 1 and 2 year old children who receive Medicaid have not been tested (see objective 4b).

**4d:** By 2010, increase the capacity of local health departments to address environmental health issues in the home.

**Performance as of 2008:** No statewide tracking of this objective.

**Performance Status:** For the year 2006 and 2007, local health departments had 1.0 public health nurse and 0.3 environmental health professionals per 10,000 residents. According to the Association of State and Territorial Directors of Nursing (2008), the recommended ratio of public health nurses is 2 per 10,000. According to 2003 local health department expenditure data, Wisconsin ranks 46<sup>th</sup> in the nation by spending only \$79 per capita. (Boeke, Zahner, Booske, & Remington, 2008). Funding of local public health departments should be allocated according to need as determined by the county health rankings (Population Health Institute, 2008).

**4e:** Reduce public exposures to indoor radon in all buildings with radon

concentrations >4 pCi/L in occupied spaces.

**Performance as of 2008:** No statewide tracking of this objective.

**Performance Status: No Progress.** \*\*Note: Between 5% -10 % of the homes in Wisconsin have radon levels above the US EPA guideline of 4 pCi/L for the year average on the main floor (Wisconsin Department of Health Services, 2009). Currently all testing and remediation is done on a voluntary basis. See objective 2b.

**4f:** By 2010, there will be no unintentional carbon monoxide poisoning fatalities in Wisconsin.

**Performance as of 2007:** Unintentional carbon monoxide poisoning fatalities totaled 18 in 2000 and decreased to 17 in 2007.

**Performance Status: No Progress.** \*\*Note: Wisconsin state assembly bill 607 requires carbon monoxide detectors in buildings containing one or more dwelling units. The bill was recommended by the Committee of Consumer Protection on January 26, 2010 and has since been 'laid on the table' (State of Wisconsin, 2009a).

**4g:** By 2010, there will be no unwanted environmental tobacco smoke exposure in homes.

**Performance as of 2008:** Adults aged 18+ exposed to smoke in the past 30 days decreased from 28% in 2000 to 14% in 2008. The percent of middle and high school students living with a smoker decreased from 44% in 2000 to 37% in 2008. \*\*Note: A limitation of this study could be that smokers may be smoking outside instead of inside the home.

**Performance Status: Improved.** \*\*Note: Although there was an overall reduction of adults exposed to smoke in the last 30 days within all households, exposure among African Americans and American Indians was nearly double that of the Wisconsin average. The Wisconsin Youth Risk Behavior Survey (2009) revealed youth who have same-sex sexual relationships smoke at twice the rate of those who have opposite-sex sexual relationships. A statewide ban of smoking in public areas will go into effect in July, 2010; this legislation may indirectly impact smoking rates in homes (Wisconsin Legislative Council, 2009).

#### **Objective 4: Recommendations**

1. Support the childhood lead poisoning prevention recommendations made by the Public Health Council in 2007.

- a. Lower the public health investigation and intervention level to 10 mcg/dL from the current 20 mcg/dL or persistent levels of 15/mcg/dL, and fund the additional public health work load by budgeting an additional \$1 million for the program.
  - b. Enact legislation creating an annual fund of \$10 million for lead hazard control measures. In addition, we support the creation of a window replacement loan fund and a housing trust fund with a dedicated proportion of funds for lead hazard control as measures that would rehabilitate old housing. This would allow us to dramatically accelerate our efforts to prevent lead poisoning.
  - c. Enact legislation to allow local governments to establish fees/taxes specifically for the establishment of housing trust funds at the local level. These new fees/taxes must be exempt from any levy caps imposed by the state.
  - d. Require partners to develop and coordinate housing action plans that make lead hazard control a priority. Encourage lenders to make loans more attractive to property owners to correct lead paint hazards. Targeted loan programs should focus on housing built before 1950, which is where lead hazards are greatest.
2. Enact legislation that would require paint on property built before 1978 be tested for lead and be in an intact condition before property is rented or sold.
  3. In order to increase the percentage of at risk children tested for elevated blood levels, support a pay-for-performance incentive for physicians and include blood lead testing recommendations on immunization schedules.

4. The State of Wisconsin must pass a resolution supporting radon risk reduction activities to emphasize the importance of this environmental health concern.
  - a. The State of Wisconsin should require the seller to disclose knowledge of radon hazards to the buyer prior to the real estate sale.
  - b. The State of Wisconsin should require that all radon testing be reportable to the state so that continuous hazard assessment and reduction occur.
  - c. Licensed real estate professionals must be educated about radon issues and provide buyers with general information or specific radon test results.
  - d. Radon resistant new-construction standards, currently active in Madison, should be adopted statewide.
5. Funding of local public health departments should be increased and allocated according to need as determined by the county health rankings provided by the Population Health institutes (2008).
6. Support passage of the Wisconsin State Assembly Bill 607 requiring carbon monoxide detectors in buildings containing one or more dwelling units.
7. Promote targeted tobacco interventions consistent with the *Burden of Tobacco (2006.)*

**Objective 5:** By 2010, enhance the quality of life in Wisconsin through improvements in environmental health indicators for air, land, and water.

**Performance as of 2008:** No statewide tracking of this objective.

**Performance Status:** While there were a number of potential indicators, these were unfunded and untracked over the two year period. See Appendix 22 for a full list of short, middle, and long term outcome objectives.

## **Objective 5: Recommendations**

1. Improve the statewide capacity to track statewide measurements of environmental health concerns.

