

## INJURY AND VIOLENCE

**Note to readers and users of the *Healthiest Wisconsin 2020 Profiles*:** This *Healthiest Wisconsin 2020 Profile* is designed to provide background information leading to collective action and results. This profile is a product of the discussions of the Focus Area Strategic Team that was convened by the Wisconsin Department of Health Services during September 2009 through November 2010. The objectives from this Focus Area have been recognized as objectives of *Healthiest Wisconsin 2020*. (Refer to Section 5 of the *Healthiest Wisconsin 2020 plan*.) A complete list of *Healthiest Wisconsin 2020* Focus Area Strategic Team Members can be found in Appendix A of the plan.

### Definition

*Injury and violence* encompasses a broad array of topics. Unintentional injuries are often referred to as accidents despite being highly preventable. Examples include falls, drowning, motor vehicle crashes, suffocation and poisoning. Intentional injuries include those that were purposely inflicted, with the intent to injure or kill someone (including self). Intentional injuries often involve a violent act. Examples include homicide, child maltreatment, sexual assault, bullying and suicide. While not all violence results in physical injury, the use, and threat of use, of force or power may result in injury, death, psychological harm, maldevelopment, or deprivation eroding communities by reducing productivity, decreasing property values, and disrupting social services, to name a few (Dahlberg and Krug 2002, Centers for Disease Control 2008). Common prevention strategies exist across all causes and manners of injury that include but are not limited to environmental changes, education, and enforcement of policies, laws and standards.

The burden of injury differs across the life span. The effects of unintentional and intentional injury include costs related to care and treatment of injuries, but also loss of productivity (economic loss to the individual, family and workforce), years of potential life lost due to injury mortality, and the influence of injury and violence on chronic disease, physical and mental health.

### Importance of the Focus Area

Injuries are the leading cause of death among Wisconsin people age 1-44 years and are a significant cause of morbidity and mortality at all ages. Though many of these deaths due to injury are unintentional, the majority are also preventable.

Injuries and violence are not discriminatory; they occur in all ages, races, and socioeconomic classes. However, we do know that some groups are affected more severely. These disparities include:

### ***Homicide***

The homicide rate for Blacks/African Americans is 16 times higher than the homicide rate for Whites. For 15-24 year olds, the rate is 20 times higher. When considering geographic area, 69 percent of homicides in 2008 occurred in the southeast region of the state. While this is the most densely populated region of the state, it makes up only 37 percent of the population.

### ***Suicide***

The majority of suicides occur in Whites, but American Indians have the highest rate of death. Across all ages, the highest rate of suicide is in those aged 25-44 years. Men die from suicide four times more frequently than women. Regionally, rates of suicide are more evenly dispersed, with the highest rate in the northeastern region and the lowest rate in the southeastern region.

### ***Motor vehicle crashes***

The highest rate of motor vehicle crashes occurs among Wisconsin residents ages 15-24 years. American Indians have the highest rate of motor vehicle-related fatalities. The highest rate of motor vehicle fatalities occurs in the northern region, with the lowest rate in the southeastern region. Approximately 42 percent of Wisconsin motor vehicle crash fatalities are alcohol-related, one of the highest percentages in the nation. Wisconsin's estimated seatbelt use, around 75 percent, is one of the lowest in the nation.

### ***Poisoning***

Unintentional poisoning deaths have increased in Wisconsin over the past three years. The highest rate of death occurs among Wisconsin residents ages 25-44 years. Blacks/African Americans have a rate approximately twice that of Whites.

### ***Falls***

Wisconsin has one of the highest rates of fall-related fatality in the nation. Falls are the leading cause of injury-related death in the state. The bulk of deaths occur in those 65 years and older. Whites and those in the southeastern and northeastern regions of Wisconsin have the highest rates of fall-related death.

Deaths are only part of the problem. Injuries range from mild to severe, and the hospitalizations and emergency department visits required to treat these injuries cost the people of Wisconsin over \$1.7 billion annually (2007 data from Wisconsin Interactive Statistics on Health). For severe injuries, such as traumatic brain injury, costs can continue over a lifetime.

Injury prevention is extremely cost-effective. According to the National Highway Traffic Safety Administration, every dollar spent on bicycle helmets saves \$30 in medical and other costs. If Wisconsin's seatbelt use rate rose to 90 percent from the current rate of 75 percent, more than \$220 million would be saved (National Highway Traffic Safety Administration, 2009).

As with other public health issues, injury and violence are significantly influenced by the underlying determinants of health such as poverty; drug and alcohol use and abuse; mental and physical health problems; the physical environment; lack of social cohesiveness; lack of education and awareness; and social norms.

One examination of these underlying determinants and their effects on health outcomes is the Adverse Childhood Experiences Study (Centers for Disease Control and Prevention, 2008). The findings document that acts of violence not only have an immediate effect on those directly and indirectly exposed to violence, but may have life-long health consequences that greatly increase the emotional, physical and societal costs associated with violence. Immediate effects to abused children include physical injuries such as cuts, bruises, burns and broken bones. However, long-term maltreatment causes stress that can disrupt early brain development. Extreme stress can harm the development of the nervous and immune systems. As a result, children who are abused or neglected are at higher risk for health problems as adults. These problems include alcoholism, depression, drug abuse, eating disorders, obesity, high-risk sexual behaviors, smoking, suicide and certain chronic diseases (Centers for Disease Control and Prevention, 2010).

The underlying determinants of health also influence unintentional injuries. Education levels, poverty and the physical environment all play an important role in determining an individual's risk for injury. For example, "adults with low literacy struggle to understand basic beneficial information that readers take for granted, such as prescription dosages, warning labels on poisonous products and appliance maintenance steps. Unfortunately, even manufacturers' instructions for using smoke alarms are heavily text-based. If a person cannot read or comprehend safety information or a product or appliance's fire safety warnings, he or she is not being reached effectively and may not be taking the necessary actions to reduce the risk of fire at home" (Home Safety Council).

Further, there is a lack of data for some topic areas, such as child maltreatment and violence against women, due to under-reporting or inaccurate reporting. This represents a unique challenge to injury prevention professionals in measurement of both incidence and disparity.

### **Wisconsin Data Highlights**

- Five types of injuries cause the greatest number of deaths: falls, suicide, motor vehicle crashes, poisoning, and homicide.
- Data for 2008 show that falls have surpassed motor vehicle crashes as the leading cause of injury-related death (Wisconsin Interactive Statistics on Health).
- Veterans accounted for one out of every five suicides in Wisconsin between 2001 and 2006 (Wisconsin Interactive Statistics on Health).

- In 2006, Wisconsin had the second-highest fall-related fatality rate in the nation (Centers for Disease Control and Prevention).
- In 2008, approximately 40 percent of Wisconsin motor vehicle crash fatalities were alcohol-related. Wisconsin had the highest rate of drunken driving in the nation (Wisconsin Department of Transportation).
- In 2008, the homicide rate for Blacks/African Americans was 16 times higher than the homicide rate for Whites (Wisconsin Interactive Statistics on Health).
- Unintentional poisoning deaths have steadily increased since 1999 (Wisconsin Interactive Statistics on Health).
- In 2008, there were 56,934 allegations of child abuse reported to Wisconsin County Child Protective Services and the Bureau of Milwaukee Child Welfare; 15 percent, or 5,686 events, were substantiated as abuse (Department of Children and Families).
- It is estimated that one in six Wisconsin females has reported being sexually assaulted in her lifetime (Centers for Disease Control and Prevention).

### **Objective 1**

**By 2020, reduce the leading causes of injury (falls, motor vehicle crashes, suicide/self harm, poisoning and homicide/assault) and violence through policies and programs that create safe environments and practices.**

#### **Objective 1 Indicators**

- Morbidity from falls, assaults, motor vehicle crashes, poisoning and self-harm (hospitalization and emergency department data).
- Mortality from falls, homicide, suicide, motor vehicle crashes and poisoning (Vital Records and Wisconsin Violent Death Reporting System).
- Number of crash occupants (motor vehicle, trucks, motorcycles, bicycles, pedestrians with moving vehicle) (Crash Outcome Data Evaluation System [CODES]).

#### **Objective 1 Rationale**

Failure to address these leading causes of death and disability would be a failure to address the health needs of Wisconsin people and will cause a continued burden to the state financially.

### **Objective 2**

**By 2020, increase access to primary, secondary and tertiary prevention initiatives and services that address mental and physical injury and violence.**

### **Objective 2 Indicator**

Reimbursement for preventive services related to injury and violence (Medicaid/BadgerCare, medical service billing codes). (Indicator to be developed.)

### **Objective 2 Rationale**

Ensuring convenient and affordable preventive services will improve health equity and improve quality of life for all of Wisconsin's people but most importantly to those unequally affected by injury and violence.

## **Objective 3**

**By 2020, reduce disparities in injury and violence among populations of differing races, ethnicities, sexual identities and orientations, gender identities, and educational or economic status.**

### **Objective 3 Indicators**

- Disparity ratios in hospitalizations from falls, poisoning and self-harm.
- Mortality from homicide, suicide, and motor vehicle crashes (Hospital and emergency department data, Wisconsin Vital Records data, and Crash Outcome Data Evaluation System [CODES]).

### **Objective 3 Rationale**

To effectively address injury and violence in Wisconsin, all populations need to participate in identifying strategies that can be communicated and implemented effectively, and measured for impact within their specific communities. Failure to reduce injuries and violence in these communities will only widen the disparity gap.

## **Potential evidence- or science-based actions to move the focus area objectives forward over the decade**

When a public health approach is applied to the problems of injury and violence, in most cases these events can be prevented. Strategies for injury and violence prevention focus primarily on environmental and product design, human behavior, education, and legislative and regulatory requirements that support environmental and behavioral change.

- Compare prevention strategies related to policies and programs (Booske, et al., 2009).
  - Policies mandating bicycle helmet use
  - School-based programs to reduce violence and bullying
- Results of research on the effectiveness of injury and violence prevention programs (Harborview Injury Prevention and Research).
  - Firearm buy-back programs and firearm safety curricula
  - Youth violence interventions such as supervised after-school recreation and home visiting programs
  - Reducing tap water temperature

## References

Booske, B.C., Kindig, D.A., Nelson, H., Remington, P.L., *What Works? Policies and programs to Improve Wisconsin's Health*, 2009. University of Wisconsin Population Health Institute.

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS), 2006a. Retrieved on February 17, 2010 from <http://www.cdc.gov/injury/wisqars/index.html>

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, *How to Estimate Magnitude of IPV and/or SV at State and Local Levels Based on National Existing Data Sources: Case Illustration from Fulton County, Georgia*, unpublished data, 2006b

Centers for Disease Control and Prevention, Division of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion. *Adverse Childhood Experiences Study: Major Findings*, 2008 {cited 2010 Feb 26}. Retrieved February 26, 2010 from [www.cdc.gov/nccdphp/ace/findings.htm](http://www.cdc.gov/nccdphp/ace/findings.htm)

Centers for Disease Control and Prevention, "Violence Prevention at CDC" last updated March 5, 2008. Retrieved July 6, 2010 from <http://cdc.gov/ViolencePrevention/overview/>

Centers for Disease Control and Prevention, Fact Sheet "Understanding Child Maltreatment," 2010. Retrieved June 22, 2010 from <http://www.cdc.gov/violenceprevention/pdf/CM-FactSheet-a.pdf>

Dahlberg LL, Krug EG. Violence: a global public health problem. In: Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, editors. *World report on violence and health*. Geneva (Switzerland): World Health Organization; 2002. p. 1-21.

Harborview Injury Prevention and Research Center Best Practices website: Available at <http://depts.washington.edu/hiprc/practices/index.html>

Home Safety Council. "Adult Low Literacy is a Barrier to Public Safety" Retrieved July 6, 2010 from [http://www.homesafetycouncil.org/AboutUs/HSLP/hslp\\_literacy\\_w001.asp](http://www.homesafetycouncil.org/AboutUs/HSLP/hslp_literacy_w001.asp)

National Highway Traffic Safety Administration, National Center for Statistics and Analysis. Traffic Safety Facts: Research Note. *The Increase in Lives Saved, Injuries Prevented, and Cost Savings if Seat Belt Use Rose to at Least 90 Percent in All States*. Retrieved May 2009 from <http://www-nrd.nhtsa.dot.gov/Pubs/811140.PDF>

Wisconsin Department of Health Services, Division of Public Health, Bureau of Health Information and Policy. Wisconsin Interactive Statistics on Health (WISH) data query system, Injury Mortality Module. Retrieved February 17, 2010 from <http://dhs.wisconsin.gov/wish/>

Wisconsin Department of Children and Families. Wisconsin Child Abuse and Neglect Report, Calendar Year 2008. Retrieved June 29, 2010 from <http://www.dcf.wisconsin.gov/cwreview/reports/CAN.htm>