

Washington State
**Injury and Violence
Prevention Guide**

January 2013

Washington State Injury and Violence Prevention Guide

January 2013



Links to external resources are provided as a public service and do not imply endorsement by the Washington State Department of Health.

EXECUTIVE SUMMARY

Motor vehicle crashes, debilitating falls, poisonings, and violence against women occur on such a regular basis that people accept them as a tragic, yet unavoidable part of life. This is not true. Our biggest challenge in Washington State is to change the way our residents and communities view injuries. The vast majority of injuries are predictable and preventable. They are not accidents.

Injuries are the leading killer of children and adults aged 1–44 in this state and the United States.¹ Because injuries disproportionately affect the young, the life-years lost from them exceed those from other preventable causes of death. In 2010, over 3,800 Washington residents of all ages died from injuries. There were over 47,000 injury-related hospitalizations.

In 2011, the Washington State Department of Health (DOH) Injury and Violence Prevention Program received a five-year grant from the Centers for Disease Control and Prevention (CDC). The purpose of the grant is to help Washington State build capacity to develop and implement a comprehensive injury and violence prevention plan.

Washington State produced this plan as a guide for those working on prevention programs. This guide consists of seven injury and violence prevention chapters. It includes injury data, goals, and evidence-based, promising or experimental prevention strategies for each injury area. The data and strategies will be updated each year. Using this information for injury and violence prevention programs will make Washington a safer place for all. By working with community coalitions, public health educators, physicians, nurses, and other medical professionals, we hope to reduce the burden of injury and violence.

Table of Contents

Introduction and Background 1

Child Abuse and Neglect 7

Drowning..... 12

Older Adult Falls 17

Motor Vehicle-related Injuries 21

Drug Poisoning and Overdose..... 28

Suicide 35

Violence: Sexual Violence, Domestic Violence, and Bullying 40

Appendix A: Data Sources 46

Appendix B: E-code Matrices 49

Appendix C: Glossary of Terms and Acronyms..... 51

Appendix D: Haddon Matrix..... 57

Appendix E: Community Building Tools 58

Introduction and Background

What is Injury?

In public health practice, *injury* is damage or harm to the body resulting in impairment or destruction of health.² Examples of physical injury include broken bones, cuts, brain damage, spinal cord injury, poisoning, and burns. Physical injury results from harmful contact between people, objects, or substances in the environment.

Definition of Intentional and Unintentional Injury

Injuries are grouped into two categories identified by the manner in which the injury occurs: *unintentional* and *intentional*. The intent of injury can be important to determine target audiences, effective interventions, program planning, and evaluation. Injuries can also be grouped by the cause of the injury. Examples include motor vehicle crashes, drowning, or falling.

Unintentional injuries, historically referred to as *accidents*, are predictable. They can be stopped if preventive measures are taken. In 2009, unintentional injuries were the leading cause of death for Americans ages 1 to 44 years and the fifth leading cause of death overall. More than 177,000 Americans died in 2009 from unintentional injuries. These include, for example, injuries to children who fall from a bicycle, are involved in a motor vehicle crash, or are burned in a house fire.

Intentional injuries include all forms of violence, such as suicide, homicide, and assault. There are also preventive strategies for intentional injuries. Unintended injuries may be called intentional, even if causing injury was not the primary motivation. For example, if a caregiver is trying to quiet a child and the child is injured, the injury would be considered intentional.

Definition of Violence

Violence is the use of physical force with the intent to inflict injury or death upon oneself or another.³

Injury and Violence Prevention

An injury involves the interaction of several factors. Preventing an injury may require a mixture of countermeasures.

In the 1960's, Dr. William Haddon Jr., a physician and engineer, developed one of the earliest attempts to categorize injury prevention measures. Haddon listed ten general strategies that conceptualize prevention opportunities. In addition, he developed a matrix to classify injury by phases and factors. See Appendix D for a complete list.

How to Use The Washington State Injury and Violence Prevention Guide

This guide was developed as a “call to action” for Washington State. It includes information for planning, goal-setting, marketing, coalition building, and implementation of evidence-based strategies at state and local levels.

We envision this guide to be used by many audiences involved in injury and violence prevention. The target audience includes individuals and organizations concerned with preventing injuries and violence. This includes injury and violence prevention practitioners in governmental agencies, tribal governments, and nonprofit organizations in Washington State, and other community planners and coalitions, healthcare professionals, policymakers, governmental agencies, businesses, media, nonprofit organizations, and injury prevention providers.

This guide is designed to be used as a resource guide and a toolkit for communities and coalitions to implement recommended strategies. This guide is to be dynamic, usable, and a functional document that is updated regularly for ongoing use by all in Washington State.

The guide is intended to be used to increase awareness, build capacity, educate and inform, to increase skills and to empower Washington State residents to create a healthier and safer state.

Development of the Washington State Injury and Violence Prevention Guide

In August 2011, the Washington State Department of Health (DOH) Injury and Violence Prevention Program received a five-year grant from the Centers for Disease Control and Prevention (CDC). The grant's purpose is to help state public health agencies strengthen infrastructure related to prevention and control of injuries and violence, and to develop and strengthen injury surveillance programs. An Injury Community Planning Group (ICPG) was formed to meet our CDC grant requirements and to implement our strategic plan. The ICPG is structured around injury topic areas and serve as liaisons to their respective working groups. The ICPG assists the Department of Health (DOH) staff with developing program interventions and/or policy strategies for the priority areas they represent and with the implementation and evaluation plans.

Evidence-Based and Promising Strategies

In each of the chapters in the guide, we provide both evidence-based and promising prevention strategies. Here are our definitions of those terms:

Evidence-based strategies, often referred to as best practices, are those that have the strongest evidence for effectiveness. The effectiveness is based on well-designed research studies, in which the prevention activity achieved its intended goal.

Promising strategies are those where not enough well-designed research studies have been conducted to prove their effectiveness; however, they show promise.

Experimental strategies have a strong theoretical basis, but generally have not yet had research to show their effectiveness.

Washington State's Priority Injury Issues, 2011–2016

In September 2011, the Injury Community Planning Group (ICPG) identified the following four priorities:

- Drowning
- Falls Among Older Adults
- Motor Vehicle-related Injuries and Deaths
- Drug Poisoning and Overdose

Falls among older adults and motor vehicle-related injuries were selected because they are, respectively, the leading causes of injury-related hospitalization and trauma in the state. Fall-related hospitalization of older adults is also a key health indicator for Washington State. Drug poisoning was chosen because it is a leading cause of unintentional injury-related death and unintentional hospitalization. Unintentional drowning was selected because Washington rates are higher than the national rate and there are simple, feasible interventions.

The ICPG also identified other areas as significant:

- Child Abuse and Neglect
- Unintentional Childhood Injuries
- Suicide
- Violence
 - Sexual Violence
 - Domestic Violence
 - Bullying

Criteria and Guiding Principles

The following criteria and guiding principles were used to select priority injury areas.

- Is it a leading cause of death and hospitalization?
- Is there reason to believe it is significant, but under-represented in data?
- Is it a leading cause of years of potential life lost?
- Does it target the most effective interventions?
- Does it disproportionately affect a particular population?
- Does it have significant direct or indirect associated costs?

Motor vehicle-related injuries, falls among older adults, drug poisoning, and drowning, all disproportionately affect specific populations: older adults, young males, and males 35–54 years of age.

In addition to these criteria, the ICPG identified and used the following principles:

- Injuries are predictable, and preventable.⁴
- Strategies need to be evidence or data-based, proven and/or promising.
- Important components in the guide need to include:
 - Community involvement
 - Building capacity
 - Building partnerships and coalitions
 - Identifying and including disparities
 - Evaluation of strategies

Magnitude of the Problem: Injury and Violence in Washington State – a Public Health Priority

Injuries are the leading cause of death and disability for Washington State residents aged 1–44. In 2010, more than 3,800 Washington State residents died from injuries, and there were over 47,000 injury-related hospital stays. Such injuries have a huge impact on the lives of individuals, their families, and society. The physical and emotional effects of injuries can be extensive and wide-ranging. In the case of disabling injuries, the effects last a lifetime.

Injury death rates in Washington State rose by five percent between 1999 and 2010, after a two-decade period of decline. Unintentional poisonings and falls among those 65 years of age and older made up about 65 percent of the increase observed. Reductions occurred in drowning, motor vehicle-related deaths, homicide, traumatic brain injury, youth violence, and domestic violence. Emergency medical service responses and improved resuscitation and care at trauma centers have played a role in preventing some deaths. Despite these improvements, injury is still a leading cause of death for the residents in our state across the age spectrum. Because injuries and violence have their greatest impact on the young, their impact on years of potential life lost is significant.

There are many products, practices, and programs that can save lives, but many people have not heard about them, accepted them, or adopted them. Many people may not see the need for change, may not perceive themselves to be at risk, or may not have access to affordable, life saving safety products or programs.

Cost of Injuries

Premature death, disability, medical costs, and lost productivity affect the health and welfare of Americans. Intentional and unintentional injuries are the leading causes of death among persons aged 1–44 years and the fourth leading cause of death among persons of all ages.

Unlike other leading causes of death, deaths due to injuries affect the young and old alike. This results in life-years lost due to injuries exceeding those from other preventable causes.⁵

Injuries that occurred in 2000 will cost the U.S. health-care system over \$80 billion in medical care costs: \$1 billion for fatal injuries; \$33.7 billion for hospitalized injuries; and \$45.4 billion for non-hospitalized injuries.⁵

Injuries cause losses of productivity that may include lost wages and fringe benefits, and the lost ability to perform one's household responsibilities. Injuries that occurred in 2000 will cause an estimated \$326 billion in productivity losses.⁵

Leading Causes of Death

Washington State, 2011

Rank	Age <1	Age 1–4	Age 5–14	Age 15–24	Age 25–44	Age 45–64	Age 65+	Total
1	Congenital Anomalies 80	Cancer 6	Cancer 17	Suicide 121	Suicide 314	Cancer 3,296	Heart Disease 8,517	Cancer 11,928
2	Sudden Infant Death Syndrome 52	Homicide 5	Unintentional MV Traffic 11	Unintentional MV Traffic 99	Cancer 287	Heart Disease 1,660	Cancer 8,286	Heart Disease 10,409
3	Short Gestation & Low Birth Wt 35	Unintentional MV Traffic 5	Congenital Anomalies 7	Unintentional Poisoning 58	Unintentional Poisoning 274	Cirrhosis 485	Alzheimer's 3,095	Alzheimer's 3,133
4	Maternal Compl of Pregnancy 29	Congenital Anomalies 4	Homicide 7	Homicide 37	Heart Disease 203	Unintentional Poisoning 403	Stroke 2,216	COPD 3,081
5	Complications of placenta cord, membranes 21	Unintentional Fire and Burn 4	Suicide 7	Cancer 36	Unintentional MV Traffic 133	Suicide 397	COPD 2,656	Stroke 2,554
6	Resp Infections in perinatal period 17	Unintentional Suffocation 4	Unintentional Drowning 6	Heart Disease 19	Cirrhosis 88	COPD 394	Diabetes 1,189	Diabetes 1,603
7	Other Perinatal Conditions 17	Heart Disease 3	Undetermined Intent 4	Unintentional Drowning 15	Homicide 66	Diabetes 369	Unintentional Fall 691	Suicide 992
8	Unintentional Suffocation 11	Unintentional Drowning 3	Unintentional Fire and Burn 4	Undetermined Intent 12	Diabetes 43	Stroke 289	Pneumonia/Influenza 626	Unintentional Poisoning 837
9	Cardiovascular Disease 8	Pneumonia/Influenza 3	Unintentional Other Transp 3	Congenital Anomalies 8	Undetermined Intent 27	Unintentional MV Traffic 151	Parkinson's 586	Unintentional Fall 798
10	Necrotizing Enterocolitis 8	Other Perinatal Conditions 3	Unintentional Suffocation 2	Unintentional Fall 7	Pneumonia/Influenza 17	Pneumonia/Influenza 76	Renal Disease 420	Cirrhosis 767

Source: Death Certificate Data, 2011 Washington State Department of Health, Center for Health Statistics.

Special Population Groups: Health Disparities

The National Institutes of Health defines health disparities as “differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States.”

The most frequently noted disparities are those between ethnic, racial, and income groups. Health outcomes differ along other factors including; gender, geographic location, sexual orientation, physical ability or disability, age, and English speaking ability.⁶

Low-income populations and communities of color experience worse health outcomes across a broad

spectrum of illnesses, injuries, and treatment outcomes. According to some experts, “socioeconomic, racial, and ethnic disparities in health status are large, persistent, and ever increasing in the United States.”⁷

In Washington State, many causes of injury death are lowest for Asians and highest for American Indians and Alaska Natives. There are some exceptions. For example, African Americans have the lowest suicide rate and highest homicide rate. White, older females are at highest risk for fall-related hospitalizations.

Some racial and ethnic groups carry an unequal burden of poverty and lower levels of formal education. The 2010 U.S. Census shows that in Washington State, more American Indians, Alaska Natives, and Hispanics live in high poverty areas.

People with disabilities or special healthcare needs are at greater risk for injury than those without these conditions. Data from the 2004 Behavioral Risk Factor Surveillance System survey show that adults with disabilities are more likely to be physically or sexually abused, injured in a fall, or have a loaded firearm in their home. Data from the 2008 Washington State Healthy Youth Survey show that students in 10th grade with disabilities were more likely to be bullied, be in a physical fight, report symptoms of depression, attempt suicide, never or rarely wear a seatbelt, drive after drinking alcohol, fight, and carry weapons at school compared to youth without disabilities.⁸

The Role of Alcohol and Other Drugs

Alcohol misuse is now the leading risk factor for serious injury in the United States. In the United States from 2001–2005, about half of all alcohol-attributable deaths were due to an injury.⁹ In Washington State from 2006–2008, impairment from either alcohol or drugs accounted for 48 percent of all fatal collisions.¹⁰

The role that alcohol and other drugs play in injuries and violence requires specific attention. The influence of alcohol and other drugs can be measured across virtually all types of injuries. The link between alcohol and other drugs and violence, motor vehicle trauma, self-harm, drowning, poisoning, falls, and suffocation is well established, and is an issue that crosscuts other areas within this guide.

Preventing and treating the misuse of alcohol and other drugs is a very important prevention strategy across all areas of injury and violence prevention. The most extensive research on reducing alcohol-related injuries is on reducing motor vehicle-related injuries. Alcohol screening, treatment and brief interventions are promising tools to prevent alcohol-impaired driving.

Several environmental interventions including reducing availability of alcohol, legal minimum drinking age, zero tolerance laws, and increasing the price of alcohol have been effective in reducing motor vehicle-related deaths and injury. Sobriety checkpoints are shown to reduce alcohol-related fatal crashes. Alcohol testing of people who die of other causes of injuries is not comprehensive or consistent. However, it is likely that some of these strategies may reduce other types of injuries as well.¹¹

The Role of Mental Illness

Mental illness is an independent risk factor for both intentional and unintentional injuries. People with a mental illness may have a different pattern of unintentional injury and hospitalization.

One study found that those with a mental illness were more likely to be injured by falling or being a pedestrian hit by a car, and less likely to be injured in a motor vehicle crash. They also stayed in the hospital longer, and when discharged, they are more likely to go to a skilled nursing facility.¹²

Prevention Trends

Community, policy and systems-change models and approaches for interventions

Historically, injury has often been viewed as an individual-level health issue. This view has dominated injury prevention approaches. Over time, there has been a small shift in research from the individual to the physical environment. Most recently, there's been growing recognition of injury and violence as public health issues that require a comprehensive approach and integrated intervention strategies.

The causes of injuries are complex. No one part of society, working alone, can do everything needed to reduce injuries. Reducing injuries requires the combined efforts of health, education, transportation, law enforcement, engineering, and social and safety sciences.

One of the goals of the Department of Health's Agenda for Change is to "focus on policy and system efforts to foster communities and environments that promote healthy starts and ongoing wellness, prevent illness and injury, and better provide all of us the opportunity for long, healthy lives." Systems-change, policy, and community-level interventions may promote, sustain, and amplify injury preventive behaviors by providing individuals with information and skills in a supportive environment.

Supported by the World Health Organization, *Safe Communities* is an approach to injury prevention and safety promotion that seeks to understand injury and intervene at a community level.

Strategies that sustain injury prevention behavior

The *Spectrum of Prevention* model helps expand prevention efforts beyond education models by promoting a range of activities for effective prevention. Originally developed by Larry Cohen, the *Spectrum* is based on the work of Dr. Marshall Swift in treating developmental disabilities. It has been used nationally in prevention initiatives targeting traffic safety, violence prevention, injury prevention, nutrition, and fitness.

Injury and violence prevention activities must also cross the spectrum of prevention, consisting of the following six interrelated actions:¹³

- Strengthening knowledge and skills to reduce risky behavior
- Promoting community education to support individual behavior change

- Educating providers to help their patients or clients understand injury risks, and how to reduce those risks
- Fostering coalitions and networks that champion changes at the local level for safer communities
- Changing organizational practices that reduce injury risks
- Influencing policy and legislation to promote a safer society for everyone

Endnotes

¹ Centers for Disease Control and Prevention, National Centers for Injury Prevention and Control, "Web-based Injury Statistics Query and Reporting System (WISQARS)," www.cdc.gov/injury/wisqars/index.html, accessed March 2, 2010.

² T. Christofell and S.S. Gallagher, *Injury Prevention and Public Health, Practical Knowledge, Skills, and Strategies*, Aspen Publishers, Gaithersburg, Maryland, 1999.

³ The National Committee for Injury Prevention and Control, *Injury Prevention: Meeting the Challenge*, Oxford University Press, New York, 1989, p. 192.

⁴ L.S. Doll et al. (eds.), *Handbook of Injury and Violence Prevention. Injury and Violence Prevention Interventions: An Overview*, Springer, New York, 2006.

⁵ E. A. Finkelstein, et al., *The Incidence and Economic Burden of Injuries in the United States*, Oxford University Press, New York, 2006.

⁶ *Eliminating Health Disparities: The Role of Primary Prevention*, San Francisco, 2002.

⁷ Centers for Disease Control and Prevention, "Health Disparities and Inequities Report – United States 2011," www.cdc.gov/minorityhealth/CHDIReport.html, accessed September 17, 2012.

⁸ Washington State Department of Health, "Youth with Disabilities Risk Factors for Injury Data Monograph," www.doh.wa.gov/Portals/1/Documents/Pubs/160-023_YouthWithDisabilitiesRiskFactorsForInjury.pdf, accessed on March 2, 2012.

⁹ Centers for Disease Control and Prevention, "Alcohol-Related Disease Impact Software," http://apps.nccd.cdc.gov/DACH_ARDI/Default/Default.aspx, accessed on September 17, 2012.

¹⁰ Washington Traffic Safety Commission, "Target Zero," <http://targetzero.com/default.htm>, accessed March 2, 2012.

¹¹ R. W. Hingson et al., *Interventions to prevent alcohol-related injuries*, Springer, New York, 2006, pp. 295-310.

¹² J.J. Wan, et al., "Mental illness as an independent risk factor for unintentional injury and injury recidivism, *The Journal of Trauma, Injury, Infection, and Critical Care*," 2006, p. 61, pp. 1299-1304.

¹³ L. Cohen and S. Swift, "The Spectrum of Prevention: Developing a Comprehensive Approach to Injury Prevention," *Injury Prevention*, Vol. 5, No. 3, 1999.

CHILD ABUSE AND NEGLECT

DESCRIPTION:

Behavior that carries a substantial risk of causing a child physical or emotional harm. Four categories of maltreatment are: physical abuse, sexual abuse, neglect, and emotional maltreatment. In this report, child maltreatment (child abuse and neglect) is measured by the rate of children in referrals accepted for investigation by Child Protective Services.¹



Washington State Goal Statement

To decrease child abuse and neglect, including hospitalizations and deaths

National Healthy People 2020 Objectives

- Reduce child maltreatment victims from 9.4 in 2008 to 8.5 per 1,000 children under age 18 years.
- Reduce child maltreatment fatalities from 2.4 in 2008 to 2.2 per 100,000 children under age 18 years.

Statement of the Problem in Washington State

Child abuse and neglect cause direct suffering and long-term damage to physical and emotional well being. Many fatalities from injuries such as drowning or suffocation can be linked to abuse and neglect. Child abuse and neglect increase the risks of:

- Juvenile delinquency and adult criminality
- Substance abuse
- Adolescent pregnancy
- School failure
- Suicide attempts
- Poor mental and physical health²

A review of the effects of child sexual abuse on health found that survivors of sexual abuse are at risk for a wide range of health problems. These include post-traumatic stress symptoms, re-victimization, and high-risk sexual behaviors.³ A review of 16 long-term studies found that abuse in childhood consistently predicted risk for depression, anxiety and post-traumatic stress disorder in adulthood.⁴

Childhood abuse and other adverse childhood experiences contribute to chronic diseases and poor health decades later.²

Washington State Data Compared to United States Data

In 2011, 46,636 individual children were in accepted referrals to Child Protective Services (CPS), for a rate of 30 per 1,000 children under age 18. Only a portion of child maltreatment is reported to CPS, and not all referrals are investigated. Therefore, the number of child maltreatment cases is underestimated. Because states process and report cases differently, we do not know if the Washington State CPS rate and the United States' rates are comparable.

Age and Gender

In the state during 2009–2011, children ages 0–5 had the highest rates of maltreatment, followed by children 6–11, and then children 12–17 years old. Rates were slightly higher for girls than for boys. Nationally, children from 0–3 are at the greatest risk of any abuse. They have the highest abuse and neglect rates and are the most likely to die from the abuse and neglect they experience.⁵

Children birth to age 3 are probably the most important group to target for prevention. Early brain development research and nurturing theory show the huge potential to improve outcomes during the critical first years. Also, during this period, parents are most willing to receive information and support.⁶

Race and Ethnicity

American Indian and Alaska Native children had the highest rates of maltreatment, followed by African American and multiracial children. Asian and Pacific Islander children had the lowest rates of maltreatment; this may vary by subgroup.

Children in Referrals Accepted for Investigation by CPS (2009–2011)	Washington State Rate per 1,000
Total Rate	28.2
Gender	
Boys	27.8
Girls	28.5
Age Group	
0–5	36.5
6–11	28.0
12–17	20.2
Race/Ethnicity	
Non-Hispanic African American	49.4
Non-Hispanic American Indian/Alaska Native	67.6
Non-Hispanic Asian & Pacific Islander	11.2
Non-Hispanic Multiple Races	39.6
Non-Hispanic White	23.9
Hispanic	23.8

Washington State Behavioral Risk Factor Surveillance System and Healthy Youth Survey Data

In a 2010 survey of adults, about 19 percent of Washington State women and 8 percent of men reported a childhood history of sexual abuse. About 18 percent of men and women reported a childhood history of physical abuse.⁷ In 2010, about 18 percent of Washington State youth surveyed in 10th and 12th grades and 16 percent of those in 8th grade reported being physically abused by an adult at some point in their lives.⁸

Child Death Review

Child death review (CDR) is a process used to collect information about injury and death, including child abuse and neglect, to inform prevention efforts. Local health jurisdictions may voluntarily convene CDR teams to review deaths of children, under the age of 18, who have unexpectedly lost their lives. Teams identify circumstances in these deaths and consider strategies to improve health and safety for all children. Experts from many backgrounds, such as local public health, healthcare, social services, law enforcement, and others, serve on local teams. The State Department of Health is required under RCW 70.05.170 to assist local teams with data collection, respond to requests for CDR data, and provide technical assistance to teams.

The Department of Social and Health Services (DSHS) is also required to conduct a death review and submit a report on any suspected abuse or neglect related child fatality if the child was under the care of DSHS (RCW 74.13.640).

Risk and Protective Factors

Child abuse and neglect has been consistently linked with:⁹

- Parental poverty
- Unemployment
- Lack of parental education
- Young maternal age

Other family characteristics that contribute to abuse risk include:^{10, 11}

- Substance abusing parents
- Parents who were abused as children
- Parents with mental health diagnoses, such as antisocial personality or depression
- Domestic violence

Parents who are sensitive and responsive to their children's needs, keep a safe and healthy home environment, and have strong communications and problem-solving skills are less likely to be abusive or neglectful.¹²

Recommended Strategies

Since child abuse and neglect is a complex problem with a multitude of causes, we must respond to a range of needs in our prevention approaches.

Evidence-Based Strategy

Provide support programs for parents, especially for first time parents

The purposes of new parent or prenatal support programs are to improve parenting quality, promote child health and development, and prevent child abuse and neglect. These programs target new and expectant parents because abuse prevention should ideally start before problems develop. There are many new challenges in the transition to parenthood, and the first months of a child's life are crucial for attachment development.¹³

A recent review of randomized trials of parenting education programs for expectant and new parents found a small effect on reducing child abuse and neglect.¹⁴ The programs also showed small positive effects on parenting quality and child physical and social development. Most of these effects were maintained over follow-up periods averaging about two years.

Home visiting programs generally include a parent education component. They may also provide links to community resources and social support. Some programs provide help in teen pregnancy prevention, achieving educational and occupational goals, and reducing substance use. The Task Force on Community Preventive Services recommends early childhood home visiting programs to reduce child maltreatment among high risk families.¹⁴ In particular, the Nurse-Family Partnership has shown significant reductions in child abuse and neglect.^{15, 16} However, not all home visiting programs are similarly effective.¹⁷ Several local health jurisdictions in Washington State are implementing Nurse-Family Partnership programs. The programs enroll first time, low-income mothers early in their pregnancy and provide frequent home visits through their child's second birthday.

Promising or Experimental Strategies

Train parents in promoting positive child and youth development

Parent-focused interventions emphasize improving child-rearing skills and reducing child maltreatment. Although many interventions have not been carefully evaluated or have shown little effect, several programs have shown promise in at least one study:¹⁸

- The Incredible Years is a research-based program that has reduced harsh parenting, increased positive discipline, and reduced children's aggression and behavior problems. It has been adapted for abusive and neglectful parents but has not been evaluated for its ability to reduce child abuse and neglect.¹⁹
- In one well designed study, Family Connections reduced child abuse and neglect.²⁰ Family Connections provides emergency assistance, social support, family assessment, and customized interventions.
- Parent-Child Interaction Therapy is a parent training and skills building program for parents of young children with conduct disorders. This program focuses on the quality of the child-parent relationship. One randomized trial with physically abusive parents has shown fewer future physical abuse reports after training.²¹
- In a large-scale dissemination study of the Triple-P-Positive Parenting Program, 18 South Carolina counties were randomly assigned to dissemination of the program or to services as usual. Results showed lower rates of confirmed abuse and emergency room visits for child injuries in the counties where parent interventions were conducted.²²
- Parent Management Training²³ is a behavioral intervention for young children with disruptive behaviors and their parents. The program is intended to improve child behavior by increasing parental involvement and responsiveness. The program has been shown to improve parent-child interactions. However, it has not been evaluated for its ability to reduce child abuse and neglect.
- Child-Parent Centers, a program for preschool children and their parents, was one of the most effective programs cited in one review.²⁴ The program showed reduced maltreatment reports.

- The Period of PURPLE Crying, a program intended to reduce shaken baby syndrome, has been shown to increase knowledge and in one study, increased walking away from a crying baby. Its ability to reduce injury or abuse is unknown.²⁵

Other programs with varying levels of research support include:

- Parents as Teachers
- The Nurturing Parent Programs
- Stewards of Children

Improve identification and screening

Professionals who work with children, such as healthcare providers and teachers, are required by Washington State law to report suspected child abuse to Child Protective Services. Expertise in identifying and reporting child abuse varies. Many healthcare facilities use multi disciplinary teams to improve identification and case management of maltreated children. Healthcare professional organizations have initiated training programs to increase knowledge for recognizing, documenting, and treating child abuse.²⁶ In Washington State, reports of child abuse and neglect can be made by calling 1-866-ENDHARM.

Provide support and services for maltreated children

Mental health treatment for maltreated children reduces post-traumatic stress symptoms, depression and behavior problems. This is especially true for trauma- and abuse-focused cognitive behavioral therapy and Parent Child Interaction Therapy.^{27, 28}

Mental health services for children are generally effective, although other efforts are needed to protect the child from further maltreatment. As many as half of children with substantiated physical abuse do not receive mental health services.²⁶

Adverse childhood experiences

The Adverse Childhood Experiences (ACEs) Study²⁹ has shown that ACEs, including child abuse and neglect, are related to poor mental and physical health outcomes in adults. The stress of ACEs leads to these poor outcomes, including negative impact on brain development and weakened immune systems. The Family Policy Council and Community Networks, many local public health agencies, and communities in Washington have been working to prevent and reduce the negative impact of ACEs for several years. The Department of Health has funded work in Eastern Washington to assess ACEs awareness and intervention development. The Department of Health's Office of Healthy Communities is working to apply what is learned about ACEs to integrated maternal child health and chronic disease prevention work.

For More Information

Washington State

Washington State Department of Social and Health Services, Children's Administration, Child Abuse Prevention Tips: www1.dshs.wa.gov/ca/safety/prevAbuse.asp?1

Seattle Children's Protection program – Seattle Children's Hospital:

www.seattlechildrens.org/clinics-programs/protection-program/

Reporting Abuse: Hotline – Call 1-866-ENDHARM (1-866-363-4276), Washington State's toll-free, 24 hour, 7 day-a-week hotline will connect you directly to the appropriate local office to report suspected child abuse or neglect.

National

Childhelp USA® National Child Abuse Hotline at 1-800-4-A-CHILD® (1-800-422-4453).

Centers for Disease Control, National Center for Injury Prevention and Control, Child Maltreatment: Fact Sheet: www.cdc.gov/ViolencePrevention/childmaltreatment/index.html

Child Welfare Information Gateway: www.childwelfare.gov/

Nurse-Family Partnership: www.nursefamilypartnership.org/

Endnotes

- ¹ Washington statute defines child abuse or neglect as: 'Abuse or neglect' means sexual abuse, sexual exploitation, or injury of a child by any person under circumstances which cause harm to the child's health, welfare, or safety... or the negligent treatment or maltreatment of a child by a person responsible for or providing care to the child, Revised Code of Washington 26.44.020.
- ² U.S. Department of Health & Human Services Child Welfare Information Gateway, "Long-Term Consequences of Child Abuse and Neglect," www.childwelfare.gov/pubs/factsheets/long_term_consequences.cfm, accessed on July 30, 2012.
- ³ R. Maniglio, "The impact of child sexual abuse on health: A systematic review of reviews," *Clinical Psychology Review*, 2009, Vol. 29, pp. 647-657.
- ⁴ S. Welch, et al., "Family Relationships in Childhood and Common Psychiatric Disorders in later life: systematic review of prospective studies," *British Journal of Psychiatry*, 2009, Vol. 194, pp. 392-398.
- ⁵ U.S. Department of Health and Human Services, Children's Bureau, "Child Maltreatment," www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment, accessed on November 29, 2011.
- ⁶ J.S. Middlebrooks and N.C. Audage, "The Effects of Childhood Stress on Health Across the Lifespan," www.cdc.gov/ncipc/pub-res/pdf/Childhood_Stress.pdf, accessed on June 4, 2012.
- ⁷ Washington State Department of Health, Behavioral Risk Factor Surveillance System (BRFSS) data, www.doh.wa.gov/DataandStatisticalReports/HealthBehaviors/BehavioralRiskFactorSurveillanceSystemBRFSS.aspx, accessed on September 17, 2012.
- ⁸ Washington State Department of Health, Healthy Youth Survey (HYS) 2010 data, www.askhys.net/layout.asp?page=intro, accessed on September 17, 2012.
- ⁹ O.W. Barnett, et al., *Family Violence Across the Lifespan*, 3rd ed., Sage, Thousand Oaks, 2011.
- ¹⁰ J. D. Osofsky, *Adaptive and maladaptive parenting: Perspectives on risk and protective factors*, 2000, cited by J. P. Shonkoff and S. J. Meisels (eds.), *Handbook of Early Childhood Intervention*, 2nd ed., Cambridge University Press.
- ¹¹ J.S. Milner, et al., "Do trauma symptoms mediate the relationship between childhood physical abuse and adult child abuse risk?" *Child Abuse & Neglect*, 2010, Vol. 34, pp. 332-344.
- ¹² S.R. Wilson, et al., "Comparing physically abusive, neglectful, and non-maltreating parents during interactions with their children: A meta-analysis of observational studies," *Child Abuse & Neglect*, 2008, Vol. 32, pp. 897-911.
- ¹³ M. Pinquart and D. Teubert, "Effects of parenting education with expectant and new parents: a meta-analysis," *Journal of Family Psychology*, 2010, Vol. 24, pp. 316-327.
- ¹⁴ The Guide to Community Preventive Services, "Early childhood home visitation to prevent violence," www.thecommunityguide.org/violence/home/homevisitation.html, accessed on June 4, 2012.
- ¹⁵ The Nurse Family Partnership, www.nursefamilypartnership.org, accessed on June 4, 2012.
- ¹⁶ R.A. Hahn, et al., "First reports evaluating the effectiveness for strategies for preventing violence: early childhood home visitation," *Morbidity and Mortality Weekly Report*, 2003, Vol. 52, Sec. RR-14, pp. 1-9.
- ¹⁷ K.S. Howard and J. Brooks-Gunn, "The role of home-visiting programs in preventing child abuse and neglect," *Future of Children*, 2009, Vol. 19, pp. 119-144.
- ¹⁸ R.P. Barth, "Preventing child abuse and neglect with parent training: evidence and opportunities," *Future of Children*, 2009, Vol. 19, pp. 95-118.
- ¹⁹ C. Webster-Stratton and J.M. Reid, "Adapting the Incredible Years, an evidence-based parenting programme, for families involved in the child welfare system," *Journal of Children's Services*, 2010, Vol. 5, pp. 25-42. Also see *The Incredible Years*, www.incredibleyears.com.
- ²⁰ Department of Health and Human Services (DHHS), Administration on Children, Youth, and Families (ACYF), "Emerging practices in the prevention of child abuse and neglect," www.childwelfare.gov/preventing/programs/whatworks/report, accessed on September 17, 2012.
- ²¹ M. Chaffin and S. Schmidt, "An evidence-based perspective on interventions to stop or prevent child abuse," 2006, cited by J. R. Lutzker (ed.), "Preventing Violence: Research and Evidence-Based Intervention Strategies," American Psychological Association, Washington D.C., pp. 49-68.
- ²² Centers for Disease Control and Prevention, "Broad access to parenting support reduces risk of child maltreatment," www.cdc.gov/violenceprevention/pub/triple_p.html, accessed September 17, 2012.
- ²³ A.E. Kazdin, *Parent Management Training*, Oxford University Press, New York, 2008.
- ²⁴ A.J. Reynolds, et al., "Do early childhood interventions prevent child maltreatment?" *Child Maltreatment*, 2009, Vol. 14, pp. 182-206.
- ²⁵ R.G. Barr, et al., "Do educational materials change knowledge and behavior about crying and shaken baby syndrome?" *Canadian Medical Association Journal*, 2009, Vol. 180, pp. 727-733.
- ²⁶ Washington State Department of Health, "Health of Washington State: Child Abuse and Neglect," www.doh.wa.gov/DataandStatisticalReports/HealthofWashingtonStateReport/MostRecentReport.aspx, accessed on September 17, 2012.
- ²⁷ K. Shipman and H. Taussig, "Mental health treatment of child abuse and neglect: the promise of evidence-based practice," *Peatr Clin N Am*, 2009, Vol. 56, pp. 417-428. *Pediatric Clinics of North America*, 56:417-428.
- ²⁸ S.T. Harvey and J.E. Taylor, "A meta-analysis of the effects of psychotherapy with sexually abused children and adolescents," *Clinical Psychology Review*, 2010, Vol. 30, pp. 517-535.
- ²⁹ Centers for Disease Control and Prevention, "Adverse Childhood Experiences Study," www.cdc.gov/ace, accessed on May 29, 2012.

DROWNING

DESCRIPTION:

Drowning occurs when breathing is impaired because water or another liquid blocks a person's airway.



Washington State Goal Statement

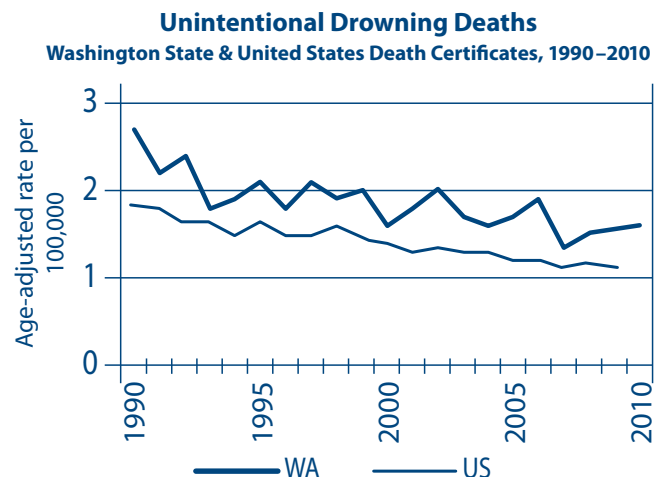
To decrease deaths and hospitalizations due to unintentional drowning

National Healthy People 2020 Objectives

- Reduce unintentional drowning deaths from 1.2 per 100,000 in 2007 to 1.1 deaths per 100,000.

Statement of the Problem in Washington State

Some of the most popular pastimes in Washington State are swimming, boating, and other forms of water recreation. In some circumstances, these activities can prove dangerous and fatal. Drowning is a complex injury issue. There is no single safety device that protects against all types of drowning. Understanding and practicing the “four wisdoms” are critical for water safety. They are: supervision, environment, gear, and education.

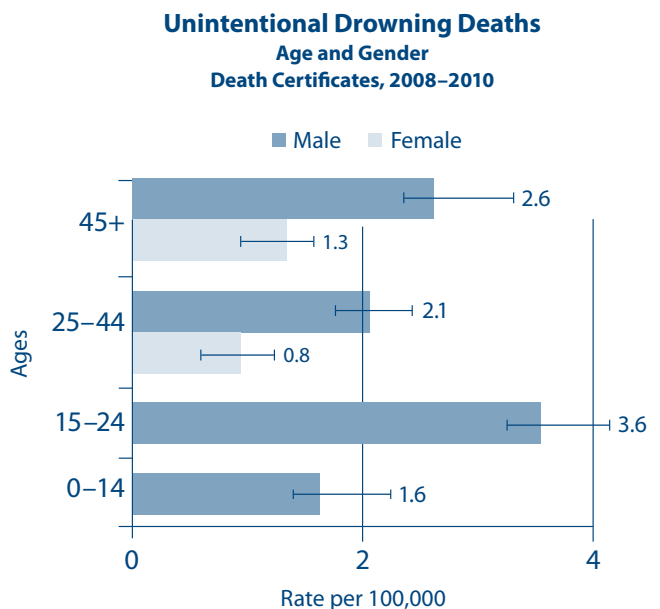


Washington State Data

Washington's unintentional drowning rates are higher than the national rate. However, over the past 28 years, drowning rates in Washington have steadily declined. In the latest data available from 2010, the unintentional drowning rate in Washington State was 1.6 per 100,000. There were 133 Washington State residents who died from unintentional drowning, including 17 boating-related drowning deaths.

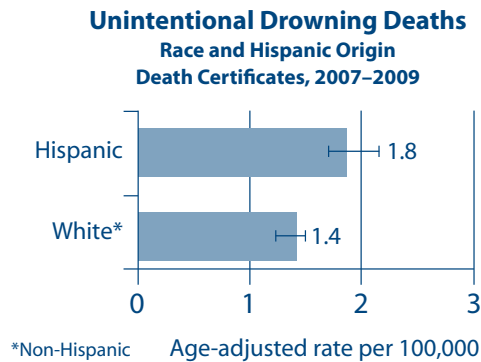
Age and Gender

From 2008–2010, males in the state were more likely to die from drowning than females. The highest death rates were for males between the ages of 15–24 years. Females younger than 25 had fewer than 20 deaths. The chart does not include them.



Race and Ethnicity

In Washington State during 2007–2009, African Americans, American Indians and Alaska Natives, Asian, and Pacific Islanders had fewer than 20 drowning deaths. The chart below does not include these groups. No racial group with stable death rates had death rates different from whites. The relationship of race, Hispanic origin, poverty, and education on drowning rates has not been widely researched.



Washington State Child Death Review Data

From 1999–2007, state residents between the ages of 0–17 accounted for 197 unintentional drowning deaths. Local child death review teams in the state completed 139 (67.1 percent) reviews of those 197 deaths.¹ Insights from these reviews include:

- 70 percent of the deaths occurred in open water (in a lake, river, pond, creek, or in the Puget Sound).
- 23 percent of the deaths occurred in a bathtub, a hot tub, a swimming pool, or a wading pool.
- Infants were most likely to drown in a bathtub.
- About 49 percent of children ages 1–4 drowned in open water.
- Most of the swimming pool deaths occurred in the 1–4 age group.
- 89 percent of the drowning deaths of older children and adolescents occurred in open water.
- A lifeguard was present in four of the drowning deaths.
- Only five children were noted to be wearing a life jacket at the time of their drowning.
- 85 percent of these deaths were preventable.

Healthy Youth Survey Data

In the 2010 Washington State Healthy Youth Survey, 52 percent of the Grade 8 students, 41 percent of the Grade 10 students, and 36 percent of the Grade 12 students said they always wear a life jacket when boating.

Emergency Department Visits and Cost Data

For every child 14 years and younger who dies from drowning, seven children get emergency department care for nonfatal submersion. More than half of these children are either hospitalized or are transferred to another facility.² Nonfatal drownings can cause brain damage with long-term disabilities that include memory problems, learning disabilities, or permanent loss of basic functioning. The cost of one fatal drowning event, including direct costs and lost productivity, has been estimated at \$1.1 million in 2011 dollars.³

Risk and Protective Factors for Children

Nationally, infants under age one most often drown in bathtubs, buckets, or toilets.⁴ Children can drown in as little as an inch of water. Therefore, they are at risk of drowning in bathtubs, buckets, diaper pails, toilets, and in other places where minimal water has accumulated. Many infants who die in a bathtub are not supervised. Nationally, since 1983, there have been at least 104 deaths and 162 nonfatal incidents involving baby bath seats.⁵ Among 1–4 year olds, most drownings occur in residential swimming pools.⁴

In public swimming areas, one in five parents falsely believes that when lifeguards are present, the lifeguard is the main person responsible for supervising children in the water. In reality, the typical lifeguard-to-swimmer ratio at public swimming areas may be as high as 25 swimmers per lifeguard.⁶

Seizures. For persons with seizure disorders, drowning is the most common cause of unintentional injury death. The bathtub is the site with the highest drowning risk.⁷

Alcohol. Alcohol use is involved in about 25 percent – 50 percent of adolescent and adult deaths associated with water recreation.^{8,9} Alcohol influences balance, coordination, and judgment. Sun exposure, wave action, and heat heighten alcohol's effects.¹⁰

Boating. Washington State has one of the highest numbers of registered boats in the nation. Boating carries risks for injury. The 2010 U.S. Coast Guard national report show that in the United States:

- There were 4,967 boating incidents.
- There were 3,474 boating injuries.
- The fatality rate was 5.4 deaths per 100,000 registered recreational vessels.
- Almost three-fourths of all fatal boating deaths were due to drowning; of those, 88 percent were not wearing a life jacket.

- Twenty-one children under age thirteen lost their lives while boating in 2010; 42 percent of them drowned.

It is estimated that 85 percent of Washington State's boating-related drowning deaths could have been prevented if the person had been wearing a life jacket. In 2011, alcohol was involved in about 20 percent of all reported boating fatalities.¹¹ In Washington in 2011, there were 15 boating-related deaths and 54 injuries reported to U.S. Coast Guard.

Recreational boats must carry one appropriately-sized, U.S. Coast Guard approved life jacket for each person onboard. The life jackets must be accessible and in good condition. Children under age 13 must wear child-sized life jackets. Parents of children who do not always wear life jackets commonly cite their own proximity to the child and to the life jacket, and the child's swimming ability as common reasons for not requiring their child to wear a life jacket.

Children reported that they did not wear life jackets for the following reasons:

- They could swim (29 percent)
- They could grab the life jacket quickly if they needed it (27 percent)
- There was no life jacket available (18 percent)⁶

Young children should wear life jackets whenever they are around deep water, such as on a dock or on a beach. The majority of drowning incidents occur from small water craft. Washington State's Boating Safety Regulation states; children 12 years of age and under are required to wear U.S. Coast Guard-approved life jackets on boats less than 19 feet. The injury prevention community recommends that all passengers and operators wear life jackets on boats, canoes, kayaks, and on rafts less than 16 feet.

Recommended Strategies

Evidence-Based Strategies

Provide education and enforcement to reducing drownings⁹

Enforce the International Building Code Appendix G 3109.4 for Washington State. This requires the fencing of residential pools, and a self-closing/self-latching gate. Studies show that pool fencing significantly reduces the risk of drowning. Isolation fencing, specifically around the pool, is better than perimeter fencing, which allows access to the pool through the home.¹² Studies also show that passing legislation requiring the use of fencing is not enough to reduce drownings; the legislation must be enforced and adults must supervise children.⁷

Provide information on pool safety, barriers, and supervision when selling and installing pools, work with the building industry to enforce Appendix G of the International Residential Building Codes for Washington State.

Promising or Experimental Strategies

Increase life jacket use in boats, and while swimming in open water where no lifeguard is present (for example, in lakes and rivers)

- Promote life jacket use among non-boat owners.
- Start and maintain life jacket loaning programs.
- Use incentives and discount coupons for life jackets.

Swimming lessons for young children

Formal swimming lessons and water-safety skills training can start at a young age. In fact, the American Academy of Pediatrics supports swimming lessons for children as young as one year of age. The decision to begin swimming lessons should be based on the individual child's exposure to water, emotional maturity, physical limitations, and health concerns.¹³ Participation in formal swimming lessons may reduce the risk of drowning by as much as 88 percent among young children aged 1 to 4 years,¹⁴ who are at highest risk of drowning.

Two additional case-control studies showed that swimming lessons may reduce drowning risk in children 1–4 years old.¹³ It is unclear from these studies if there are certain aspects of swimming instruction or water-survival skills that might be most beneficial. Although swimming lessons might reduce drowning risk, they would not “drown-proof” a child.

Increase community awareness

Funding is needed for effective public education and media campaigns. Focus strategies on high-risk groups, especially young men ages 15 to 24.

Messages should highlight the following drowning risk factors and prevention/safety strategies:

- Use universal signage to warn of drowning risks.
- Seek physically safe water environments. This means:
 - Know the water. The state’s lakes and rivers are cold, even in the summer, and currents are strong enough to overwhelm even the strongest swimmers.
 - Check water conditions, never dive or jump into unfamiliar or shallow water, and swim in designated areas only.
- Publicize life guarded areas and where life jacket loan programs are located.
- Publicize drownings and near drownings, and what lead to them – always include a prevention message.
- Children and adolescents need good supervision in or near the water. Good supervision means:
 - Constant observation by a sober adult
 - Staying within arms-reach of children
 - Having the capacity to carry out a quick rescue

- Use messages that combine learning to swim with life jacket use.
- Emphasize parent role modeling of life jacket use.
- Use messages that combine learning to swim with open water survival skills.

Decrease the use of alcohol while boating

- Strengthen and enforce current boating-under-the-influence regulations

Encourage policies and regulations that emphasize water safety

- Continue to implement boating regulations and mandatory boater education that focus on water safety and drowning prevention.
- Continue to implement state and local board of health pool, spa, water park, and bathing beach policies and regulations. Review and update as necessary.
- Improve safety at public bathing beaches by providing safety signage.

Support standardized drowning death investigation procedures and improve data collection efforts

- Investigate and track cases, and provide funding for data collection, analysis, and training. Well-developed state and local systems, such as the child death review, Washington Trauma Registry, death investigation reports, and other sources are needed to investigate and analyze data to prevent future tragedies.

For More Information

Washington State

Drowning Prevention and Water Safety Information, prepared by the Washington State Drowning Prevention Network and Seattle Children’s Hospital
www.seattlechildrens.org/dp/

Harborview Injury Prevention & Research Center, Best Practices
www.hiprc.org

Washington State Department of Health, Health of Washington State. Drowning Chapter
www.doh.wa.gov/HWS

Washington State Parks and Recreation Commission, Boating Safety Program
www.parks.wa.gov/boating

National/International

Australian Water Safety Council
www.watersafety.com.au

Centers for Disease Control and Prevention
www.cdc.gov/injury/

Child Safety Europe
www.childsafetyeurope.org

National Safe Boating Council
www.safeboatingcouncil.org

Safe Kids USA
www.safekids.org

Endnotes

- ¹ Washington State Department of Health, Child Death Review Database, Maternal and Child Health Assessment, includes deaths reviewed as of June 2006.
- ² Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, "Web-based Injury Statistics Query and Reporting System (WISQARS)," www.cdc.gov/injury/wisqars/index.html, accessed February 27, 2012.
- ³ C. Branch, Ph.D., "Lifeguard Effectiveness: A Report of the Working Group," 2004.
- ⁴ B.A. Brenner, et al., "Where children drown," *Pediatrics*, 1995, Vol. 108, No. 1, pp. 85-90.
- ⁵ National Safe Kids Campaign, "Drowning Fact Sheet," 2005.
- ⁶ B.E. Cody, et al., "Clear Danger: A National Study of Childhood Drowning and Related Attitudes and Behaviors," 2004.
- ⁷ L. Quan, et al., "Interventions to prevent drowning," 2006 cited by L. Doll, et al. (eds.), *Handbook of injury and violence prevention*, Springer, New York, 2006.
- ⁸ J. Howland and R. Hingson, "Alcohol as a risk factor for drowning: A review of the literature, 1950-1985," *Accidents Analysis and Prevention*, 1988, Vol. 20, No. 1, pp. 19-25.
- ⁹ J. Howland, et al., "Alcohol as a risk factor for drowning and other aquatic injuries," 1995, cited by R.R. Watson (ed.), *Alcohol and Accidents. Drugs and alcohol abuse reviews*, Vol.7, Humana Press, Totowa, New Jersey.
- ¹⁰ G.S. Smith and J.F. Kraus, "Alcohol and residential, recreational, and occupational injuries: A review of the epidemiologic evidence," *Annual Review of Public Health*, 1988, Vol. 9, pp. 99-121.
- ¹¹ U.S. Coast Guard, "Recreational Boating Statistics 2011," www.uscgboating.org/statistics/accident_statistics.aspx, accessed on June 10, 2012.
- ¹² D.C. Thompson and F.P. Rivara, "Pool fencing for preventing drowning in children," *Cochrane Database of Systemic Reviews*, 2000.
- ¹³ J. Weiss, American Academy of Pediatrics Committee on Injury, Violence, and Poison Prevention, "Prevention of Drowning," www.pediatrics.org/cgi/doi/10.1542/peds.2010-1265, accessed on September 17, 2012 or *Pediatrics*, Vol. 126, pp. 253-262.
- ¹⁴ R.A. Brenner, et al., "Association between swimming lessons and drowning in childhood: A case-control study," *Archives of Pediatrics & Adolescent Medicine*, 2009, Vol. 163, No. 3, pp. 203-210.

OLDER ADULT FALLS

DESCRIPTION:

All unintentional fall-related deaths and hospitalizations in adults 65 years old and older.



Washington State Goal Statement

To reduce deaths and hospitalizations caused by falls among older adults

National Healthy People 2020 Objectives

Prevent an increase in unintentional fall-related deaths among those 65 years and older from 45 deaths per 100,000 in 2007.

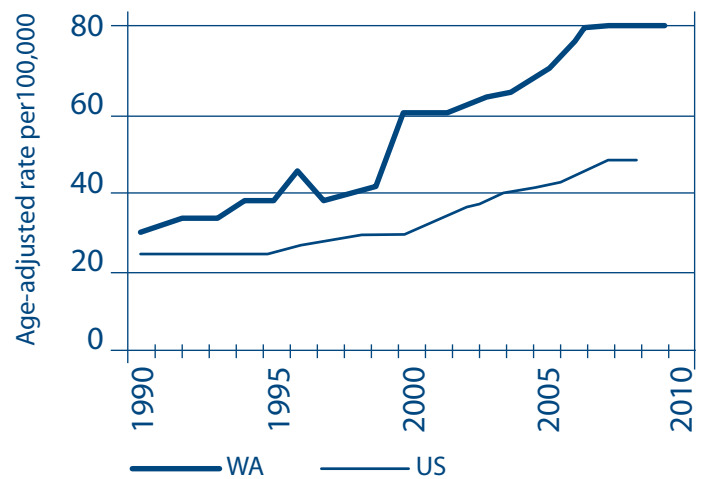
Statement of the Problem in Washington State

In 2010, falls were the leading cause of injury-related hospitalizations in Washington State, with more than 20,000 hospitalizations. Falls were the third leading cause of injury-related deaths, with 823 deaths. Adults age 65 or older had over two thirds of the hospitalized falls (13,856 hospitalizations) and 83 percent (685) of fall-related deaths.

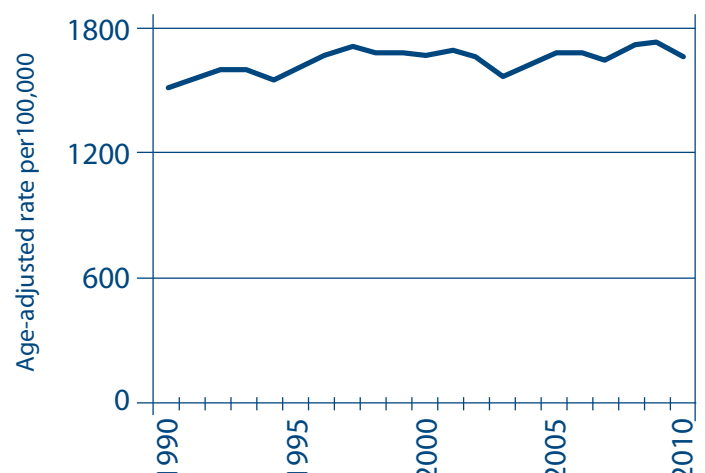
Washington State Data

Falls are a major health problem among older adults. Fall-related injuries cause significant death, disability, loss of independence and early admission to nursing homes.¹ Falls among older adults are the leading cause of injury hospitalizations in Washington State. In Washington State from 1999–2010, the fall hospitalization rate among older adults has been stable. However, because of the population growth among older adults, the number of hospitalizations increased by 23 percent from 1999–2010. In 2012, there are 888,861 residents age 65 or older. That number is projected to reach 1.2 million by 2020.²

Unintentional Fall Deaths
Washington State & United States
Ages 65+ Death Certificates, 1990–2010



Unintentional Fall Hospitalizations
Among Older Adults
Washington Hospital Discharge Data, 1990–2010



Falling is associated with subsequent admission to a nursing home. Among Washington State seniors who were hospitalized for a fall in 2008, 22 percent were released to their home under self-care and about 53 percent were moved to skilled nursing facilities or intermediate care facilities for additional care.

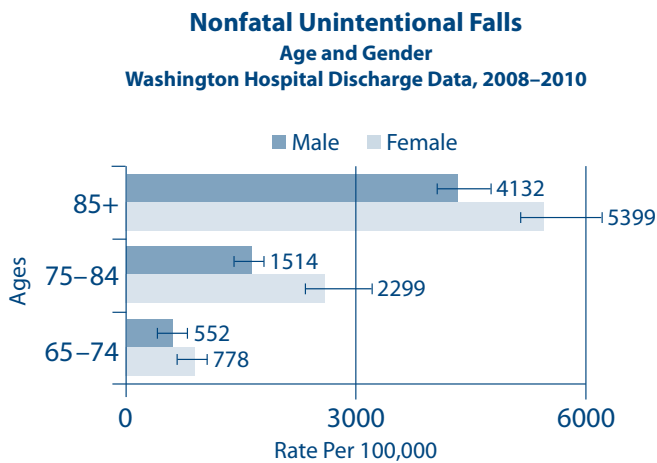
Many nursing home placements are temporary, with the patient returning home after two or three months of rehabilitation. However, falls remain a strong predictor of long-term placement in a nursing home.³

Age and Gender

From 2008–2010, women had the highest fall hospitalization rates. Fall hospitalization rates increased with age.

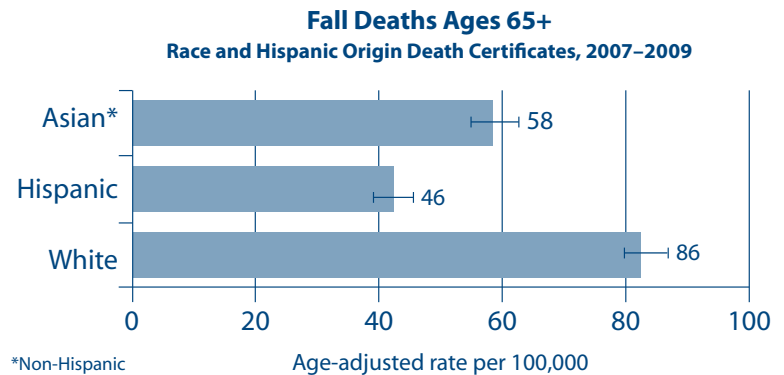
The high rate of fall-related injury in elderly persons is due to a high prevalence of clinical diseases like osteoporosis, and age-related physiologic changes such as slowed reflexes. These make even a mild fall particularly dangerous.⁴ Potential age-related risk factors for falls include:

- Decreased muscle strength and mass
- Chronic diseases
- Impairment of gait and balance
- Impaired visual acuity and depth perception
- Impaired mental status



Race and Ethnicity

From 2007–2009, fall deaths in Washington State are highest among whites. American Indians and Alaska Natives, African Americans, and Pacific Islanders had fewer than 20 fall deaths. The chart does not include these groups.



Prevalence of Falls Among Older Adults

In Washington State, one in five older adults report having fallen in the previous three months. About 30 percent of those falls resulted in an injury severe enough to cause the person to limit their activities for at least a day or visit a doctor.

Costs Associated with Falls

The costs of healthcare associated with treating fall-related injuries and fractures are staggering. In 2000, the national lifetime medical costs for treatment of falls were estimated at \$19 billion.⁵ Hospitalizations accounted for the majority of the costs of nonfatal fall injuries.⁶ On average, the hospitalization cost for a fall injury among an older adult is \$17,500.⁷

Risk Factors for Falls

The major risk factors for falling are diverse, and many of them can be addressed. Reviews of risk factors among older adults found the following to be strongly associated with fall risk:

- A history of previous falls
- Vertigo
- Gait deficit
- Use of walking aids
- Use of antiepileptic medications
- Cognitive impairment⁸
- Use of sedative, hypnotic, antidepressants, or benzodiazepine medications⁹

The risk of falling increases with the number of risk factors present.¹⁰ Osteoporosis, while not a risk factor for falling, increases the likelihood of a fracture in the event of a fall.¹¹

Environmental risk factors include fall hazards in and around the home. These include tripping hazards such as:

- Throw rugs and clutter in walkways
- Lack of stair railings and grab bars

- Small pets
- Slippery surfaces
- Unstable furniture
- Poor lighting

For persons aged 65 years or older:

- 60 percent of fatal falls occur in the home.
- 30 percent of fatal falls occur in public places.
- 10 percent of fatal falls occur in healthcare institutions.¹

Recommended Strategies

There are some evidence-based strategies for reducing falls among older adults and a few promising strategies. To be effective, most of these have to be done together.

Evidence-Based Strategies

Increase the availability of low cost, accessible exercise programs tailored for older adults

To effectively decrease falls, exercise interventions need to include at least two of the following: strength, balance, flexibility, or endurance. Exercising in supervised groups, participating in Tai Chi, and carrying out individually prescribed exercise programs at home are all effective in reducing falls.¹²

Increase multi-factorial fall risk assessment and management programs that include tailored follow-up interventions for older adults at high risk for falls

Multi-factorial interventions identify a person's risk of falling, and then refer them for treatment to reduce their risk.

Generally, these interventions have included:

- Risk assessment
- Tailored exercise
- Physical therapy to improve gait, balance, and strength
- Medication review and modification
- Education about fall risk factors
- Referrals to healthcare providers for treatment of chronic conditions that may contribute to fall risk
- Having vision assessed and corrected^{4,13}

Promising or Experimental Strategies

Increase awareness of fall risk

Provide education to older adults on risk factors and fall prevention strategies, in combination with exercise programs and assessments.

Conduct professional education on fall risk factor assessment and interventions for physicians and other healthcare providers. These should include nurse practitioners, physician assistants, and allied healthcare professionals.

At the community level, falls prevention programs should be promoted. Essential components include:

- Conduct programs for people who are at especially high risk of falling.
- Conduct programs for older adults at lower risk, to keep them active, independent, and in the low-risk, falls-free category.

For More Information

Falls Among Older Adults

Washington State

Falls Among Older Adults: Strategies for Prevention. Washington State Department of Health

[www.doh.wa.gov/Portals/1/Documents/2900/](http://www.doh.wa.gov/Portals/1/Documents/2900/FallsAmongOlderAdults.pdf)

[FallsAmongOlderAdults.pdf](#)

The Health of Washington State. Falls Among Older Adults Chapter

www.doh.wa.gov/HWS

Washington State Department of Health Injury & Violence Prevention Program, “*Stay Active and Independent for Life – An Information Guide for Adults 65+*”

<http://here.doh.wa.gov/materials/stay-active-and-independent-for-life-an-information-guide-for-adults-65>

National

CDC Falls Prevention page

www.cdc.gov/HomeandRecreationalSafety/Falls/index.html

CDC’s Preventing Falls: What Works A CDC Compendium of Effective Community-based Interventions from Around the World

www.cdc.gov/HomeandRecreationalSafety/Falls/compendium.html

National Council on Aging: Falls Free Initiative

www.ncoa.org/improve-health/center-for-healthy-aging/falls-prevention/

Fall Prevention Center of Excellence

www.stopfalls.org

Endnotes

- ¹ J.A. Stevens, “Falls among older adults – risk factors and prevention strategies. Falls Free: Promoting a National Prevention Action Plan,” www.ncoa.org/improve-health/center-for-healthy-aging/content-library/falls-free-promoting-a.html, accessed on March 14, 2012 or Research Review Papers, National Council on Aging, pp. 3-18.
- ² Washington State Office of Financial Management, “Forecast of the State Population by Age and Sex: 2010-2040,” www.ofm.wa.gov/pop/stfc/default.asp, accessed on March 14, 2012.
- ³ R.A. Kenny and D. O’Shea, “Falls and Syncope in Elderly Patients,” *Clinics in Geriatric Medicine*, 2002, Vol. 18, No. 2, pp. xiii-xiv.
- ⁴ L.Z. Rubenstein and K.R. Josephson, “Falls and their prevention in elderly people: what does the evidence show?” *Medical Clinics of North America*, 2006, Vol. 90, pp. 807-824.
- ⁵ E.A. Finkelstein, et al., *The incidence and economic burden of injuries in the United States*, Oxford University Press, New York, 2006.
- ⁶ J.A. Stevens, et al., “The costs of fatal and nonfatal falls among older adults,” *Injury Prevention*, 2006, Vol. 12, pp. 290-295.
- ⁷ B.S. Roudsari, et al., “The acute medical care costs of fall-related injuries among the U.S. older adults,” *Injury – International Journal of the Care of the Injured*, 2005, Vol. 36, pp. 1316-1322.
- ⁸ S. Dandrea, et al., “Risk factors for falls in community-dwelling older people: a systematic review and meta-analysis,” *Epidemiology*, 2010, Vol. 21, No. 5, pp. 658-668.
- ⁹ J.C. Woolcott, et al., “Meta-analysis of the impact of 9 medication classes on falls in elderly persons,” *Arch Intern Med*, 2009, Vol. 169, No. 21, pp. 1952-1960.
- ¹⁰ M.E. Tinetti, et al., “Risk factors for falls among elderly persons living in the community,” *New England Journal of Medicine*, 1988, Vol. 319, pp. 1701-1707.
- ¹¹ N.D. Nguyen, et al., “Identification of high-risk individuals for hip fracture: A 14-year prospective study,” *Journal of Bone and Mineral Research*, 2005, Vol. 20, No. 11, pp. 1921-1928.
- ¹² L.D. Gillespie, et al., “Interventions for preventing falls in older people living in the community,” *Cochrane Database System Rev*, 2009.
- ¹³ M.E. Tinetti, et al., “A multifactorial intervention to reduce the risk of falling among elderly people living in the community,” *New England Journal of Medicine*, 1994, Vol. 331, pp. 821-827.

MOTOR VEHICLE-RELATED INJURIES

DESCRIPTION:

All unintentional motor vehicle-related deaths, including those involving drivers, passengers, pedestrians, motorcyclists, and bicyclists.



Washington State Goal Statement

To decrease deaths and hospitalizations due to motor vehicle traffic crashes

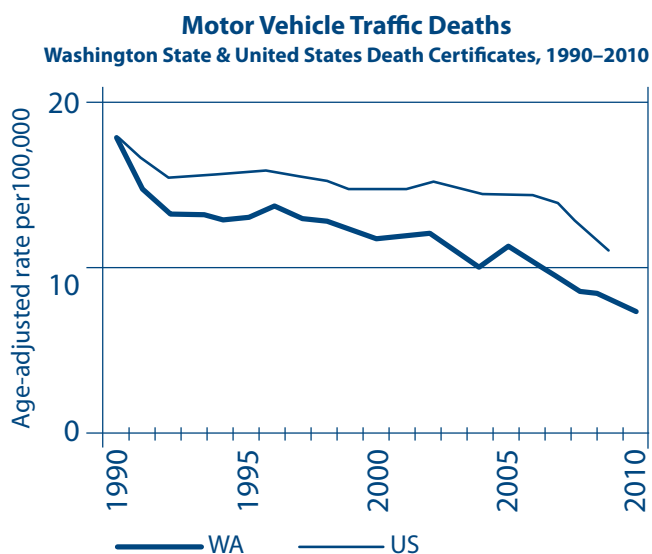
National Healthy People 2020 Objectives

- Reduce motor vehicle death rate from 13.8 to no more than 12.4 per 100,000 and reduce from 1.3 to 1.2 deaths per 100 million vehicle miles traveled.
- Reduce pedestrian deaths on public roads from 1.4 pedestrian deaths to 1.3 deaths per 100,000.
- Reduce pedal cyclist deaths on public roads from 0.24 pedal cyclist deaths to 0.22 deaths per 100,000.
- Reduce nonfatal injuries caused by motor vehicle crashes from 771.5 to 694.4 nonfatal injuries per 100,000.
- Reduce nonfatal pedestrian injuries on public roads from 22.6 to 20.3 nonfatal injuries per 100,000.
- Increase use of safety belts from 84 percent to 92.4 percent.
- Increase age-appropriate vehicle restraint system use in children:
 - Increase the percent of children aged 0 to 12 months who are restrained in rear-facing child safety seats from 86 to 95.
 - Increase the percent of children aged 1 to 3 years who are restrained in front-facing child safety seats from 72 to 79.
 - Increase the percent of children aged 4 to 7 years who are restrained in booster seats from 43 to 47.
 - Increase the percent of children aged 8 to 12 years who are restrained in safety belts from 78 to 86.

- Increase the proportion of motorcycle operators and passengers using helmets from 67 percent to 73.7 percent.
- Increase the number of states and the District of Columbia with “good” graduated driver licensing (GDL) laws from 35 to 51 states.
- Increase the number of states and the District of Columbia with laws requiring bicycle helmets for bicycle riders from 19 to 27 states.

Statement of the Problem in Washington State

In Washington State, motor vehicle crashes are the second leading cause of unintentional injury death (after poisonings), and the leading cause of major trauma.¹ Motor vehicle injuries are largely preventable and are mainly due to human behavior rather than poor road design, vehicle issues, or weather.



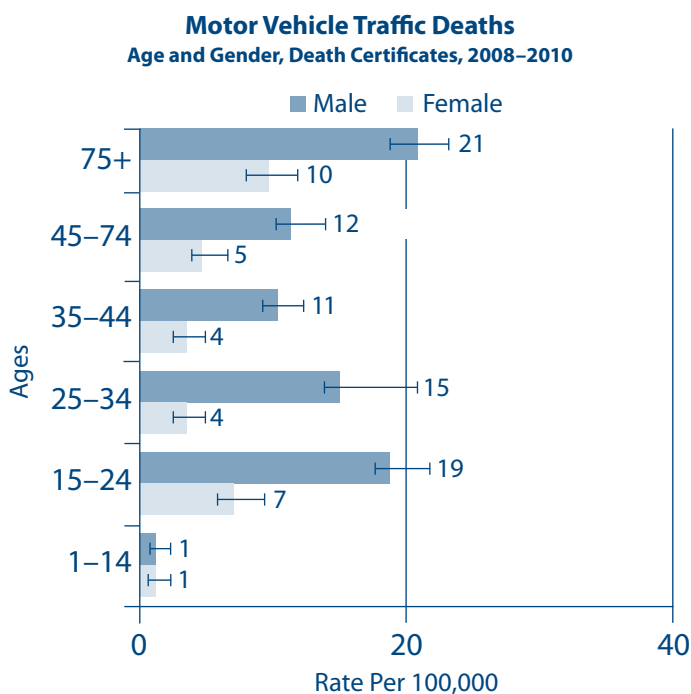
According to the Washington Traffic Safety Commission (WTSC), driver and occupant behavior is responsible for the majority of all motor vehicle crashes. WTSC's Strategic Highway Safety Plan (*Target Zero*) reports that between 2009 and 2011, 71.4 percent of traffic fatalities involved driver impairment, speed, and/or run-off-the-road collisions. These three areas were often in play together and resulted in 1,006 deaths during the three year period.

Washington State Data

The motor vehicle related death rate in Washington State is lower than the national rate. Starting in the early 1990s, motor vehicle deaths leveled off nationally while our state rate continued to decline. National death rates have declined in the last couple of years. In 2010, the most recent year of national death data, the age-adjusted national death rate was 10.65 per 100,000. The rate in Washington State was 7 per 100,000. The death rate per 100 million vehicle miles of travel in 2010 was 0.8 in Washington. Our state has seen consistent declines since 1995 when the death rate per 100 million vehicle miles of travel was 1.3.²

Age and Gender

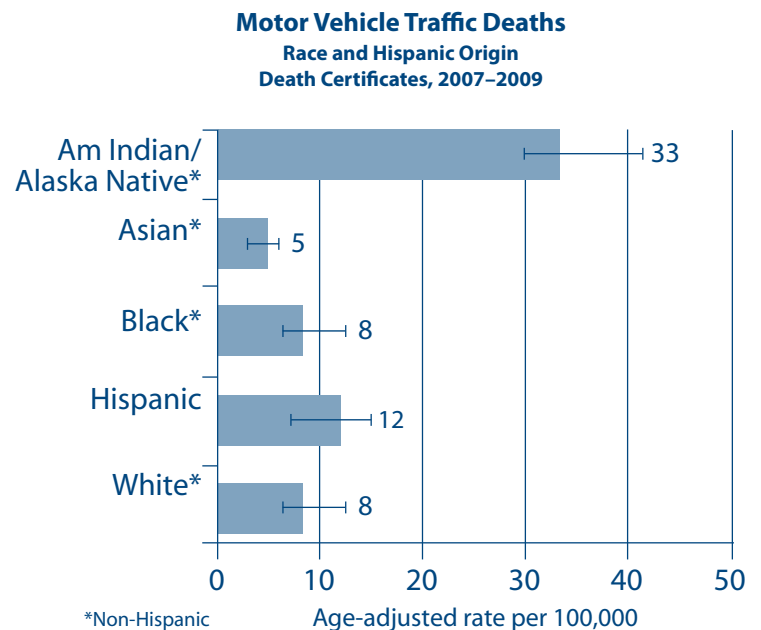
From 2008–2010, 71 percent of residents who died in crashes were males. The highest death rates were among younger males ages 15–34 and older men ages 75 and older.



In crashes of the same severity, older drivers are more likely to die. The prevalence of medical impairments increases with age and the strength of bones and internal organ function decreases, which may increase risk of injury.³

Race and Ethnicity

From 2007–2009, American Indians and Alaska Natives had the highest motor vehicle traffic death rates, followed by Hispanics. Pacific Islanders had fewer than 20 deaths, and were not included in the chart. Motor vehicle related death rates are higher in low income neighborhoods and among those with lower education.



Risk and Protective Factors

Washington's Strategic Highway Safety Plan (*Target Zero*) was approved by Governor Gregoire in 2010. The plan guides traffic safety work for several years. Since most motor vehicle crashes are related to human behavior, the priorities focus on people and the need for some drivers to change their behavior. This section is organized by the *Target Zero* priorities.

Leading Reasons for Fatal Crashes

The top three factors cited in fatal crashes in Washington State are:

- 1) impairment, which includes alcohol, illicit drugs, and prescription and over-the-counter medications;
- 2) run-off-the-road collisions; and
- 3) vehicle speed.

From 2009 to 2011, 71.4 percent of traffic fatalities involved one of these three factors. Impaired driving claimed 682 lives (48.4 percent of deaths). Speeding claimed 551 lives (39.1 percent of deaths). Run-off-the-road collisions claimed 621 lives (44.1 percent of deaths). Considerable overlap exists between these categories.²

Alcohol impaired driving

From 2009–2011, the most common drinking driver fatality involved:

- Males (79.5 percent)
- 16–25 year olds (56.1 percent)
- Single motor vehicle occupants or riders (66.8 percent)
- Driving on rural roads (60.3 percent)
- Driving at night (51.6 percent)²

Speeding

Speeding is the number one factor in fatal crashes for drivers 16–25 years old. Many speed related deaths occur on the weekends, and most often in the summer months. Although speed related crashes occur most often on freeways, speed related deaths happen most frequently on rural roads.²

Run-off-the-road collisions

Run-off-the-road collisions are especially high on county roads, making up 57.3 percent of all fatalities on county roads from 2009–2011. Once a vehicle leaves the roadway, the most harmful event is the vehicle overturning, followed by impact with an object such as a tree, utility pole, or a ditch. Speeding and impairment overlap significantly in run-off-the-road collisions.²

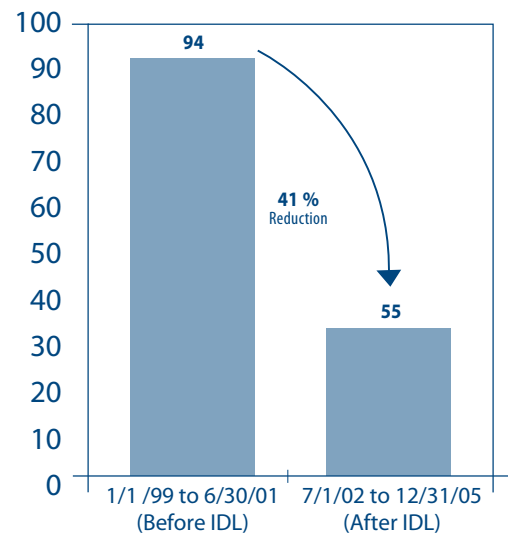
Young drivers

Young drivers made up only 14.2 percent of all licensed drivers from 2009 to 2011, yet they represented 25.3 percent of drivers in fatal and serious injury crashes. In Washington State, 16–25 year old drivers were twice as likely to be speeding or passing improperly compared to older drivers, and one-third more likely to be impaired while driving. Nationally, two out of three teen passenger deaths occur when another teen is driving.

Newly licensed drivers with less than one year of driving experience have the highest number of crashes and crash rate. Nearly half of the newly licensed driver's fatal crashes were single vehicle crashes.

Washington state issues an Intermediate Driver License (IDL), or a graduated license, to a driver under the age of 18. IDL works by progressively developing and improving the skills of younger, inexperienced drivers in a safer environment. When traffic offenses occur during IDL, there is tiered punishment.

16–17 Year Old Drivers Involved in Disabling and Fatal Injury Crashes
Before/After Study, Annual Average



Since the IDL law took effect in Washington State in July 2001, there has been a 41 percent drop in the number of fatal and disabling injuries among new 16 and 17 year old drivers.²

According to the Healthy Youth Survey, Washington 10th graders who reported driving after they had been drinking alcohol decreased significantly from 10 percent in 1992 to 7 percent in 2010. This still means about 5,700 10th graders in 2010 reported driving after drinking alcohol.

Tenth graders who reported riding in a vehicle driven by someone who had been drinking alcohol declined significantly from 29 percent in 1992 to 22 percent in 2010. This represents about 18,000 10th graders in 2010 who reported riding in the car with a driver who had been drinking alcohol.

These are slow and steady decreases, but many teens still need to stop driving after using alcohol and/or drugs, and should not ride with an impaired driver.

Protective-Correct Use of Occupant Restraints

Proper use of seatbelts reduces motor vehicle deaths by 60 percent.⁴ One of the leading factors in the steady decline in motor vehicle crash deaths in Washington State has been increased seat belt usage.

Seat belt enforcement efforts in Washington State began in 1986 (when seat belt usage was 36 percent) with the passage of the secondary seat belt law. This was followed by a primary seat belt law in 2002.² Click-It-or-Ticket campaigns were used extensively and increased enforcement. In 2010, 98 percent of drivers wore seatbelts in Washington State.⁵

Two- and three-year-olds restrained in a child car seat in the rear seat of a vehicle have an 82 percent lower risk for injury than children in lap-shoulder belts.⁶ In 2000, 92 percent of children younger than nine rode with some type of restraint system. However, about half of the children were not using appropriate restraints for their age and size.⁷

The current child passenger restraint law in Washington State (RCW 46.61.687) requires:

- When practical, children who are not yet 13 years old will be transported in the back seat.
- Children, prior to 8 years of age, unless already 4'9" tall (57 inches), will be transported in the child restraint system that is appropriate for the child's age and size. Examples include a child car seat, booster seat, or other restraint that is federally-approved for use in the vehicle.
- The restraint system will be used according to the car seat and vehicle manufacturer's instructions.
- Vehicles equipped with lap-only seat belts will be exempt from the requirement to use a booster seat.
- Children eight years of age or at least 4'9" tall who wear a lap/shoulder seat belt will wear it correctly, not under the arm or behind the back.

Motorcycles

Motorcycles are the most dangerous type of motor vehicle. They are involved in fatal crashes at a rate of 35 per 100 million VMT, compared to a rate of two per 100 million VMT for passenger vehicles.⁸ Since 2002, motorcyclist crashes and fatalities have increased significantly. In 2002, there were 54 fatalities and in 2010 there were 68 fatalities. The principle causes for the fatality increases are:

- Rider impairment (60 percent in single-vehicle and 37 percent in multi-vehicle crashes)
- Rider speeding (47 percent in multi-vehicle crashes)
- Inattention of motorcycle riders (18 percent in single-vehicle and 12 percent in multi-vehicle crashes)

- Right-of-way violations by other vehicles in multi-vehicle crashes (25 percent)

Most fatalities are among males and are single vehicle crashes, with the motorcycle leaving the roadway. In 2006, the Washington State Department of Licensing convened a Motorcycle Safety Task Force to assess the problems and to make recommendations. The recommendations focus on improving rider behavior and skill through training, public awareness, and accountability.⁹

Pedestrians

Even though the number of pedestrians killed in Washington State has declined in the past few years, pedestrian safety is still a concern. Between 2009 and 2011, 193 pedestrians were killed.

Pedestrian fatalities occurred more often:

- In urban areas (68.4 percent)
- Among adults 46 years of age or older (54.9 percent)
- Outside of crosswalks on roadways where crosswalks were available (65.3 percent)
- Among those impaired by alcohol or drugs (51.8 percent)

Older drivers

By 2030, at least 20 percent of Americans will be age 65 or older. Age itself does not determine driving capabilities, but older drivers can experience declines in their sensory, cognitive, and physical functioning that puts them at an increased risk of motor vehicle crashes. Also, their physical systems are generally less resilient. Because older drivers are more likely to have other health conditions, their risk of death or severe injury in a crash is higher than that of younger people.³

Drowsy drivers

In Washington State, between 2009 and 2011, drivers who were drowsy contributed to 3 percent of fatalities. This is likely to be an underestimate because of the difficulty identifying drowsy drivers. Rumble strips, cable median barriers, and encouraging the use of rest areas may help to reduce fatalities involving drowsy drivers.¹⁰

Bicyclists

In bicycle crashes, head injury is the most common cause of death and serious disability. Correctly wearing a bicycle helmet reduces the risk of head injury by 85 percent. Every year about 14 Washington residents die in a bicycle crash, and there are another 610 hospitalizations as a result of a bicycle crash.

For every dollar spent on bicycle helmets, \$30 is saved in direct medical costs. Data from the 2010 Washington Healthy Youth Survey show that 44 percent of 6th graders reported they wear a bicycle helmet either always or most of the time when they ride. However, by the 12th grade, only about 20 percent of students report wearing a helmet always or most of the time when riding.

Recommended Strategies

Evidence-Based Strategies

Reducing impaired driving

To reduce alcohol impaired driving, evidence-based strategies include a legal blood alcohol concentration limit for adult drivers of .08 percent, maintaining the minimum legal drinking age at 21 years, mass media campaigns, ignition interlocks, multi-component interventions with community mobilization, and using sobriety checkpoints.¹¹ In addition, it is recommended that school-based instructional programs include reducing riding with alcohol-impaired drivers. In Washington, sobriety checkpoints are illegal, and implementation would require legal changes.

Use of speed cameras

Studies show that the use of speed cameras reduces speed, road traffic injuries, and deaths. The amount of reduction in injury and death is difficult to determine because the studies used different methods.¹²

Increasing seatbelt use

To increase seatbelt use, it is recommended that laws mandate use, and that there are primary enforcement and enhanced enforcement programs. These programs increase enforcement at specific locations and times, and publicize this effort.¹³

Increasing use of child passenger restraints

To increase child safety seats, it is recommended that laws mandate use; that community-wide information is combined with enhanced enforcement; and that education programs are combined with distribution of child safety seats or incentives to buy the seats.¹⁴

Using Intermediate Drivers Licensing (IDL) laws

IDL laws help reduce the number of motor vehicle crashes, injuries, and deaths among young drivers.^{15,16} IDL laws with the following components provide the greatest benefit:

- Restriction of night time driving except for work, school, or other sanctioned activities
- Limit the number of teen passengers
- Encourage involvement and support by parents
- Mandate at least 50 hours of supervised driving, including at night, with a licensed adult driver prior to getting the IDL
- Understanding and consistent enforcement of the IDL law by law enforcement agencies

More strategies to encourage and enforce compliance with the law need to be developed. Such strategies need to include more effective education of teen drivers and their parents about:

- IDL restrictions
- Driving responsibilities
- Penalties
- Parental help with driving practice
- Proper restraint of everyone in the vehicle

Helmet laws

Motorcycle helmets reduce the risk of death and head injury in motorcycle riders who crash.¹⁷ Bicycle helmet laws appear to be effective in increasing helmet use and decreasing head injury rates in the populations for which they are implemented.¹⁸

Promising or Experimental Strategies

Use of traffic calming

Traffic calming in towns and cities might reduce the number of road traffic injuries and deaths.¹⁹ Traffic calming includes integration of roundabouts, neighborhood speed bumps, road surface treatment, and specific road designs to discourage speeding.

Drowsy drivers

The use of rumble strips to alert inattentive drivers when they deviate from their lane has limited evidence of decreasing crashes when used both on the edge and center of the lane.²⁰

Target Zero teams

Washington has implemented a Washington State Traffic Commission funded project in three populous counties to reduce impaired driving deaths and serious injuries. This enforcement and public information program involves concentrated state and local law enforcement teams whose sole mission is to stop and arrest impaired drivers. Results after two years exceed goals.

Older adults

There are several screening tests that might help determine driving ability for older drivers.²¹

Pedestrians

To prevent pedestrian injury in children, the best way is likely making changes to the roads.²²

Increase community capacity

Build community capacity with local people and organizations to address specific, local, traffic safety problems.

For More Information

Washington State

AAA Foundation for Traffic Safety
www.aaafoundation.org

Harborview Injury Prevention and Research Center
www.hiprc.org

Washington State Booster Seat Coalition
www.boosterseat.org
Spanish-language resources available

Washington State Safety Restraint Coalition (WSSRC)
www.800BUCKLUP.org

Washington Traffic Safety Commission (WTSC)
www.wtsc.wa.gov

National

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control
www.cdc.gov/ncipc

Insurance Institute for Highway Safety
www.iihs.org

National Highway Traffic Safety Administration (NHTSA)
www.nhtsa.gov

NHTSA Traffic Safety Marketing
<http://trafficsafetymarketing.gov/>

Traffic Injury Research Foundation
<http://trafficinjuryresearch.com/index.cfm>

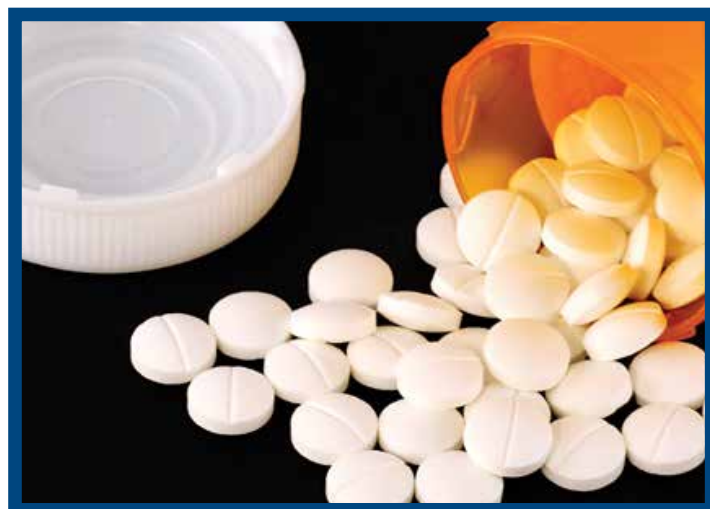
Endnotes

- ¹ Major trauma is that subset of injuries that encompasses the patient with or at risk for the most severe or critical types of injury and therefore requires a systems approach in order to save life and limb.
- ² Washington Traffic Safety Commission, *Washington State Highway Safety Performance Plan: Target Zero*, Olympia, WA: Washington Traffic Safety Commission, 2010, <http://targetzero.com/PDF/TargetZeroPlan.pdf>, accessed December 10, 2010.
- ³ E. R. Braver and R.E. Trempe, "Are older drivers actually at higher risk of involvement in collisions resulting in deaths or non-fatal injuries among their passengers and other road users?" *Injury Prevention*, 10; 27-32, 2004.
- ⁴ C.J. Kahane, *Fatality Reduction by Safety Belts for Front-Seat Occupants of Cars and Light Trucks*. Report Number DOT HS 809 199. Washington, DC: National Highway Transportation Safety Administration, 2000.
- ⁵ Washington Traffic Safety Commission, *Observed seat belt use rates in Washington counties*, Olympia, WA: Washington Traffic Safety Commission, 2012, <http://www-stage.wtsc.wa.gov/wp-content/uploads/downloads/2012/03/1986-2011-seat-belt-use-by-county.pdf>, accessed June 13, 2012.
- ⁶ E. Zaloshnja, T.R. Miller, and D. Hendrie, "Effectiveness of child safety seats vs. safety belts for children aged 2 to 3 years," *Archives of Pediatrics and Adolescent Medicine*, 161, 65-68, January 2007.
- ⁷ Washington Traffic Safety Commission, *2000 Survey of Passenger Restraint Use among Children*, Olympia, WA: Washington Traffic Safety Commission, 2001.
- ⁸ L.J. Paulozzi and R. Patel, R, "Trends in motorcycle fatalities associated with alcohol-impaired driving—United States—1983, 2003," *Morbidity and Mortality Weekly Report*, 53(47), 1103-1106, 2004.
- ⁹ Washington Department of Licensing, *Motorcycle Rider Safety Task Force Final Report, 2006*, www.dol.wa.gov/about/docs/mototaskforce.pdf, accessed on July 27, 2012.
- ¹⁰ B.C. Tefft, "Prevalence of motor vehicle crashes involving drowsy drivers, United States, 1999-2008," *Accid Anal Prev*. 45: 180-6, 2012.
- ¹¹ Guide to Community Preventive Services, "Motor Vehicle-Related Injury Prevention: Reducing Alcohol-Impaired Driving," www.thecommunityguide.org/mvoi/AID/index.html, accessed on June 13, 2012.
- ¹² C. Wilson et al, "Speed cameras for the prevention of road traffic injuries and deaths," *Cochrane Database Syst Rev*. 10:CD004607, 2010.
- ¹³ Guide to Community Preventive Services, "Motor Vehicle-Related Injury Prevention: Use of Safety Belts," www.thecommunityguide.org/mvoi/safetybelts/index.html, accessed on June 13, 2012.
- ¹⁴ Guide to Community Preventive Services, "Motor Vehicle-Related Injury Prevention: Use of Child Safety Seats," www.thecommunityguide.org/mvoi/childsafetyseats/index.html, accessed on June 13, 2012.
- ¹⁵ K.F. Russell et al, "Graduated driver licensing for reducing motor vehicle crashes among young drivers," *Cochrane Database Systematic Reviews*, 10:CD003300, 2011.
- ¹⁶ J.C. Fell et al, "An evaluation of graduated driver licensing effects on fatal crash involvements of young drivers in the United States," *Traffic Inj Prev*. 12(5):423-31, 2011.
- ¹⁷ B.C. Liu et al, "Helmets for preventing injury in motorcycle riders," *Cochrane Database Systematic Reviews*, 1:CD004333, 2008.
- ¹⁸ A. Macpherson and A. Spinks, "Bicycle helmet legislation for the uptake of helmet use and prevention of head injuries," *Cochrane Database Systematic Reviews*, 3:CD005401, 2008.
- ¹⁹ F. Bunn et al, "Area-wide traffic calming for preventing traffic related injuries," *Cochrane Database of Systematic Reviews*, 1, CD003110, 2003.
- ²⁰ J. Hatfield et al, "The effectiveness of audio-tactile lane-marking in reducing various types of crash: a review of evidence, template for evaluation, and preliminary findings from Australia," *Accid Anal Prev*. 41(3):365-79, 2009.
- ²¹ J.L. Mathias and L.K. Lucas, "Cognitive predictors of unsafe driving in older drivers: a meta-analysis," *Int Psychogeriatr*. 21(4):637-53, 2009.
- ²² C. DiMaggio and G. Li, "Roadway characteristics and pediatric pedestrian injury," *Epidemiol Rev*. 34(1):46-56, 2011.

DRUG POISONING AND OVERDOSE

DESCRIPTION:

Any product or substance, including medications, can be harmful if it is used in the wrong way, by the wrong person, or in the wrong amount. A poisoning can occur from that substance by eating, drinking, breathing, or injecting it, getting it on the skin, or getting it in the eyes. A drug overdose is considered a poisoning.



Washington State Goal Statement

To decrease deaths and hospitalizations due to unintentional poisoning

National Healthy People 2020 Objectives

- Prevent an increase in the rate of poisoning deaths from 13.1 per 100,000 in 2007.
- Prevent an increase in the rate of poisoning deaths among those 35 to 54 years old from 25.5 per 100,000 in 2007.
- Prevent an increase in the rate of unintentional and undetermined poisoning deaths from 11.1 per 100,000 in 2007.
- Prevent an increase in the rate of unintentional and undetermined poisoning deaths among those 35 to 54 years old from 21.6 per 100,000 in 2007.
- Prevent an increase in the rate of nonfatal poisonings from 304.4 per 100,000 in 2008.

Statement of the Problem in Washington State

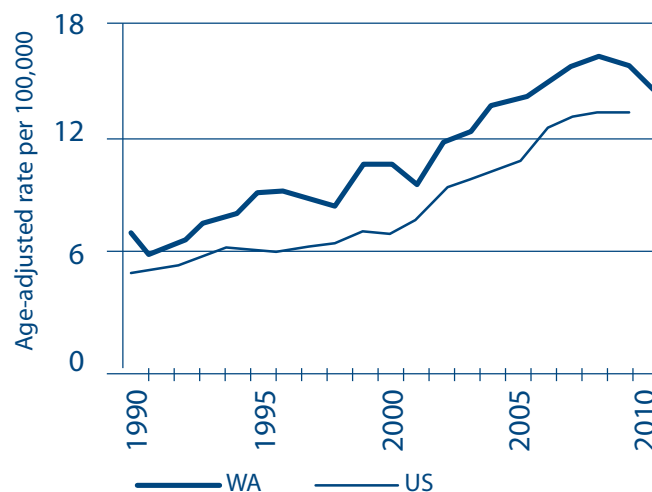
Washington State Data

In 2010, Washington State's poisoning death rate was 15 per 100,000. This was higher than the national death rate of 13 per 100,000.

In Washington State, poisoning is the first leading cause of unintentional injury-related death. It is the third leading cause of unintentional hospitalization. Over 90 percent of poisoning deaths in Washington State are due to drug overdoses. About 2 percent are due to alcohol poisoning.

Poisoning Deaths

Washington State & United States Death Certificates, 1990–2010

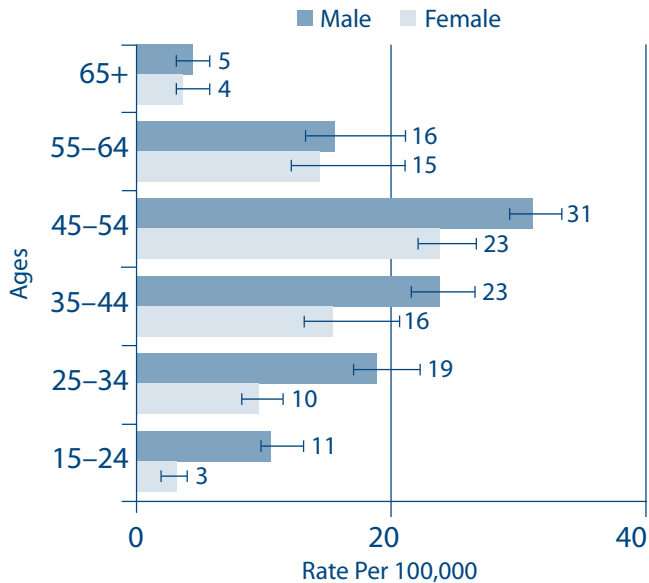


From 1990–2010, unintentional poisoning death rates have increased by 370 percent from 2.3 to 10.8 per 100,000. Suicide, homicide, and undetermined poisoning rates have remained stable. Because of these trends, the remainder of this chapter will focus on unintentional poisoning.

Age and Gender

From 2008–2010, males had higher unintentional poisoning death rates when compared to females. The highest death rates were among those 45–54 years old. The chart does not include age groups with fewer than 20 deaths. Children younger than 15 years of age had fewer than 20 deaths. The chart on the next page does not include these groups.

Unintentional Poisoning Deaths Age and Gender Washington State Death Certificates, 2008–2010

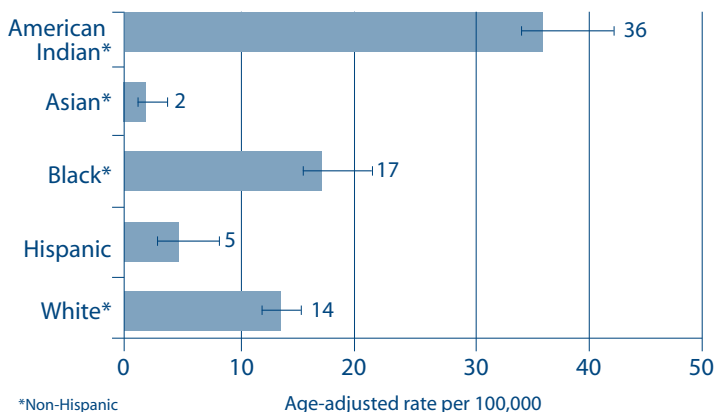


Race and Ethnicity

For 2007–2009, American Indians and Alaska Natives had the highest death rate for unintentional poisoning. African Americans had the next highest. Death rates for whites were in the middle, followed by people of Hispanic origin. Asians had the lowest rates.

Unintentional poisoning death rates are higher in low-income neighborhoods and among those with lower education.¹ Researchers have not studied the relative importance of race, Hispanic origin, poverty, and education on these rates.

Unintentional Poisoning Deaths Race and Ethnicity Washington State Death Certificates, 2007–2009



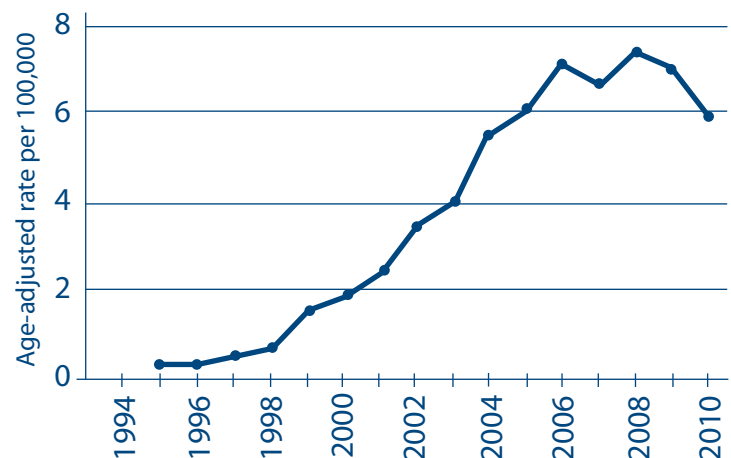
*Non-Hispanic

Increase in deaths is driven by prescription pain medications called opioids

Opioids are a prescription pain medication used to treat moderate to severe pain, examples include methadone, OxyContin® (oxycodone), or Vicodin® (hydrocodone). Prescription opioid involved overdoses are responsible for the increase in unintentional poisoning deaths.

In Washington State, prescription opioid involved overdose deaths increased from 0.4 per 100,000 in 1995 to 7.4 per 100,000 in 2008. The rate dropped to 6.0 per 100,000 in 2010. The three opioids most often involved in overdose deaths are methadone, oxycodone and hydrocodone. Methadone has been involved in the majority of the deaths. States with higher sales of prescription opioids have higher rates of overdose deaths.²

Prescription Opioid Involved Overdose Deaths Washington State Death Certificate Data, 1995–2010



Youth Drug Use

In the 2010 Healthy Youth Survey, 4 percent of 8th graders (about 3,300 students) had used opioids to get high in the past 30 days. Of 10th and 12th graders, 8 percent (about 13,200 students) had used these drugs to get high.

Native American students reported more abuse of prescription opioids compared to other race groups. Students who lived in rural, urban, and suburban areas of the state had similar levels. The students who reported abuse of prescription opioids tended to have lower socioeconomic status. They reported lower quality of life, lower grades, and did not enjoy school as much as their peers. Students who abused prescription opioids were more likely to participate in other risky behaviors such as drinking and driving.

Most of these youth got their drugs from a friend or acquaintance (35 percent) and 25 percent had their own prescriptions (from a doctor or dentist). Other sources include:

- 15 percent from their own or someone else's home without permission
- 9 percent from a family member
- 8 percent from other sources
- 7 percent from a drug dealer
- 1 percent from the internet

Substance Abuse Treatment Admission Data and Transition from Prescription Opioids to Heroin

From 2003–2010 in Washington, public-funded substance abuse treatment admissions for prescription opioid abuse increased four-fold. Admissions then declined about 10 percent between 2010 and 2011. Admissions included public pay clients in inpatient, outpatient, and methadone maintenance treatment.

Prescription opioids appear to be a pathway to heroin for many users. In one study, 39 percent of heroin injectors in Seattle reporting being “hooked on” prescription-type opioids before trying heroin in 2009.³ These data are the first to address this issue after years of anecdotal reports from local service providers about the transition from prescription opioids to heroin.

There are several indicators showing that heroin use has increased in recent years. Substance abuse treatment admissions for heroin as the primary drug doubled from 2003–2011. The biggest increase was seen from 2010–2011, when there was a 25 percent increase in treatment admissions. In addition, police evidence in which heroin was seized doubled between 2000 and 2009.

Poison Control Center – Other Poisonings

In 2011, the Washington State Poison Control Center received about 60,000 calls for advice about a possible poisonous exposure to a human. Over 78 percent of the exposures were managed over the telephone and did not need to be seen by a healthcare provider. Almost 52 percent of the incidents occurred to a child under six years. The most common substances involved in possible exposures are pain medications, personal care products, cosmetics, and household cleaning substances.

Risk Factors for Prescription Opioid Overdose Death

Poverty

Among non-Hispanic whites, there is a strong link between the increase in overdose deaths and percentage of the population below poverty.²

Medicaid clients

Medicaid clients are six times more likely to have a fatal overdose involving prescription opioids. They are also twice as likely to receive an opioid prescription compared to non-Medicaid clients.⁴

High daily doses

Patients receiving a high daily dose of opioids are at an increased risk of a fatal overdose.^{5,6}

Receiving prescriptions from multiple providers and multiple pharmacies

The percent of patients using multiple prescribers and pharmacies is relatively low. Those that do are at increased risk of overdose.^{6,7,8}

Use of multiple prescription drugs

Most people who died of an overdose involving prescription opioids had taken other drugs right before their death. The most common prescription drugs taken in combination with opioids are anti-anxiety medications and antidepressants.^{9,10}

History of substance abuse or other mental health issues

A history of substance abuse or other mental illness are both risk factors for an overdose.^{11,12}

Increase in Prescribing of Opioid Pain Relievers

At the end of the 1990s, various groups in Washington began to recognize opioids as important for treating chronic, non-cancer pain. New policies were developed. These new policies reflected a major shift in thinking. They were based on low-grade evidence that patients were under-treated for pain and there was a low risk of addiction while taking opioids long-term.

Prescription opioid sales and prescribing increased dramatically after this policy change. Opioid prescribing increased from 5.5 milligrams (mg) morphine equivalents per person in 1997 to 28.5 mg in 2006.¹³

The workers' compensation system also saw prescribing of more potent opioids and a higher dose per prescription. Prescriptions for the most potent opioids (Schedule II) increased about three fold between 1996

and 2006. Prescriptions plateaued from 2006–2008 and declined in 2009 and 2010. Prescribing of lower potency opioids (Schedule III) opioids increased from 1996 to 1999 and declined from 1999 to 2010.¹⁴

Among long-acting opioids, the average daily dose increased by 50 percent between 1996 and 2002. In 2002, the average dose was 132 mg per day. The average dose was relatively stable between 2002 and 2006, and then started declining. In 2010, it had declined to 105 mg per day.

Misuse of prescription opioids

People get prescription opioids from different sources:

- From a friend or relative with a prescription
- From a healthcare provider
- Purchased on the street or from the internet
- Stolen from pharmacies

People can misuse prescription opioids in several different ways. Misuse includes taking more than the prescribed dose, taking them without a prescription or combining them with illicit drugs or alcohol.

The estimated number of emergency department (ED) visits for non-medical use of opioids more than doubled from 2004 to 2008. There were about 305,900 visits in 2008.¹⁵ Nationally, in 2009, there were 1.1 million ED visits involving prescription or over-the-counter drugs. This is more than the number of visits

for illegal drugs. Pain relievers were the most common type of drug misused. These accounted for about half of all non-medical prescription drug use visits. About half of these ED visits involved the use of multiple drugs.

Trends in Non-medical Use of Prescription Pain Medications

Nationally in 2010, 2 million people aged 12 years old or older took prescription pain drugs non-medically for the first time. Non-medical use of prescription pain drugs had the second highest number of new users out of all illicit drugs. There were 5 million current non-medical users of prescription pain drugs.¹⁶

About 6 percent of Washington residents age 12 years old or older use prescription pain drugs non-medically. This is about 342,000 people. Washington State has the 4th highest rate of residents using prescription pain drugs in a non-medical way in the U.S.¹⁷

Non-medical users of prescription pain drugs most commonly (about 55 percent) got them “from a friend, or relative, or for free.” Other sources include:

- About 17 percent from a doctor
- 16 percent either bought them or took them from a friend or relative
- 5 percent from a drug dealer
- 0.4 percent purchased from the internet¹⁶

Recommended Strategies

To date, no one has systematically evaluated interventions to prevent prescription opioid abuse or overdose deaths. The Centers for Disease Control and Prevention (CDC) released promising policy recommendations.¹⁸

Evidence-Based Strategies

Continue and expand the Washington State Screening, Brief Intervention, Referral and Treatment (WASBIRT) program.

Up to 50 percent of trauma patients seen in an emergency department (ED) had been using alcohol and/or other drugs prior to admission.¹⁹ As a means to prevent unintended poisoning, EDs are ideal settings to identify and intervene in drug-seeking behaviors.

A screening and brief intervention program screens patients for alcohol or drug misuse, abuse, or addiction in any healthcare setting. The majority of the screening occurs in emergency departments. Depending on a patient’s risk, they receive screening and feedback, brief intervention, brief treatment, or a referral to substance abuse treatment as appropriate.

An evaluation project of the WASBIRT Program, which took place from 2004–2008, showed significant positive outcomes. These included reduced substance use, medical costs, and risk of death. The evaluation also found improvements in social and mental health and an increase in abstinence. These outcomes were seen across all interventions.²⁰

Promising or Experimental Strategies

Strategies Underway in Washington State

Electronic Prescription Monitoring Program for controlled substances

A Prescription Monitoring Program (PMP) is a database used to track controlled substance prescribing and dispensing to patients. The Department of Health coordinates the program in Washington State.

Washington State's PMP goals are to:

- Give practitioners an added tool in patient care
- Allow prescribers and dispensers to have more information when making decisions
- Get those who are addicted into proper treatment
- Help stop prescription overdoses
- Educate the population on the dangers of misusing prescription drugs
- Make sure that those who do need scheduled prescription drugs receive them
- Curb the illicit use of prescription drugs

CDC's goals of a PMP are to:

- Limit access of controlled substances to only those with legitimate medical needs
- Track instances in which controlled substances are being obtained from multiple prescribers
- Identify suspected controlled substance abusers and steer them into treatment

CDC recommends that states with a PMP focus their resources on:

- Patients at high risk of an overdose. Risk may be due to high dose, being prescribed many controlled substances, or getting prescriptions from different prescribers.
- Providers who clearly deviate from accepted medical practice in their prescribing patterns. This includes dosage, number of controlled substance prescriptions, and proportion of their patients who are 'doctor shoppers'.¹⁸

In Washington State, the PMP began collecting data in October 2011. Provider access started in January 2012.

Healthcare provider accountability

CDC recommends that states ensure that providers follow evidence-based guidelines for safe and effective use of prescription opioids. It also recommends that states take regulatory action against providers not following these guidelines.¹⁸

The 2010 Washington State Legislature passed a bill directing five healthcare provider boards and commissions to adopt rules for management of chronic, noncancer pain with opioids. The rules became effective on either June 2011 or January 2012 for different types of providers. The rules require providers to follow best practices in pain management. The goal of these rules is better treatment, not less treatment.

Washington State's chapter of the American College of Emergency Physicians published guidelines for prescribing opioids from the Emergency Department (ED) in June 2011.²¹ The guidelines encourage prudent opioid prescribing. The 2012 state budget included a budget proviso which encourages all EDs to adopt these guidelines.

Establish a patient review and coordination (PRC) program

CDC recommends that state benefit programs, such as Medicaid, should consider monitoring prescription claims and PMP data for signs of inappropriate use of controlled substances. These programs should consider restricting reimbursement for controlled substances to a single provider and pharmacy in certain cases.

In Washington, Medicaid expanded their PRC program in 2005. The PRC program conducts reviews to identify inappropriate use of services, including opioids. PRC program clients are restricted to one primary care provider, one opiate prescriber, one pharmacy, or one hospital. The PRC program has seen significant savings associated with the program. The program has also shown declines in ED visits, physician visits, and number of prescriptions.²²

Better access to substance abuse treatment

Effective, accessible substance abuse treatment programs could reduce overdose among people struggling with dependence and addiction.

Laws to prevent prescription drug abuse and diversion

Enacting and enforcing laws to prevent doctor shopping and the operation of rogue pain clinics (or 'pill mills') might reduce prescription opioid diversion and abuse while safeguarding access to needed pain management services.

Naloxone distribution programs

Naloxone hydrochloride is the treatment of choice to reverse a potentially fatal opioid overdose. There are 50 Naloxone distribution programs throughout the U.S. These programs have received reports of over

10,000 overdose reversals. The main focus of Naloxone distribution programs has been to injection-drug users through needle exchange programs. More recently several programs have prescribed Naloxone to high risk patients receiving prescription opioids.²³

For More Information

Washington State

Pain Management Rules

www.doh.wa.gov/PublicHealthandHealthcareProviders/HealthcareProfessionsandFacilities/PainManagement.aspx
and

www.doh.wa.gov/PublicHealthandHealthcareProviders/HealthcareProfessionsandFacilities/PainManagement/AdoptedRules.aspx

Patient Review and Coordination Program

<http://maa.dshs.wa.gov/PRR>

Prescription Monitoring Program

www.doh.wa.gov/hsqa/PMP/default.htm

Recovery Help Line 1-866-789-1511

www.crisisclinic.org/WARECOVERYHELPLINE/index.html

Take As Directed

www.doh.wa.gov/YouandYourFamily/PoisoningandDrugOverdose/TakeAsDirected.aspx

National

Centers for Disease Control and Prevention, Prescription Painkiller Overdoses

www.cdc.gov/homeandrecreationalsafety/rxbrief/index.html

National Institute on Drug Abuse: Easy to Read Drug Facts

www.easyread.drugabuse.gov

Office of National Drug Control Policy: Prescription Drug Abuse

www.whitehouse.gov/ondcp/prescription-drug-abuse

Physicians for Responsible Opioid Prescribing

<http://responsibleopioidprescribing.org/>

Substance Abuse and Mental Health Services Administration

www.samhsa.gov/rxsafety/

Endnotes

- ¹ Washington State Department of Health, Health of Washington State, Poisoning & Drug Overdose chapter in Injury and Violence Section, www.doh.wa.gov/hws, accessed on January 10, 2008.
- ² L.J. Paulozzi et al., "Vital Signs: Overdoses of Prescription Opioid Pain Relievers – United States, 1999–2008," *MMWR*, 2011, Vol. 60, No. 43, pp. 1487–1492.
- ³ C. Banta-Green and M. Brunner, "Opiate Use and Negative Consequences in Washington State," 2011, <http://adai.uw.edu/pubs/infobriefs/ADAI-IB-2011-03.pdf>, accessed on May 24, 2012.
- ⁴ Centers for Disease Control and Prevention, "Overdose deaths involving prescription opioids among Medicaid enrollees – Washington, 2004–2007," *MMWR*, 2009, Vol. 31, pp. 506–511.
- ⁵ K.M. Dunn et al., "Opioid prescriptions for chronic pain and overdose," *Ann Intern Med*, 2010, Vol. 152, pp. 85–92.
- ⁶ L.J. Paulozzi et al., "A history of being prescribed controlled substances and risk of drug overdose death," *Pain Med*, 2012; Vol. 13, pp. 87–95.
- ⁷ A.G. White et al., "Analytic models to identify patients at risk for prescription opioid abuse," *Am J Manag Care*, 2009, Vol. 15, pp. 897–906.
- ⁸ N. Katz et al., "Usefulness of prescription monitoring programs for surveillance – analysis of schedule II opioid prescription data in Massachusetts, 1996–2006," *Pharmacoepidemiol Drug Saf*, 2010, Vol. 19, pp. 115–123.
- ⁹ M.J. Wunsch et al., "Opioid deaths in rural Virginia: a description of the high prevalence of accidental fatalities involving prescribed medications," *Am J Addictions*, 2009, Vol. 18, pp. 5–14.
- ¹⁰ A.J. Hall et al., "Patterns of abuse among unintentional pharmaceutical overdose fatalities," *JAMA*, 2008, Vol. 300, pp. 2613–2620.
- ¹¹ L.J. Paulozzi et al., "A comparison of drug overdose deaths involving methadone and other opioid analgesics in West Virginia."
- ¹² R.L. Toblin et al., "Mental illness and psychotropic drug use among prescription drug overdose deaths; a medical examiner chart review," *J Clin Psychiatry* 2101, Vol. 71, pp. 491–496.
- ¹³ Drug Enforcement Administration Automation of Reports and Consolidated Orders System, data include medications prescribed and dispensed. Comparable data are not available after 2006. Calculated using an estimated daily dose and population data.
- ¹⁴ G.M. Franklin et al., "Bending the prescription opioid dosing and mortality curves: impact of the Washington State Opioid Dosing Guideline," *Am J Industrial Med*, 2011, doi: 0.1002/ajim.21998.
- ¹⁵ R. Cai et al., "Emergency Department Visits Involving Nonmedical Use of Selected Prescription Drugs—United States, 2004–2008," *MMWR*, 2010, Vol. 59, No. 23, pp. 705–709.
- ¹⁶ Substance Abuse and Mental Health Services Administration, "Results from the 2010 National Survey on Drug Use and Health: National Findings," 2011, www.samhsa.gov, accessed on February 23, 2012.
- ¹⁷ Substance Abuse and Mental Health Services Administration, "State Estimates of Substance Use and Mental Disorders from the 2008–2009 National Surveys on Drug Use and Health," 2011, NSDUH Series H-40, HHS Publication No. (SMA) 11-4641, Rockville, MD, www.samhsa.gov/data/2k9State/Cover.htm, accessed on February 24, 2012.
- ¹⁸ Centers for Disease Control and Prevention, "Policy Impact: Prescription Painkiller Overdoses," 2011, www.cdc.gov/homeandrecreationsafety/rxbrief/index.html, accessed on February 24, 2012.
- ¹⁹ L.M. Gentilello et al., "Alcohol interventions in a trauma center as a means of reducing the risk of injury recurrence," 1999, *Annals of Surgery*, Vol. 230, No. 4, pp. 473–483.
- ²⁰ S. Estee and A. Huber, "Washington State Screening, Brief Intervention, and Referral to Treat Program. Final Report," July 2010, Department of Social and Health Services, Research and Data Analysis Division, Olympia, WA, www.dshs.wa.gov/pdf/ms/rda/research/4/83.pdf, accessed on March 2, 2012.
- ²¹ Washington chapter of American College of Emergency Physicians, "Prescription pain medication guidelines," <http://washingtonacep.org/painmedication.htm>, accessed on May 24, 2012.
- ²² P. Coolen, "Patient Review and Coordination Program," 2009, www.safestates.org/displaycommon.cfm?an=1&subarticlenbr=204, accessed on March 14, 2012.
- ²³ E. Wheeler et al., "Community-based opioid overdose prevention programs providing Naloxon—United States, 2010," *MMWR*, 2012, Vol. 61, No. 6, pp. 101–105.

SUICIDE

DESCRIPTION:

Suicide means the intentional killing of oneself. Attempted suicide means trying to kill oneself without completing suicide.



Washington State Goal Statement

To decrease deaths and hospitalizations due to suicide and suicide attempts

National Healthy People 2020 Objectives

- Reduce the suicide rate from 11.3 in 2007 to no more than 10.2 per 100,000.
- Reduce the rate of suicide attempts by adolescents in grades 9–12 from 1.9 in 2009 to 1.7 per 100,000.

Statement of the Problem in Washington State

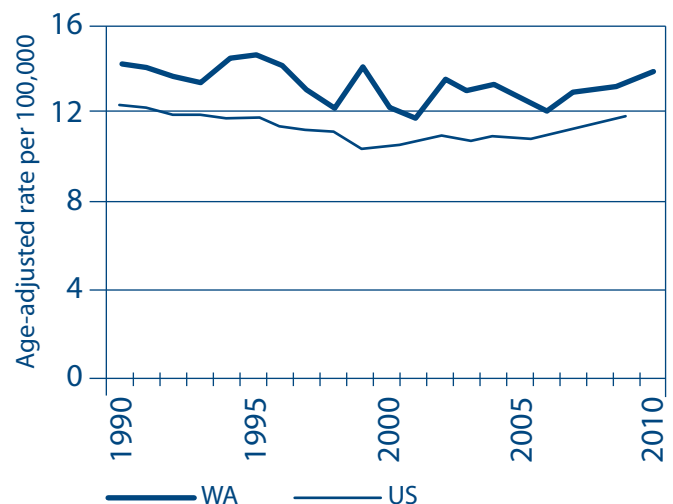
Washington State Data

In 2010, 947 Washington State residents committed suicide or died from self-inflicted injury. Suicide is the eighth leading cause of death for residents of all ages and the second leading cause among youth ages 15–24.

In 2010 in Washington State, the leading suicide methods were: firearms (49 percent), poisoning (22 percent), and suffocation (19 percent).

Between 1990 and 2010, there was a slight decline in Washington State's suicide rate. This decline is the result of higher suicide rates during the 1990s, and lower rates during most of the 2000s. In 2009, the U.S. suicide rate was 12 per 100,000. Washington State's rate in the same year was 14 per 100,000. This is consistent with the national finding that suicide rates are generally higher than the national average in the states west of the Rocky Mountains.¹

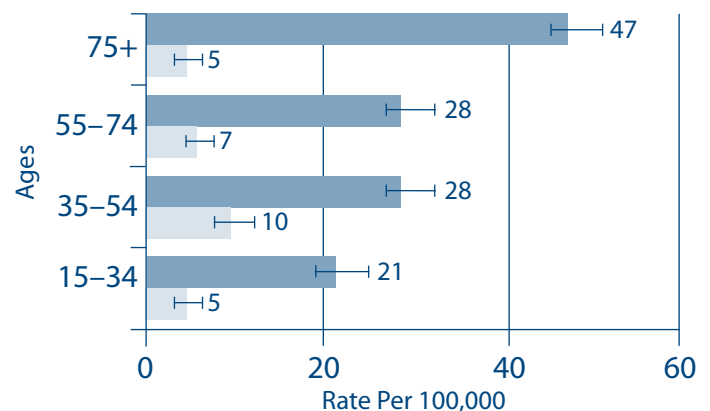
Suicide Deaths
Washington State & United States Death Certificates, 1990–2010



Age and Gender

From 2008–2010, men accounted for 78 percent of completed suicides. Men ages 75 and older had the highest suicide rates. Although older men's rates are

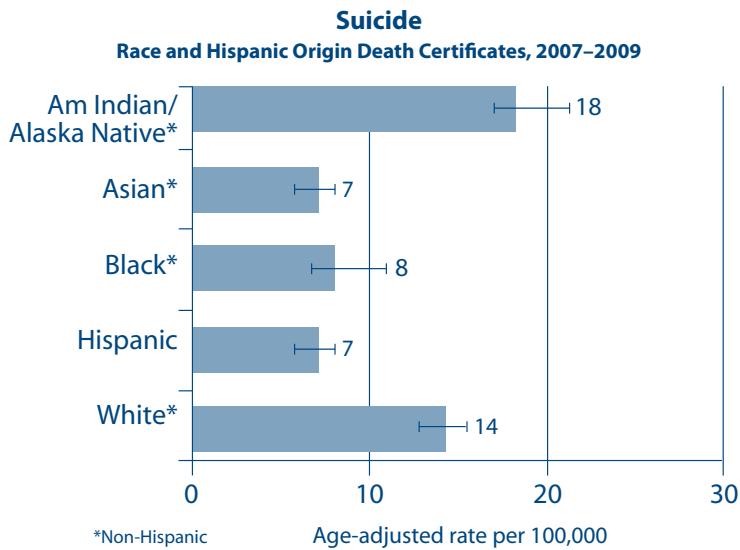
Suicide
Age and Gender Death Certificates, 2008–2010



the highest, men ages 35–54 have the highest number of suicides. The chart does not include age groups with fewer than 20 deaths.

Race and Ethnicity

In 2007–2009, age-adjusted suicide rates were highest for American Indians and Alaska Natives, and then whites. The interactions of race, ethnicity, poverty, and education for suicide have not been widely researched.



Non-fatal Suicide Attempts

In 2010, there were 3,730 hospitalizations in Washington for nonfatal suicide attempts. Women had a higher rate of hospitalizations for suicide attempts (69 per 100,000) compared to men (43 per 100,000).

In the 2010 Healthy Youth Survey, 18 percent of Washington State 10th graders reported they had seriously considered attempting suicide in the past year; 12 percent reported having a plan for their suicide attempts.

Washington adults, age 18 or older, were more likely to have serious suicidal thoughts (5 percent) in 2008–2009 compared to the national average. They were also more likely to make a plan (1.4 percent) or attempt suicide (0.7 percent). The West and Midwest had higher prevalence compared to other regions of the U.S.²

Depression Data

Depression contributes to suicide. In 2010, about 30 percent of 10th graders (about 24,000 youth) reported that at some point in the past year they had been depressed. These youth reported that they had been sad or hopeless almost every day for two weeks or more in a row. As a result of these feelings, they stopped doing their usual activities. About 15 percent of 10th graders,

or around 12,000 youth, reported having no adults to turn to when they were depressed. About 42 percent of these youth reported they would be very unlikely to seek help if they were feeling depressed or suicidal. This translates to about 5,000 youth who would not seek help for themselves.

Risk and Protective Factors

The U.S. Department of Health and Human Services included a comprehensive list of suicide risk and protective factors in the Surgeon General's 2012 National Strategy for Suicide Prevention.³

The 2012 Surgeon General's report addresses risk factors related to populations at higher risk. Risks associated with suicide and suicidal behaviors include:

- Individuals with mental and/or substance use disorders
- Individuals bereaved by suicide
- Individuals in justice and child welfare settings
- Individuals who engage in nonsuicidal self-injury
- Individuals who have attempted suicide
- Individuals with medical conditions
- Individuals who are lesbian, gay, bisexual, or transgender (LGBT)
- Individuals with easy access to lethal methods
- Individuals with family history of suicide
- Individuals in high conflict or violent relationships
- Individuals with barriers to healthcare (e.g., lack of access to providers or medication)
- Individuals with few available sources of supportive relationships
- American Indians/Alaska Natives
- Members of the Armed Forces and veterans
- Men in midlife
- Older men

Protective factors for suicide include:

- Effective clinical care for mental, physical, and substance abuse disorders
- Easy access to a variety of clinical (including mental health) services and support
- Social connectedness, and family and community support
- Support from ongoing medical and mental healthcare relationships
- Skills in problem solving, conflict resolution, and nonviolent handling of disputes
- Cultural and religious beliefs that discourage suicide and support self-preservation instincts

The Surgeon General's 2012 National Strategy for Suicide Prevention³ recommends a comprehensive approach to prevent suicide. This includes promoting health and empowerment, implementing clinical and community preventive services, and improving treatment and support. The National Strategy also states that suicide has many of the same risk and

protective factors as interpersonal violence and other related problems. Therefore, efforts to address suicide risk and protective factors are also likely to help prevent these other problems as well. Two recent reports developed in 2010⁴ and 2011⁵ provide recommendations on the latest strategies for suicide prevention.

Recommended Strategies

Promising Strategies

Increasing awareness of suicide risk factors and how to respond

It is recommended that public and healthcare providers be made more aware of suicide and its risk and protective factors. Messages should focus on promoting help-seeking behavior and available resources. Messages should also emphasize that mental illness is treatable. Since no single message works for everyone, awareness campaigns should be tailored to many different audiences. An example is the Toolkit on Suicide Prevention for Senior Living Communities.⁶ Awareness efforts are likely to be more effective when used as part of a comprehensive suicide prevention program.

"Gatekeepers" are community members or professionals, such as teachers and nurses, who have contact with people at risk for suicide. Improving the ability of gatekeepers to recognize the signs, and respond to suicide risk, supports early intervention. Counselors Care and Coping and Support Training (C-care/Cast)^{7,8} is recognized as an effective school-based program to decrease suicide risk factors and increase protective factors. Training military personnel and doctors has reduced suicidal ideation, suicide attempts and deaths.⁹ Washington State recently passed legislation requiring certain health professionals to complete suicide prevention training as part of licensing requirements.¹⁰

Promoting protective factors

Several promising strategies focus on strengthening suicide protective factors such as social connectedness and problem-solving skills. Examples include school-based programs such as American Indian Life Skills Development, CAST (Coping And Support Training), and Reconnecting Youth. These programs provide education and skill-building activities over multiple

sessions. Outcomes include reduced depression, hopelessness, anger and anxiety, lower drug involvement, and improved self-esteem and social support.^{11, 8, 12}

Crisis call centers

The National Suicide Prevention Lifeline (1-800-273-TALK) serves as a central switchboard connecting callers to their local crisis center. One study found that crisis call hotlines were effective in reducing emotional distress among crisis callers.¹³ They also significantly reduced suicidality among suicidal callers. The quality of services provided has been shown to vary across centers. Standards for suicide risk assessment might help ensure that all callers receive quality service.¹⁴

Restricting access to lethal means

Many people who attempt suicide are unsure about it or are acting on an impulse during a short period of crisis.¹⁵ Those who have easy access to a highly lethal weapon, such as a firearm, are at higher risk for completed suicide.¹⁶ For these reasons, the National Strategy for Suicide Prevention promotes reducing access to lethal means. Two evidence-based programs have been shown to be effective in the emergency department setting. One program provides lethal means restriction education for parents of youth who are seen in emergency departments for mental health assessment or treatment.¹⁷ The other program is a multi-component intervention for female adolescent suicide attempters and their mothers.¹⁸

System changes

Some promising new strategies have combined organizational culture change, staff training and systems change for suicide prevention. Organizational culture change is needed to reinforce the idea that suicide can be prevented and encourage implementation of prevention programs.

Here are two examples:

The Henry Ford Health System implemented several system changes to prevent suicide among its members. They began universal suicide risk screening in their primary care clinics and created care plans based on patients' risk. They increased partnership with patients for treatment planning and care. They also improved access to immediate psychiatric care for patients in need. Clinicians were provided with increased training in Cognitive Behavioral Therapy. Within four years of implementing these changes, the suicide rate among its members had dropped by 75 percent.¹⁹

The Air Force Suicide Prevention Initiative created a culture change in the Air Force that dropped the suicide rate by one-third over six years. Strategies included clear and consistent communication from committed top leadership and training for all members. They also created privileged communication rights for members and encouraged mutual responsibility.²⁰

Improving access to mental health services

Healthcare providers should be aware of community resources for treating substance abuse, depression, and other mental illness. An example of a suicide prevention program for primary care providers that shows promise is PROSPECT.^{21, 22} PROSPECT provides guidelines for treatment and care management for adults ages 60 and older diagnosed with depression. Co-management of high risk patients by mental health and primary care physicians²³ is another promising practice. Integrating suicide prevention treatment with substance abuse treatment has also shown promise in reducing suicide. 2010 federal legislation made mental health benefits equitable with other medical benefits within group health insurance plans. This made mental health services more affordable.

For More Information

Washington State

Washington State Healthy Youth Survey

www.doh.wa.gov/DataandStatisticalReports/HealthBehaviors/HealthyYouthSurvey.aspx

Washington State Department of Health, Health of Washington State

www.doh.wa.gov/DataandStatisticalReports/HealthofWashingtonStateReport.aspx

Washington State Department of Health, Youth Suicide Prevention

www.doh.wa.gov/YouandYourFamily/InjuryandViolencePrevention/YouthSuicidePrevention.aspx

Washington State Youth Suicide Prevention Program

www.yspp.org

National

Centers for Disease Control, Preventing Suicide

www.cdc.gov/ViolencePrevention/suicide/index.html

Kids Health, *Understanding and Preventing Teen Suicide*

www.kidshealth.org/parent/emotions/behavior/suicide.html

National Adolescent Health Information Center

<http://nahic.ucsf.edu/downloads/Suicide.pdf>

National Suicide Prevention Lifeline: 1-800-273-TALK

Suicide Prevention Resource Center

www.sprc.org

National Institute of Mental Health

www.nimh.nih.gov

National Mental Health Association

www.thenationalcouncil.org/

National Suicide Prevention Lifeline: 1-800-273-TALK

National Strategy for Suicide Prevention

www.samhsa.gov/prevention/suicide.aspx

Endnotes

- ¹ Division of Violence Prevention, Centers for Disease Control and Prevention, Regional Variations in Suicide Rates—United States, 1990-1994. *MMWR*, 1997, Vol. 46, No. 34, pp. 789-793.
- ² A.E. Crosby et al., "Suicidal thoughts and behaviors among adults aged ≥18 years—United States, 2008-2009," *MMWR*, 2011, Vol. 60, No. 13, pp. 1-22.
- ³ Department of Health and Human Services (HHS) Office of the Surgeon General and National Action Alliance for Suicide Prevention, *2012 National Strategy for Suicide Prevention: Goals and Objectives for Action*, 2012, Washington, DC.
- ⁴ Charting the Future of Suicide Prevention, 2010, www.sprc.org/sites/sprc.org/files/library/ChartingTheFuture_Fullbook.pdf, accessed on May 1, 2012.
- ⁵ Suicide Care in Systems Framework, 2011, <http://actionallianceforsuicideprevention.org/sites/actionallianceforsuicideprevention.org/files/taskforces/ClinicalCareInterventionReport.pdf>, accessed on May 1, 2012.
- ⁶ Substance Abuse and Mental Health Services Administration, *Toolkit on Suicide Prevention for Senior Living Communities*, 2010, <http://content.govdelivery.com/bulletins/gd/USSAMHSA-6e9b8>, accessed on June, 2012.
- ⁷ L.L. Eggert et al., "A measure of adolescent potential for suicide (MAPS): Development and preliminary findings," 1994, *Suicide and Life-Threatening Behavior*, Vol. 24, pp. 359-381.
- ⁸ E.A. Thompson et al., "Evaluation of indicated suicide risk prevention approaches for potential high school dropouts," 2001, *American Journal of Public Health*, Vol. 91, No. 5, pp. 742-752.
- ⁹ M. Isaac et al., Swampy Creek Suicide Prevention Team, "Gatekeeper Training as a Preventive Intervention for Suicide: A Systematic Review," 2009, *La Revue Canadienne de Psychiatrie*, Vol. 54, No. 4, pp. 260-267.
- ¹⁰ Summary of bill found at <http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2366&year=2011>.
- ¹¹ T. LaFromboise & Howard-Pitney, B, "The Zuni Life Skills Development curriculum: Description and evaluation of a suicide prevention program," 1995, *Journal of Counseling Psychology*, Vol. 42, No. 4, pp. 479-486.
- ¹² L.L. Eggert et al., "Reducing suicide potential among high-risk youth: Tests of a school-based prevention program," 1995, *Suicide and Life-Threatening Behavior*, Vol. 25, No. 2, pp. 276-296.
- ¹³ M.S. Gould et al., "An Evaluation of Crisis Hotline Outcomes: Part 2: Suicidal Callers," 2007, *Suicide and Life-Threatening Behavior*, Vol. 37, No. 3, pp. 338-352.
- ¹⁴ T. Joiner et al., "Establishing Standards for the Assessment of Suicide Risk among Callers to the National Suicide Prevention Lifeline," 2007, *Suicide and Life-Threatening Behavior*, Vol. 37, No. 3, pp. 353-365.
- ¹⁵ O.R. Simon et al., "Characteristics of Impulsive Suicide Attempts and Attempters," 2001, *Suicide and Life-Threatening Behavior*, Vol. 32 (Suppl.), pp. 49-59.
- ¹⁶ A.L. Beautrais et al., "Access to Firearms and the Risk of Suicide: A Case Control Study," 1996, *Australian and New Zealand Journal of Psychiatry*, Vol. 30, pp. 741-748.
- ¹⁷ M.J.P. Kruesi et al., "Suicide and violence prevention: Parent education in emergency department," 1999, *Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 38, No. 3, pp. 250-255.
- ¹⁸ M.J. Rotheram-Borus et al., "The 18-month impact of an emergency room intervention for adolescent female suicide attempters," 2000, *Journal of Counseling and Clinical Psychology*, Vol. 68, No. 6, pp. 1081-1093.
- ¹⁹ B.K. Ahmedani et al., "Suicide thoughts and attempts and psychiatric treatment utilization: informing prevention strategies," 2012, *Psychiatr Serv*, Vol. 63, No. 2, pp. 186-189.
- ²⁰ K.L. Knox et al., "Risk of suicide and related adverse outcomes after exposure to a suicide prevention programme in the US Air Force: cohort study," 2003, *BMJ*, Vol. 327, No. 7428, p. 1376.
- ²¹ H.C. Schulberg et al., the PROSPECT Group, "Managing late-life depression in primary care practice: A case study of the Health Specialist's role," 2001, *International Journal of Geriatric Psychiatry*, Vol. 16, pp. 577-584.
- ²² B.H. Mulsant et al., PROSPECT Study Group, "Pharmacological treatment of depression in older primary care patients: The PROSPECT algorithm," 2001, *International Journal of Geriatric Psychiatry*, Vol. 16, pp. 585-592.
- ²³ Western Interstate Commission for Higher Education (WICHE) Mental Health Program and Suicide Prevention Resource Center, 2009, "Suicide Prevention Toolkit for Rural Primary Care," www.sprc.org/library/primer.pdf, accessed on September 17, 2012.

VIOLENCE:

SEXUAL VIOLENCE, DOMESTIC VIOLENCE, AND BULLYING

DESCRIPTION:

Sexual violence, domestic violence, and bullying are a range of acts which involve expressions of power and control. Sexual violence is any sexual act that is committed against someone's will. Domestic violence is a pattern of assault and coercion, including physical, sexual and psychological abuse, as well as economic coercion, that adults or adolescents use against their intimate partners. Bullying is when a person or group repeatedly tries to physically or emotionally harm someone who is weaker or who they think is weaker.



Washington State Goal Statement

Reduce all forms of sexual violence, intimate partner (domestic) violence, and adolescent bullying

National Healthy People 2020 Objectives

All of these objectives, except for reducing bullying among adolescents are considered developmental. Developmental objectives do not yet have national baseline data, although they have a dedicated data source that will ultimately provide baseline data.

- Reduce rape or attempted rape.
- Reduce abusive sexual contact other than rape or attempted rape.
- Reduce non-contact sexual abuse.
- Reduce sexual violence by current or former intimate partners.
- Reduce physical violence by current or former intimate partners.
- Reduce psychological abuse by current or former intimate partners.
- Reduce stalking by current or former intimate partners.
- Reduce bullying among adolescents from 19.9 percent of students in grades 9–12 reporting bullying on school property in the past year in 2009 to 17.9 percent.

Statement of the Problem in Washington State

Sexual and Domestic Violence

Sexual violence involves the use of threats, force, violence, or any other form of coercion, manipulation or intimidation. It includes both attempted and completed sexual acts such as rape, attempted rape, incest, and sexual touching. It also includes sexual abuse without physical contact (such as voyeurism, exhibitionism, and sexual harassment). Sexual contact with a person who is unable to give consent is also sexual assault. This includes a person who is asleep, under the influence of drugs or alcohol, mentally impaired, too young, or otherwise incapable of consent.

Domestic violence is also called intimate partner violence. It includes physical, sexual, and psychological abuse, as well as economic coercion. Humiliation, controlling what the victim does, denying access to money, and stalking are some examples of psychological abuse.

Washington State Data

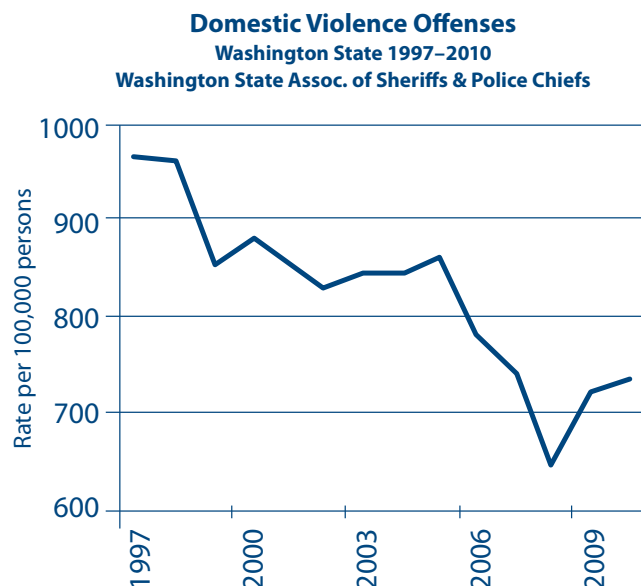
In 2010, there were 49,233 reports of domestic violence offenses and 2,499 reports of forcible rapes in Washington. Almost 32 percent of the murders in 2010 were related to domestic violence.¹

Sexual and domestic violence disproportionately impact women, particularly women of color. In a 2010 national study, about 18 percent of women

reported being raped in their lifetime, compared with 1.4 percent of men. Nearly 45 percent of women reported other forms of sexual violence in their lifetime, compared with about 22 percent of men. Rape rates were highest among women who identified as multiracial (about 34 percent) and American Indian/Alaska Native (about 27 percent). The rates for white, non-Hispanic women were about 19 percent.²

In the same study, about 36 percent of women reported being raped, physically assaulted, or stalked by an intimate partner, compared to about 28 percent of men.² About 29 percent of these women reported adverse impacts from the violence (such as psychological symptoms, injury, or missed school or work), compared to about 10 percent of men. Nearly 80 percent of domestic-related murders between 1997 and 2010 were committed by male abusers against female victims and their children, other family members, friends, and coworkers.³

Between 1997 and 2010, reports of domestic violence-related offenses in Washington State dropped by about one-quarter. Changes in awareness and reporting might be contributing to this downward trend. There were also large national decreases in a variety of measures of violent crime and child abuse during this time period. Because available data does not readily provide the victims' age and gender, it is difficult to fully understand the scope and nature of the problem. It is also important to note that most domestic violence incidents are not reported to law enforcement. The under reporting of these forms of violence leads to rate estimates that do not reflect the actual prevalence of the problem.



Bullying

Bullying is when a person or group repeatedly tries to harm someone (physically or emotionally) who is weaker or who they think is weaker. People who bully use their power to intentionally control or harm those who may have a hard time defending themselves.

Examples of bullying include insults, physical aggression, threats, and spreading rumors. Bullying may be in person or by cell phone or internet ("cyber bullying"). It often includes harassment related to gender, real or perceived sexual orientation, race or ethnicity, religion, or disability. One study found that youth who engage in bullying and/or homophobic teasing may be more likely to perpetrate sexual harassment in the future.⁴

In the 2010 Washington State Healthy Youth Survey, 30 percent of 6th grade students, 30 percent of 8th grade students, 24 percent of 10th grade students, and 17 percent of 12th grade students reported being bullied in the last month. Among 8th graders in 2010, 11 percent reported being bullied because of their religion; 20 percent because of gender; 13 percent because of perceived sexual orientation; and 10 percent because of a disability. Eleven percent of 8th graders reported being bullied in the past 30 days by computer or cell phone.

Risk and Protective Factors

Bullying, domestic violence, and sexual violence share many common risk factors. These factors may increase risk of committing or being a victim of violence.

Risk factors are found at different levels of society. At the individual level, risk factors for perpetration include a history of aggression or violence, antisocial behavior, and alcohol and/or drug use. Additionally, belief in strict gender roles is a risk factor for perpetration of domestic violence and sexual assault.^{5,6}

At the level of relationships and family life, common risk factors include having a childhood history of family violence, physical or sexual abuse, or poor parenting (including low emotional support, poor boundaries, physical discipline, and lack of supervision). A strong patriarchal family environment is a risk factor for perpetration of sexual violence. Being a victim of physical, psychological, or sexual abuse is one of the strongest risk factors for perpetrating domestic violence.^{5,6}

At the community and societal level, poverty and social norms that support violence are common risk factors. Strict gender roles and male entitlement are societal risk factors for domestic and sexual violence.^{5,6}

Emotional health and being connected with friends and adults in the community may be protective factors against sexually aggressive behavior in male youth. Academic achievement may be a protective factor against sexually aggressive behavior toward female youth.⁷

Bullying protective factors include:

- Having a positive outlook on social situations
- Being aware of consequences for bad behavior
- Enjoying warm, supportive relationships with parents or other adults
- Having friends that parents approve of
- Being supervised by parents
- Being committed to school
- Winning recognition for involvement in positive activities
- Living in a neighborhood free of crime, drugs, or other symptoms of community disorganization⁶

Associated Health Risks

Violence reduces quality of life and can lead to life-long mental and physical health problems. It also increases the risk of being a victim or perpetrator of further violence.

Youth who are bullied are likely to experience a drop in grades, increased anxiety, and loss of friends or social life.⁸ Statewide in 2010, 8th graders who were bullied

at school were more likely to get lower grades in school (C's, D's, or F's) compared to those who weren't bullied. Washington youth who were bullied were more likely to report:

- Using alcohol and some drugs
- Being depressed
- Being suicidal
- Engaging in violent or unsafe behaviors
- Having a lower quality of life

Bullies themselves are at risk for depression, and have lower academic achievement.⁹ They are also more likely than other youth to have been abused.¹⁰

Domestic and sexual violence have serious physical, mental, sexual and reproductive health problems for victims and for their children. Health effects are both short- and long-term and come with high social and economic costs. These forms of violence are a widespread cause of injury and death in females.

Headaches, back pain, abdominal pain, and gastrointestinal disorders are common physical health effects of domestic and sexual violence. Depression, post-traumatic stress disorder, sleep difficulties, eating disorders, and suicide attempts are common psychological effects. Domestic and sexual violence can cause unintended pregnancies, induced abortions and sexually transmitted infections. Sexual violence, especially during childhood, can lead to increased smoking, substance abuse, and risky sexual behaviors later in life. It is also linked with committing sexual violence (for males) and being a victim of sexual violence (for females).¹¹

Recommended Strategies

Promising Strategies in Primary Prevention

Violence prevention work can focus on preventing violence before it starts (primary prevention) or preventing additional harm after violence has occurred (secondary and tertiary prevention). Most public health work related to violence is focused on primary prevention; preventing *first-time* perpetration and victimization.

Research on effective sexual and domestic violence prevention is still emerging. In most cases, there is not enough research to demonstrate effectiveness. However, there are a number of promising practices.

Models of primary prevention

Research suggests that violence is a learned behavior. This means that violence is potentially preventable. Risk and protective factors occur at the individual, interpersonal, community, and societal levels. Effective violence prevention approaches require action at each of those levels. This approach is known as the social-ecological model.

The "Nine Principles of Effective Prevention Programs"¹² is another commonly used model. The model is based on research which identified common features of successful prevention programs. These features included:

1. Comprehensive services
2. Varied teaching methods
3. Sufficient dosage

4. Theory driven
5. Positive relationships
6. Appropriately timed
7. Socially and culturally relevant
8. Outcome evaluation
9. Well-trained staff

Early childhood interventions

Prenatal and early childhood programs include home visiting and community-based services such as Head Start and parenting programs. These programs may reduce youth violence and aggression. Early childhood and family-based programs aim to develop physically, emotionally, and socially healthy children and reduce exposure to violence and other adverse events.

Youth violence can also be prevented by developing the life skills of young children. Life skills are mental, emotional, and social skills that help people deal with the challenges of daily life. Preschool enrichment and social development programs have been shown to prevent aggression, improve social skills, boost academic achievement and improve job prospects. This is especially true for children from poor families and neighborhoods. The benefits of high-quality programs of this type can last into adulthood.¹³

School-based interventions

School-based interventions have shown strong evidence to prevent or reduce violent behavior.¹⁴ Academic enrichment programs, incentives to complete schooling, and vocational training programs have shown promise in changing violent behaviors.¹⁵ For bullying prevention programs, research has found several common strategies that are considered best practice:

- Focus on the school environment
- Assess bullying at your school
- Garner staff and parent support for bullying prevention
- Form a group to coordinate the school's bullying prevention activities
- Train your staff in bullying prevention
- Establish and enforce school rules and policies related to bullying
- Increase adult supervision in "hot spots" for bullying
- Intervene consistently and appropriately in bullying situations
- Focus some class time on bullying prevention
- Continue these efforts over time¹⁶

School-based interventions are also well placed to prevent violence against girls and women. These programs focus on sexual and dating violence to address gender norms and harmful attitudes about sex and relationships early, before they become deeply ingrained. There are several programs that have shown promise in reducing dating and sexual violence. Examples include *SafeDates*, *Shifting Boundaries*, and *Dating Matters*TM. Dating programs are more effective if they are delivered in more than one session over time and if they aim to change attitudes and norms. Programs that present separately to males and females may be more effective in changing male attitudes than mixed groups.^{17, 18, 19}

Programs that do not appear effective in reducing youth violence include:

- Gun safety training
- Programs providing meetings with prison inmates who describe the brutality of prison life
- Trying youth offenders in adult courts
- Residential programs in psychiatric or correctional institutions¹¹

Community interventions

Violent behavior is strongly influenced by cultural and social norms. Social tolerance of violent behavior is learned in childhood. It may be learned through the use of physical discipline or witnessing violence in the family, community, or media. Several damaging norms help create an environment in which sexual violence can occur. These include norms about women (such as objectification, oppression, and limited roles), power (placing value on having power over others), violence (tolerance of aggression and blaming the victims), manhood (traditionally associated with domination, control and risk-taking) and privacy (ideas of individual and family privacy that foster secrecy and silence).²⁰ These norms also support domestic violence and bullying behaviors. Interventions that challenge these and other damaging norms may help reduce and prevent violent behavior.

Washington State has received federal funds for sexual violence prevention work since 1997. The goal of the state program is to "change the norms, values, beliefs, and attitudes that cause sexual violence through the shifting of ownership of solutions from social services to the community."²¹ To further this goal, the state provides funds to programs across the state using community development and skill building strategies.

There are several types of promising interventions to change knowledge, attitudes, beliefs, or behavioral intentions related to sexual violence. These include bystander intervention programs, programs targeting rape myths, and training in communication, assertiveness, and healthy relationships.²² Programs with male peer groups also show promise in changing violence-supportive attitudes, particularly toward sexual violence.¹⁵ Such programs build awareness and empathy for survivors and provide skills in critical thinking and healthy relationships. These programs also help build skills to confront situations of violence, harassment, or violence-supportive language. Examples of male peer group programs include *The Men's Program*, *Mentors in Violence Prevention*, and *Men Can Stop Rape*. *Green Dot* is a program for both men and women that includes bystander intervention skills and social marketing against sexual violence. However, these programs have not been shown to reduce violence.

Teaching women self-defense skills can help them effectively avoid rape. Active strategies such as yelling, fleeing, and fighting have been linked with lower rates of completed rape, with no increase in physical injury. Effective self-defense programs address social barriers to defense and provide skills-based training (rather than simply discussions about self-defense strategies).²²

Voucher programs for public housing residents have shown promise in reducing youth violence. These programs provide vouchers to tenants that can be used to rent private housing. Vouchers help to deconcentrate poverty, increase opportunity, and reduce family exposure to violence.²³

Reducing the availability and abuse of alcohol is another community-level strategy that has been shown to reduce violence. Specific strategies include regulating alcohol sales, providing treatment for problem drinkers, and improving the management of places where alcohol is served.¹⁵

Promising Strategies in Secondary and Tertiary Prevention

Interventions to identify survivors of domestic and sexual violence and provide effective care and support are critical for protecting health. These services may help reduce revictimization and break the cycle of violence from one generation to the next.

Screening/identification

Most domestic and sexual violence incidents are never reported to criminal justice agencies. This could be due to stigma or fear of further abuse. However, violence can bring victims into contact with the healthcare system because of the resulting physical and emotional problems. Healthcare providers, then, have an opportunity to identify victims, provide support, and refer them to needed services. The U.S. Preventive Services Task Force recommends screening as an effective way to identify victims of intimate partner violence. Screening itself hasn't been shown to reduce exposure to violence. However, advocacy and counseling services obtained as a result of screening improves outcomes such as exposure to violence, depression, pregnancy coercion, and birth outcomes. These improvements may vary by population.²⁴ If screening is done, it is crucial that effective systems are in place to support the identified victims and refer them to appropriate services.

Advocacy and counseling

Some interventions providing safety planning, advocacy, and counseling have been found to improve quality of life of victims and children. Examples include provision of safety plans with details of local support services, nurse-led discussions, and advocates connecting victims to needed community services. These programs have shown outcomes including better safety behaviors, reduced violence, increased social support, and behavioral and emotional improvements for children of victims. Early trauma-focused cognitive behavioral therapy has been effective in preventing chronic post-traumatic stress disorder.¹⁵

Legal support

Protection orders can reduce revictimization among victims of intimate partner violence. Studies of women with protection orders have found a decreased risk of contact with the abuser, threats involving a weapon, and injury.¹⁰ Greater decreases in risk were found among those who maintained the protection order for longer periods. Applying for a protection order may reduce future violence, whether or not the order is granted. While protection orders may be effective, their utility is limited without adequate enforcement.

For More Information

Washington State

Department of Health, Violence Against Women: Information for Healthcare Providers

www.doh.wa.gov/YouandYourFamily/InjuryandViolencePrevention/ViolenceAgainstWomen.aspx

Office of the Superintendent of Public Instruction – School Safety Center, Bullying and Harassment

www.k12.wa.us/SafetyCenter/BullyingHarassment/default.aspx

Washington Coalition Against Domestic Violence

www.wscadv.org

Washington Coalition of Sexual Assault Programs

www.wcsap.org

National/International

National Sexual Violence Resource Center

www.nsvrc.org

National Online Resource Center on Violence Against Women

www.vawnet.org

StopBullying.gov

www.stopbullying.gov

Endnotes

- ¹ K. Lapczynski et al., "Crime in Washington 2010 Annual Report," 2010, Washington Association of Sheriffs and Police Chiefs.
- ² M.C. Black et al., "The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report," 2011, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, www.cdc.gov/ViolencePrevention/NISVS, accessed on June 4, 2012.
- ³ J. Fawcett, "Up to us: Lessons learned and goals for change after thirteen years of the Washington State Domestic Violence Fatality Review," 2010, Washington State Coalition Against Domestic Violence.
- ⁴ D. Espelage et al., "Bullying perpetration and subsequent sexual violence perpetration among middle school students, 2012, *Journal of Adolescent Health*, Vol. 50, pp. 60-65.
- ⁵ Centers for Disease Control and Prevention, www.cdc.gov/ViolencePrevention/intimatepartnerviolence/riskprotectivefactors.html, accessed on September 17, 2012.
- ⁶ U.S. Substance Abuse & Mental Health Services Administration, "The ABCs of bullying: Addressing, blocking, and curbing school aggression," online course, http://pathwayscourses.samhsa.gov/bully/bully_intro_pg1.htm, accessed on September 17, 2012.
- ⁷ Borowsky et al., "Adolescent Sexual Aggression: Risk and Protective Factors," December 1, 1997, *Pediatrics*, Vol. 100, No. 6, pp. e7.
- ⁸ G. Glew et al., "Bullying: children hurting children," 2000, *Pediatric Review*, Vol. 21, pp. 183-189.
- ⁹ J.A. Dake et al., "The Nature and Extent of Bullying at School," 2003, *Journal of School Health*, Vol. 73, No. 5, pp.173-80.
- ¹⁰ O.W. Barnett et al., *Family Violence Across the Lifespan*, 3rd Ed., Sage, Thousand Oaks, CA, 2011.
- ¹¹ E.G. Krug et al. (Eds.), *World report on violence and health*, World Health Organization, Geneva, Switzerland, 2002.
- ¹² M. Nation et al., "What works in prevention: Principles of effective prevention programs," 2003, *American Psychologist*, Vol. 58, pp. 449-456.
- ¹³ World Health Organization, *Preventing violence by developing life skills in children and adolescents*, WHO Press, Geneva, Switzerland, (2009), http://whqlibdoc.who.int/publications/2009/9789241597838_eng.pdf, accessed on June 25, 2012.
- ¹⁴ Task Force on Community Preventive Services. (2007). A recommendation to reduce rates of violence among school-aged children and youth by means of universal school-based violence prevention programs. *Am J Prev Med*, 33(2S):S112-13.
- ¹⁵ World Health Organization, *Violence Prevention: the evidence*, WHO Press, Geneva, Switzerland, 2010.
- ¹⁶ S.P. Limber, "What works—and doesn't work in bullying prevention and intervention," 2004, *Student Assistance Journal*, Winter Journal, pp.16-19.
- ¹⁷ D.J. Whitaker et al., "Interventions to prevent intimate partner violence," in L. Doll et al. (Eds.) *Handbook of injury and violence prevention*, 2006, New York, NY, Springer, pp. 203-221.
- ¹⁸ B. Taylor et al., "Shifting boundaries: Final report on an experimental evaluation of a youth dating violence prevention program in New York City middle schools," 2011, U.S. Department of Justice, www.ncjrs.gov/pdffiles1/nij/grants/236175.pdf, accessed on June 25, 2012.
- ¹⁹ D.A. Wolfe et al., "A school-based program to prevent adolescent dating violence: a cluster randomized trial," *Arch Pediatr Adolesc Med* 2009, Vol. 163, pp. 692-699.
- ²⁰ R. Davis et al., "Sexual Violence and the Spectrum of Prevention: Towards a Community Solution," 2006, National Sexual Violence Resource Center, Enola, PA, www.nsvrc.org/publications/nsvrc-publications/sexual-violence-and-spectrum-prevention-towards-community-solution, accessed on June 25, 2012.
- ²¹ L.G. Ortiz, Synergies, *Strategies for enhancing the capacity of organizations, communities and individuals to prevent sexual violence in Washington State*, August 2009, Washington State Department of Health and Department of Commerce.
- ²² P. Schewe, "Interventions to prevent sexual violence," in L. Doll et al. (Eds.), *Handbook of injury and violence prevention*, New York, NY, Springer, 2006, pp. 223-240.
- ²³ D.C. Gottfredson and E. Bauer, "Interventions to prevent youth violence," in L. Doll et al. (Eds.), *Handbook of injury and violence prevention*, New York, NY, Springer, 2006, pp. 157-181.
- ²⁴ Intimate partner violence: A systematic review to update the 2004 U.S. Preventive Services Task Force recommendation. *Annals of Internal Medicine*, Vol. 156, No. 11, pp. 796-808.

Appendix A

Data Sources

Healthy People 2020 Objectives

Healthy People 2020 is a document that provides national health promotion and disease prevention goals and objectives. These objectives were developed by the United States Department of Health and Human Services, incorporating input from federal, state, and local agencies and extensive public comment.

The reader must be careful when comparing Washington State relative to the national goals. Many of Washington State's indicators are not identical to the indicators used in the national goals; in some cases, no comparable data is available. *Healthy People 2020* objectives are not always consistent with each other, because coding and other conventions have changed. Washington State has the advantage of collecting hospitalization data, which is not uniformly available in all states, and therefore not used as a measure in *Healthy People 2020*.

Death Certificate System

Description of the Data

The Washington State Death Certificate System gathers information about each death that occurs in Washington State. Similar information is collected for residents of Washington State who die in another state or country. Thus, the Death Certificate System contains records on all deaths occurring in the state and all deaths to residents of the state.

Funeral directors collect information about the decedent from an informant (usually a family member or close personal friend of the decedent). Cause-of-death information is generally provided by a certifying physician, medical examiner, or coroner.

The major purposes of the death certificate system are to:

- Provide a death record for purposes such as establishing inheritance and disposition of human remains.
- Record information about causes of death, injuries, occupation, and age which can be used by data analysts to help prolong the lives of residents of Washington State. For more information about what data are collected on the Washington State Death Certificates, visit www.doh.wa.gov/DataandStatisticalReports/VitalStatisticsData/DeathData.aspx (Washington State Department of Health death certificates Webpage).

Classification and coding of data on Washington death records follow the National Center for Health Statistics (NCHS) guidelines as defined in Vital Statistics Instruction Manuals parts 1–20 (U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Health Statistics, Hyattsville, MD). For more information on the International Classification of Disease (ICD) 10 codes used in the death certificates, visit www.doh.wa.gov/DataandStatisticalReports/VitalStatisticsData/DeathData/ICD10.aspx (Washington State Department of Health, death certificates/technical notes Webpage).

Use of the Data for this Report

The Death Certificate System was used in every chapter of this report to identify the number of deaths related to injury by cause and intent of injury. The cause and intent of each injury death were classified by ICD-10 code using the recommended framework.

Washington State Comprehensive Hospital Abstract Reporting System (CHARS)

Description of the Data

The CHARS database is used to collect public information such as the age, sex, zip code, and billed charges of the patient, as well as the codes for their diagnosis and procedures, among other items.

The purpose of the CHARS system is to provide public health personnel, consumers, purchasers, payers, providers, and researcher's useful information by which to make informed decisions on healthcare. For more information, visit the Washington State Department of Health Website at www.doh.wa.gov/DataandStatisticalReports/HealthcareinWashington/HospitalandPatientData.aspx.

Reasons for hospitalization are coded according to the International Classification of Disease, Clinical Modification, Ninth Revision (ICD-9-CM). In addition to nature of injury codes, datasets include "e-codes" describing the (external) cause of an injury or poisoning. E-code reporting by hospitals is mandatory in Washington.

Use of the Data for this Report

CHARS data were used in every chapter of this report to identify the number of non-fatal hospitalizations related to injury by cause and intent of injury. The cause and intent of each injury hospitalization were classified by ICD-9 code using the recommended framework.

Population Data

Description of the Data

The United States Constitution mandates a count of people living in the country every 10 years to determine how many seats each state will have in the House of Representatives. The census is also used for political redistricting, distribution of federal and state funds, and other governmental needs. The Bureau of the Census, located in the Department of Commerce, develops and mails census questionnaires to all known addresses where people might live, including housing units, hospitals, and hotels, in the United States and its territories.

The census asks basic questions, such as name, age, gender, and race of everyone in the household. The American Community Survey, which is sent to a small percentage of the population, includes additional demographic questions, such as income and education, and questions about housing. Census takers visit housing units in rural and remote areas to drop off and pick up forms, and visit housing units that do not return census forms. Census workers also stage a one-day operation to obtain information on homeless persons and others who might be missed in the traditional enumeration of housing units and group quarters.

The Office of Financial Management (OFM) develops annual estimates of the population using information from the decennial censuses, annual data on the number of births and deaths in Washington, and a variety of other data, such as housing starts, to estimate migration into and out of Washington. Both the federal census counts and the Washington intercensal estimates are also used by many other entities for a diversity of purposes, such as the denominator for calculating rates of health events. For more information about population data, visit www.ofm.wa.gov/pop/.

Use of the Data for this Report

Population data are used in every chapter of this report as the denominator for rate calculations.

Healthy Youth Survey (HYS)

Description of the Data

The HYS is a collaborative effort between Washington's Office of the Superintendent of Public Instruction, the Department of Health, the Department of Social and Health Service's Division of Behavioral Health

and Recovery, the Liquor Control Board, and the Department of Commerce. The HYS provides important information about adolescents in Washington. County prevention coordinators, community mobilization coalitions, community public health, and safety networks, and others use this information to guide policy and programs that serve youth. The information from the HYS can be used to identify trends in the patterns of behavior over time. The state-level data can be used to compare Washington to other states that do similar surveys and to the nation. Every two years from 2002–2010, students in grades 6, 8, 10, and 12 answered questions about safety and violence, physical activity and diet, alcohol, tobacco and other drug use, and related risk and protective factors. State level data are available at www.doh.wa.gov/DataandStatisticalReports/HealthBehaviors/HealthyYouthSurvey.aspx.

Use of the Data for this Report

HYS data was used in the chapters on drowning, motor vehicle, drug poisoning and overdose, suicide, violence, and child abuse and neglect to provide information related to safety and violence.

Behavioral Risk Factor Surveillance System (BRFSS)

Description of the Data

This is a national telephone survey of adults ages 18 and older that monitors modifiable risk factors for chronic diseases and other leading causes of death. For more information on the Washington State BRFSS, go to www.doh.wa.gov/DataandStatisticalReports/HealthBehaviors/BehavioralRiskFactorSurveillanceSystemBRFSS.aspx.

For CDC BRFSS information, go to www.cdc.gov/brfss (CDC Behavioral Risk Factor Surveillance System Website).

Use of the Data for this Report

BRFSS data was used in the chapter on child abuse and neglect to provide information related to safety and violence.

Child Protective Services (CPS)

Description of the Data

CPS is one of sections of the Division of Children and Family Services (DCFS) of the Washington State Department of Social and Health Services (DSHS). CPS is responsible for protecting children from abuse or neglect. CPS staff is required by law to investigate reports of suspected child abuse or neglect that meet the legal definition of child abuse or neglect. Data included in this report are accepted referral data. “Accepted referral” is a referral to Child Protective Services that passed an initial screening to determine whether investigation is required.

Use of the Data for this Report

CPS data was used in the chapter on child abuse and neglect to estimate the number of accepted referrals from abuse or neglect among children in Washington.

Fatal Accident Reporting System (FARS)

FARS contains data on an annual census of fatal traffic crashes. To be included in FARS, a crash must involve a motor vehicle traveling on a traffic way customarily open to the public, and must result in the death of an occupant of a vehicle or a non-motorist within 30 days of the crash. Data collected by FARS includes details about the crash, the vehicles involved, and the persons (including drivers) involved.

For more information about FARS, go to www.wtsc.wa.gov/statistics-reports/about-our-data/.

Use of the Data for this Report

FARS data was used in the chapter on motor vehicle occupants to provide information on the most common causes of fatal accidents and safety restraint use among subpopulations within Washington State.

Appendix B

E-code Matrices

Classification of Injuries¹ – Recommended framework of ICD-9 E-code groupings for presenting injury death and hospitalization data

Cause	Unintentional	Intentionally Self Inflicted	Assault	Undetermined	Legal Intervention or War
Cut/pierce	E920	E956	E966	E986	E974
Drowning/ Submersion	E830, E832, E910	E954	E964	E984	
Falls	E880-E886, E888	E957	E9979.3	E987	
Fire/burn	E890-E899, E924	E958.1, E958 (.2,.7)	E968.0, E961, E968.3n	E988.1, E988 (.2,.7)	
Fire/flame	E890-E899	E958.1	E968.0, E979.3	E988.1	
Hot Object/ Substance	E924	E958 (.2,.7)	E961, E968.3	E988 (.2,.7)	
Firearms	E922	E955 (.0-.4)	E965 (.0-.4), E979.4	E985 (.0-.4)	E970
Machinery	E919				
Motor Vehicle Traffic	E810-E819	E958 (.5, .6)	E968.5	E988 (.5 .6)	
Occupant	E810-E819 (.0,.1)				
Motorcyclist	E810-E819 (.2,.3)				
Pedal cyclist	E810-E819 (.6)				
Pedestrian	E810-E819 (.7)				
Other	E810-E819 (.4,.5,.8)				
Unspecified	E810-E819 (.9)				
Pedal Cyclist, Other	E800-E807 (.3), E820-E825 (.6), E826 (.1,.9),E827-E829 (.1)				
Pedestrian, Other	E800-E807 (.2), E820-E825 (.7), E826-E829 (.0)				
Transport, Other	E800-E807 (.0,.1,.8,.9), E820-E825(.0-.5,.8,.9), E826 (.2-.8), E827-E829 (.1)	E958.5		E988.5	
Water/Space/Air	E840-E845, E831, E833-E838	E958.6		E988.6	
Natural/ Environment	E900-E909, E928 (.0-.2)	E958.3		E988.3	
Bites/Stings	E905 (.0-.6,.9);E906(.0-.4,.5,.9)				
Overexertion	E927				
Poisoning	E850-E869	E950-E952	E962	E980-E982	E972
Struck By/Against	E916-E917		E960.0, E968.2		E973, E975
Suffocation	E911-E913	E953	E963	E983	
Other Specified, & Classifiable	E846-E848, E914-E915, E918, E921, E922.4, E923, E925-E926, E928.3, E929 (.0-.5)	E955 (.5,.6, .7,.9) E958 (.0,.4)	E960.1, E965 (.5-.9), E967, E968.4,.6,.7	E985.5,.6,.7 E988 (.0,.4), E979 (.0-.2, .5-.9)	E971, E978, E990-E994, E996, E997 (.0-.2)
Other Specified, Not Elsewhere Classifiable	E929.8, E928.8	E958.8, E959	E968.8, E969	E988.8, E989	E977, E995, E997.8, E998, E999
Unspecified	E887, E928.9, E929.9	E958.9	E968.9	E988.9	E976, E997.9

Source: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention

¹ Certain E-code categories are not considered to represent ‘true’ injuries, and are excluded from analysis. These include injuries due to medical misadventures, postoperative complications, and adverse effects of drugs, medicinal, and biological substances.

A small number of newborns that are coded as injured between birth and discharge from the hospital are also excluded. Hospital patients who die in the hospital are excluded from the hospitalization data, but included in the mortality data.

Classification of Injuries

Classification of Injuries – Recommended framework of ICD-10 E-code groupings for presenting injury death and hospitalization data

Cause	Unintentional	Intentionally Self Inflicted	Assault	Undetermined	Legal Intervention or War
Cut/pierce	W25-W29, W45	X78	X99	Y28	Y35.4
Drowning/ Submersion	W65-W74, V90, V92	X71	X92	Y21	
Falls	W00-W19	X80	Y01	Y30	
Fire/burn	X00-X19	X76-X77	X97-X98, U01.3	Y26-Y27	Y36.3
Fire/flare	X00-X09	X76	X97	Y26	Y36.3
Hot Object/ Substance	X10-X19	X77	X98	Y27	
Firearms	W32-W34	X72-X74	X93-X95, U01.4	Y22-Y24	Y35.0
Machinery	W24, W30-W31				
Motor Vehicle Traffic	Codes from 6 groups below				
Occupant	V30-V39 (.4-.9), V40-V49 (.4-.9), V50-V59 (.4-.9), V60-V69 (.4-.9), V70-V79 (.4-.9), V83-V86 (.0-.3)				
Motorcyclist	V20-V28 (.3-.9), V29 (.4-.9)				
Pedal cyclist	V12-V14 (.3-.9), V19 (.4-.6)				
Pedestrian	V02-V04 (.1,.9), V09.2				
Other	V80 (.3-.5), V81.1, V82.1				
Unspecified	V87 (.0-.8), V89.2				
Pedal Cyclist, Other	V10-V11, V12-V14 (.0-.2), V15-V18, V19 (.0-.3,.8,.9)				
Pedestrian, Other	V01, V02-V04 (.0), V05, V06, V09 (.0,.1,.3,.9)				
Transport, Other	V20-V28 (.0-.2), V29 (.0-.3), V30-V79 (.0-.3), V80 (.0-.2,.6-.9), V81-V82 (.0,.2-.9), V83-V86 (.4-.9), V87.9, V88 (.0-.9), V89 (.0,.1,.3,.9)	X82	Y03	Y32	
Water/Space/Air	V91, V93-V99		U01.1		Y36.1
Natural/ Environment	W42, W43, W53-W64, W92-W99, X20-X39, X51-X57				
Bites/Stings	W53-W59, X20-X29				
Overexertion	X50				
Poisoning	X40-X49	X60-X69	X85-X90, U01 (.6-.7)	Y10-Y19	Y35.2
Struck By/Against	W20-W22, W50-W52	X79	Y00, Y04	Y29	Y35.3
Suffocation	W75-W84	X70	X91	Y20	
Other Specified, & Classifiable	W23, W35-W41, W44, W49, W85-W91, Y85	X75, X81, U03.0	X96, Y02, Y05-Y07, U01	Y25, Y31	Y35 (.1,.5), Y36 (.0,.2,.4-.8)
Other Specified, Not Elsewhere Classifiable	X58, Y86	X83, Y87.0	Y08, Y87.1, U01.8, U02	Y33, Y87.2	Y35.6, Y89 (.0,.1)
Unspecified	X59	X84, U03.9	Y09, U01.9	Y34, Y89.9	Y35.7, Y36.9

Source: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention

Appendix C

Glossary of Terms and Acronyms

Terms

Abuse

A pattern of violence occurring in the course of a domestic (e.g., parent-child, husband-wife, partner-partner), or caregiver-client relationship.

Active Countermeasure

A preventive measure requiring action on the part of the individual being protected.

Administrative Per Se License Suspension

Legislation requiring the immediate surrender of a license by a driver who refuses to submit to a chemical test, or whose test records a blood alcohol concentration (BAC) higher than the state's legal limit.

Age-adjusted Injury Rate

An injury rate calculated to reflect a standard age distribution.

Age-specific injury rate

An injury rate calculated for a group of a defined age range.

Agent

The form of energy that damages body tissues in an injury.

Aggravated Assault

An unlawful attack by one person on another for the purpose of inflicting serious or aggravated bodily injury (FBI).

Aggregation

A process in which data collected from a number of geographic areas are combined to provide a more comprehensive picture.

Air Bag

An inflatable crash protection device concealed in the steering wheel, dashboard, door, ceiling, under steering wheel, door columns, etc., of a car until it is activated by a crash. In a serious frontal crash, the bag fills to create a protective cushion between the person and the steering wheel, dashboard, and windshield. For maximum protection one must also use seatbelts in cars with airbags (NHTSA).

Assault

An act of violence resulting in injury.

Attenuation of Effect

The decreasing impact of an education/behavior change intervention as it is carried out in a population.

Baseline Data

Data collected for a period of time before the implementation of an intervention that are then used for comparison with data collected during or after implementation.

Case

An individual incident or person of the type about which data are collected.

Case Definition

A description used to specify incidents or persons about which data are collected.

Child Abuse

A general term encompassing physical abuse, psychological or emotional abuse, sexual abuse, or sexual exploitation and neglect.

Child Death Review (CDR)

A nationally recognized tool for collecting information from multiple sources on unexpected deaths of children age birth through 17. The information is ultimately used to better understand antecedents to unexpected child death, and to prevent child death and injury.

Child Neglect

The systematic disregard for the physical, psychological, or emotional needs of a child by a caregiver.

Child Sexual Abuse

Any sexual contact between a child and an adult; in certain circumstances, sexual contact between children.

Coalition

An organization of individuals representing a variety of interest groups who come together to share resources, and plan and work together.

Community Diagnosis

A synthesis of injury morbidity and mortality data and information about the community that is used when designing a program.

Confidence Interval

The degree of certainty that can be claimed for the accuracy of a statistical calculation.

Conspicuity-enhancement Devices

Reflective materials and objects (e.g., flashlights vests, headbands, ankle bands, etc.) worn by nighttime pedestrians, bicyclists, motorcycle riders, and joggers to make them more visible to drivers.

Control (or Comparison) Group

A group of individuals as similar as possible to an experimental group who are not exposed to a given intervention.

Corridor Safety Project

A community process by which a specific stretch of roadway is designated as dangerous, and a multi-faceted approach is taken to improve safety and reduce crashes, injuries, and fatalities. Community partners usually include all law enforcement agencies, public works and state highway agencies, appropriate federal agencies, emergency medical services and response, businesses, schools, civic organizations, private citizens, and local governments.

Countermeasure

A measure/action taken to counter behavior or action that could lead to possible injury or death.

Data Abstraction

The process of translating information presented in narrative form into variables.

Data Linkage

The process of matching data on the same cases from more than one source.

Death Rate

A measure derived by dividing the number of deaths in a population in a given period by the resident population at the middle of that period.

Deterrence

An attempt to prevent crime or breaking safety laws through the threat of punishment.

Direct Cost

The actual dollar expenditures related to illness or injury, including amounts spent for hospital and nursing home care, physician and other medical professional services, drugs and appliances, and rehabilitation.

Disaggregate

The process of separating data for a particular geographic area or population variable from a more comprehensive collection of data.

Domestic Violence

Spouse/partner abuse and woman battering.

Dram Shop Law

Legislation that make civilly liable those who serve alcohol beverages to a minor or to an individual already intoxicated.

E codes

Numerical designations of external cause of injury developed by the World Health Organization (WHO) for the International Classification of Diseases (ICD) system.

Early Death

A death occurring within 2-3 hours of an injury.

Education/Behavior Change Interventions

Preventive measures involving the education of the population at large, targeted groups, or individuals and efforts to alter specific injury-related behaviors.

Emergency Medical Services System

A system that provides for the arrangement of personnel, facilities, and equipment for the effective and coordinated delivery of healthcare services in an appropriate geographical area under emergency conditions (occurring as a result of the patient's condition or of natural disaster or similar situation) (EMSS Act of 1973).

Engineering/Technological Interventions

Preventive measures involving changes in the design of products or in the physical environment.

Environment

The physical and psychosocial setting in which injuries occur.

Epidemiology

The study of the occurrence, distribution, and determinants of health-related states and events in populations (disease and injury), and the application of this study to control health problems.

Ergonomics

The study of the interaction between worker and machine.

Evaluation

The collection and analysis of data to determine the effectiveness of a given program (see also outcome evaluation and process evaluation).

Fatal Accident Reporting System (FARS)

Data from traffic fatalities that are collected from police reports, hospital, medical examines and coroners, EMS reports, state registration, driver licensing, highway department files, and death certificates. The National Highway Transportation Safety Administration administers FARS. Data are collected on time and location of the "accident," age, and sex of each person involved, alcohol involvement, and injury severity.

Fire/Burn Injury

Damage to tissue caused by thermal, chemical, electrical, radiation energy, or by inhalation of smoke and toxic fumes caused by fire.

Focus Group

A qualitative marketing research technique that most commonly involves a structured group discussion with 8–12 participants, often lasting one and a half to two hours, facilitated by a professional moderator. This methodology is most appropriate for identifying and clarifying issues and for pretesting messages and materials.

Formative Evaluation

A process conducted (usually while the program is under development) on a program's proposed materials, procedures, and methods.

Goal

A statement of a program's intention to bring about long-term improvement in an injury problem.

High Risk Groups

Groups known to have a higher than average rate of a particular injury, such as suicide, drowning, or head injury. For example, the following are at high risk for suicide: white males, Native Americans, depressed youth/people, high-achieving youth, youth with school problems, substance abusers, gay and lesbian youth, and victims of abuse/assault.

Homicide

The killing of one person by another.

Host

The injured individual.

Ignition Interlock

A device for preventing a driver from starting a vehicle unless he/she passes an alcohol-detecting breath test.

Immediate Death

A death occurring within minutes after injury.

Impact Evaluation

A process to determine how well a program is meeting its intermediate goals of changes in people's knowledge, attitudes, and beliefs.

Impaired Driving

Drunk and/or drugged driving.

Incidence

The number of instances of illness commencing, or of persons falling ill or sustaining injury, during a given period in a specified population. More generally, the number of new events, e.g., new cases of injury in a defined population.

Indirect Cost

The value of lost output due to the reduced productivity caused by illness, disability, or injury. This includes the value of lost workdays and housekeeping days due to illness and disability, and losses due to premature death.

Injury

Unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, or chemical energy, or from the absence of such essentials as heat or oxygen. The terms "injury" and "trauma" are used interchangeably.

Injury Rate

A statistical measure describing the number of injuries expected to occur in a defined number of people (usually 100,000) within a defined time period (usually one year). An expression of the relative risk of different injuries or groups.

Institutionalization

The process by which a program achieves ongoing financial support and commitment from the agency and community in which it is based.

Instrument

A questionnaire, survey, test, or other data collection form to gather information about injury incidence and/or knowledge, attitudes, or behavior related to injuries.

Intentional Injury

An injury that is judged to have been purposely inflicted, either by the self or another.

Intervention

A specific prevention measure or activity designed to meet a program objective. The three categories of intervention are legislation/enforcement, education/behavior change, and engineering/technology.

Late Death

A death occurring within 2-3 weeks after injury.

Lead Agency

An organization that serves as the focal point for injury prevention expertise on the local or state level. The lead agency offers technical assistance and resources to other groups and serves as a broker of information among groups.

Legislation Enforcement Interventions

Preventive measures involving the enactment or enforcement of laws of regulation.

Life Expectancy

The average number of years of life remaining to a person at a particular age based on a given set of age- and sex-specific death rates.

Maturation

The knowledge, skills, or other attributes that people gain with regard to the goals of an injury prevention program *while the program is going on*, but which are *not* due to program activities.

Morbidity

Any deviation from a state of well being, either physiological or psychological; any mental or physical illness or injury.

Morbidity Cost

The value of lost productivity.

Mortality

Death.

N codes

Numerical designations of the nature of injury developed by the World Health Organization (WHO) for its International Classification of Diseases (ICD) system.

Near Drowning

Submersion injury resulting in brain damage from oxygen deprivation.

Objective

A statement of changes sought in an injury problem in terms that are measurable, time limited, and specific to a given target population (see also Outcome objective and Process objective).

Outcome Evaluation

A process that seeks to measure a program's progress toward improving injury morbidity and/or mortality, knowledge, attitudes, behavior, physical environments, or public policy and practice.

Outcome Objective

A statement of the desired impact of an intervention on injury morbidity and/or mortality, knowledge, attitudes, behavior, physical environment, or public policy or practice.

Passive (or Automatic) Countermeasures

A preventive measure requiring little or no action on the part of the individual being protected.

Pilot Test

A small-scale trial conducted before a full-scale program begins to see if the planned methods, procedures, activities, and materials will work.

Placebo

A service, activity, or item that is similar to the intervention service, activity, or item but without the intervention characteristic that is being evaluated.

Precede

A diagnostic health promotion model focusing on predisposing, enabling, and reinforcing factors that influence health behavior.

Prevalence

The number of instances of a given disease or disability in a given population at a designated time, regardless of the course of the disease or disability.

Prevention

To anticipate and counter in advance.

Primary Enforcement (of seat belt laws)

A stipulation of a safety belt use law that allows law enforcement to stop a driver solely on the basis of a safety belt violation (see also Secondary enforcement).

Primary Prevention

Efforts made to prevent a potential injury event from happening at all (no crashes, no drownings, etc.).

Problem Identification

The process of determining the nature of an injury problem, the characteristics of the population, the community's perception of the problem, the resources available to address it, and the political environment.

Process Evaluation

A method of documenting the achievement of proposed program activities, whether and how interventions were conducted, what portion of the target population was reached, total cost of the program, etc.

Process Objective

A statement of the desired level of achievement of program activities.

Program

A coordinated effort organized by a lead agency to reduce an injury problem among a target population.

Program Description

A written summary describing the magnitude and characteristics of the injury problem(s) to be addressed; program goals, process and outcome objectives, interventions, program strategy, and evaluation measures; and the rationale for selecting a given approach to address the problem(s).

Program Design

A process in which program goals and outcome and process objectives are established, interventions are selected, and a program strategy is identified.

Program Targeting

The selection of feasible program goals, objectives, and interventions, and an appropriate, narrowly defined injury type and target population.

Protective Factors

Factors that serve to decrease the potential for intentional or unintentional injury, including personal and social resources, high self-esteem, sense of personal control, broad range of coping skills, and social support resources, particularly family and school support.

Protocol

The outline or plan of a data collection procedure.

Proxy Measure

An alternative or substitute outcome that has been proven by research or is generally accepted to be associated with reduced injury morbidity or mortality.

Quasi-experimental Design

A type of evaluation design in which individuals are assigned in a nonrandom manner to control and experimental groups.

Rape

All forms of sexual victimization, including forcible rape, attempted rape, and other acts of unwanted sexual aggression.

Rate

A measurement of how frequently an event occurs among people in a certain population during a specified period of time.

Reach

The number of people or households who receive the program's message or intervention.

Recidivism

The tendency to relapse into a previous undesirable type of behavior.

Regression to the Mean

Statistical tendency for variation to average over time, that is, the tendency of statistic extremes to even out over a long period.

Rehabilitation

Services that seek to return a trauma victim to the fullest physical, psychological, social, vocational, avocational, and educational level of functioning of which he/she is capable, consistent with physiological or anatomical impairments and environmental limitations.

Risk Factor

A characteristic that has been statistically demonstrated to be associated with (although not necessarily the direct cause of) a particular injury. Risk factors can be used for targeting particular preventive efforts at groups who may be particularly in danger of injury.

Secondary Enforcement (of safety belt use laws)

A stipulation of a safety belt use law that allows law enforcement officials to address a safety belt violation only after a driver has been stopped for some other purpose.

Secondary Prevention

Efforts made to reduce the severity of an injury during an injury event (wear a seat belt, wear a helmet, wear a life vest).

Sensitivity

The ability of a data collection system to include all cases of a particular injury or event.

Severity Score

A measure of the seriousness of an injury, usually related to probability of survival.

Specificity

The ability of a data collection system to exclude all injuries or events that do not fit the case definition.

Social Marketing

The use of marketing principles and techniques for influence a target audience to voluntarily accept, reject, modify, or abandon a behavior for the benefit of individuals, groups, or society as a whole.

Spouse Abuse

Violence within an intimate relationship directed by one partner at the other.

Strategy

An overall plan for meeting a program's goals and objectives that combines a set of interventions with the program's resources, a plan for the evaluation or its process and outcome, and method of securing the necessary community and financial support to stay in operation.

Suicide

Self-directed violence that results in death.

Suicide Attempt

Self-directed, harmful behavior that could result in death in the immediate future.

Suicide Cluster

A group of suicides or suicide attempts, or both, that occur closer in time and space than would normally be expected in a given community.

Suicide Ideation

Thoughts or ideas of harming or killing oneself.

Suicide Risk Factors

Factors that are strongly associated with suicidal behavior among youth, including a prior suicide attempt, planned intentions, access to lethal means (especially a gun), and prior exposure to suicide of a family member or friend. Related factors are those that increase suicide potential among youth and include family conflict, social isolation, school failure, and significant losses or other serious stressful life events.

Suicide Threats

Direct or indirect expressions of intent to harm or kill oneself, expressed verbally or through writing, artwork, or other means.

Surveillance

The ongoing and systematic collection, analysis, and interpretation of health data in the process of describing and monitoring a health event.

Systems Approach

A comprehensive, systematic method to address injury problem through the combined coordinated expertise of individuals and agencies knowledgeable about the magnitude of the problem, the nature of the community, and the resources available for prevention. Also, more generally, a process that incorporates primary, secondary, and tertiary prevention.

Target Population

The group of persons (usually those at high risk) that program interventions are designed to reach.

Tertiary Prevention

Acute medical care and rehabilitation directed at the return of a functioning patient to society.

Trauma Care System

A system of healthcare provision that integrates and coordinates prehospital emergency medical service resources and hospital resources to optimize the care and therefore the outcome of traumatically injured patients.

Trauma Center

A specialized hospital facility distinguished by the immediate availability of specialized surgeons, physician specialists, anesthesiologists, nurses, and resuscitation and life support equipment on a 24-hour basis.

Trauma Registry

A collection of data on patients who receive hospital care for certain types of injuries, e.g., blunt or penetrating trauma or burns. Such collections are primarily designed to ensure quality trauma care process and outcomes in individual institutions and trauma systems, but have the secondary purpose of providing useful data for the surveillance of injury morbidity and mortality.

Triage

The classification of patients according to medical need and the matching of those patients with available care resources.

Unexpected Child Death

Are those that do not result from a diagnosed terminal illness or other debilitating or deteriorating illness or condition where death is anticipated (natural death) unless the illness or condition is the result of an injury, whether intentional or not.

Unintentional Injury

An injury that is judged to have occurred without anyone intending that harm be done.

Variable

An individual aspect of an entity or phenomenon under investigation that can differ among cases, e.g., the variable "gender" can be "male" or "female."

Vector

The mechanism by which potentially injurious energy is transmitted to the host, e.g., a motor vehicle, a gun.

Violence

The use of physical force with the intent to inflict injury or death upon oneself or another, or the use of, or threat of, physical force to control another.

Woman Battering

A syndrome characterizing a relationship in which a woman is regularly subjected to violent and controlling behavior by her partner(s).

Years of Potential Life Lost (YPLL)

A statistical measure calculated by subtracting an individual's age at death from a predetermined life expectancy. The CDC generally uses the age of 65 for this purpose.

Acronyms

AAP	American Academy of Pediatrics	MMWR	Morbidity and Mortality Weekly Report
ACEP	American College of Emergency Physicians	NASS	National Accident Sampling System
ACS	American College of Surgeons	NCHS	National Center for Health Statistics
ANSI	American National Standards Institute	NCS	National Crime Survey
APHA	American Public Health Association	NCPCA	National Committee for the Prevention of Child Abuse
ASTM	American Society of Testing Materials	NEISS	National Electronic Injury Surveillance System
ATS	American Trauma Society	NHTSA	National Highway Transportation Safety Administration
ATV	All terrain vehicle	NIH	National Institutes of Health
BAC	Blood alcohol concentration	NIMH	National Institutes of Mental Health
CDCP	Centers for Disease Control and Prevention (aka CDC)	NSBC	National Safe Boating Council
CPR	Cardiopulmonary resuscitation	NSC	National Safety Council
CPS	Child Passenger Safety	OSHA	Occupational Safety and Health Administration
CPS	Child Protective Services	OEMTP	Office of Emergency Medical & Trauma Prevention (WA)
CHARS	Comprehensive Hospital Abstract Reporting System (hospital discharge data)	OJJDP	Office of Juvenile Justice & Delinquency Prevention
CPSC	Consumer Products Safety Commission	PFD	Personal Flotation Device
DHHS	Department of Health and Human Services (federal)	PSA	Public Service Announcement
DOT	Department of Transportation (federal)	RUaD	Reduce Underage Drinking
EMS	Emergency Medical Services	TAC	Technical Advisory Committee (WA)
EMS-C	Emergency Medical Services for Children	USCG	United State Coast Guard
EMTCC	Emergency Medical and Trauma Care Council	UCR	Uniform Crime Reports
EMT	Emergency Medical Technician	USDA	U.S. Department of Agriculture
ER/ED	Emergency Room/Department	WSDOH	Washington State Department of Health (DOH)
FARS	Fatal Accident Reporting System	WSLCB	Washington State Liquor Control Board
FMCSA	Federal Motor Carrier Safety Administration	WSP	Washington State Patrol
GCS	Glasgow Coma Score	WSPR	Washington State Parks & Recreation
GSW	Gunshot wound	WSSRC	Washington State Safety Restraint Coalition
IPPE	Injury Prevention & Public Education	WTSC	Washington Traffic Safety Commission
ISS	Injury Severity Score	YPLL	Years of Potential Life Lost

Appendix D

Haddon Matrix

Dr. William Haddon Jr.'s list of 10 general strategies was designed to conceptualize prevention opportunities. Prevent the creation of the hazard (for example, stop producing poisons):

1. Reduce the amount of the hazard (e.g., package toxic drugs in smaller, safer amounts).
2. Prevent the release of a hazard that already exists.
3. Modify the rate or spatial distribution of the hazard (e.g., require automobile air bags).
4. Separate, in time or space, the hazard from that which is to be protected (e.g., use sidewalks to separate pedestrians from automobiles).
5. Separate the hazard from that which is to be protected by a material barrier (e.g., insulate electrical cords).
6. Modify relevant basic qualities of the hazard (e.g., make the space between crib slats too narrow to strangle a child).
7. Make individuals more resistant to the hazard (e.g., use protective devices such as helmets, Personal Floatation Devices, or seatbelts).
8. Counter the damage already done by the hazard (e.g., provide emergency medical care).
9. Stabilize, repair, and rehabilitate the individual damaged (provide acute care and rehabilitation facilities).

Haddon's matrix that classifies injury by phases and factors:

1. **Pre-event** (before the crash or other injury event):
What affects the likelihood that it will occur?
2. **Event** (during the crash or other injury event):
What affects the likelihood that someone will be injured?
3. **Post-event** (after the crash or other injury event):
What affects the outcomes once an injury has occurred?

Appendix E

Community Building Tools

The *Spectrum of Prevention* is a systematic tool that promotes a multifaceted range of activities for effective prevention. Originally developed by Larry Cohen while working as Director of Prevention Programs at the Contra Costa County Health Department, the Spectrum is based on the work of Marshall Swift in treating developmental disabilities. It has been used nationally in prevention initiatives targeting traffic safety, violence prevention, injury prevention, nutrition, and fitness.

The Spectrum identifies multiple levels of intervention and helps people move beyond the perception that prevention is merely education.

The Spectrum is a framework for a more comprehensive understanding of prevention that includes six levels for strategy development. These levels, delineated in the table below, are complementary and when used together produce a synergy that results in greater effectiveness than would be possible by implementing any single activity or linear initiative. At each level, the most important activities related to prevention objectives should be identified. As these activities are identified they will lead to interrelated actions at other levels of the Spectrum.

The Spectrum of Prevention	
Spectrum Level	Definition of Level
6. Influencing Policy and Legislation	Developing strategies to change laws and policies to influence outcomes.
5. Changing Organizational Practices	Adopting regulations and shaping norms to improve health and safety.
4. Fostering Coalitions and Networks	Convening groups and individuals for broader goals and greater impact.
3. Educating Providers	Informing providers who will transmit skills and knowledge to others.
2. Promoting Community Education	Reaching groups of people with information and resources to promote health and safety.
1. Strengthening Individual Knowledge and Skills	Enhancing an individual's capability of preventing injury or illness and promoting safety.

Spectrum of Prevention Example

A Lifetime Commitment to Violence Prevention at the County Level

The following checklist is based on the *Spectrum of Prevention*.

Example adopted from www.preventioninstitute.org

Spectrum Level	Business Sector Activities to Advance Violence Prevention Efforts
6. Influencing Policy and Legislation	<ul style="list-style-type: none"> • Support policy through testifying to policymakers and advocating for prevention • Write op ed pieces and letters to the editor in support of violence prevention • Support candidates who are committed to violence prevention • Meet with elected officials to let them know your violence concerns and commitment to violence prevention
5. Changing Organizational Practices	<ul style="list-style-type: none"> • Adopt a neighborhood or school by providing volunteer hours, youth job training, in-kind donations, etc., to that neighborhood • Establish a grant making program to fund violence prevention efforts in your community • Implement family-friendly practices, including providing employees with time off to attend events at their children's schools (first day of school, parent teacher conferences) • Establish clear safety and violence prevention policies • Donate money to support development and implementation of the Alameda County Blueprint and other violence prevention efforts in the county
4. Fostering Coalitions and Networks	<ul style="list-style-type: none"> • Form networks and coalitions with other businesses to promote violence prevention policies in the workplace and community • Encourage employees to serve on boards of community based organizations • Participate on Alameda County's Violence Prevention Leadership Council
3. Educating Providers	<ul style="list-style-type: none"> • Train employees how to apply their specific expertise or the expertise of the business to violence prevention (e.g. banks can train young people to balance checking accounts, printers can print informational information, phone companies can provide support lines, bookstores can establish literacy programs, etc)
2. Promoting Community Education	<ul style="list-style-type: none"> • Establish hate-free and violence-free zones in your workplace to build awareness about these issues and to set a tone for employees and customers that violence and hatred will not be tolerated • Hold community education campaigns when violence prevention legislation is introduced • Incorporate violence prevention messages into your advertising, information about your business, and into signs and posters at the workplace • Encourage your employees to speak out against violence and about violence prevention at community events
1. Strengthening Individual Knowledge and Skills	<ul style="list-style-type: none"> • Provide mentoring and career opportunities to at risk youth • Establish internship and apprentice programs for youth as well as adult and youth ex-felons • Provide anti-violence trainings (domestic violence, sexual assault, workplace violence) and diversity trainings to employees • Provide violence prevention resource referrals to employees • Provide coverage that includes access to mental health and substance abuse services

The Eight Steps to Effective Coalition Building

Increasingly, the problems that communities need to resolve are complex, requiring comprehensive solutions. Addressing issues such as health promotion and chronic disease prevention requires the inclusion of people from diverse backgrounds and disciplines. Work in partnerships, collaborations, and coalitions can be challenging but a powerful tool for mobilizing individuals to action, bringing community issues to prominence, and developing policies. These associations are also an effective means of integrating health services with other human services so that resources are not wasted and efforts are not needlessly duplicated. Coalitions are often best equipped to utilize the resources and findings of participants and apply them more effectively than any single group or organization.

The Eight Steps to Effective Coalition Building is a framework developed by Larry Cohen, et. al., for engaging individuals, organizations, and governmental partners invested in addressing community concerns. The complete document offers concrete steps towards building effective partnerships and provides tips for making collaborations and partnerships work. Rather than creating new projects or programs, effective coalitions can harness existing resources to develop a unique community approach and achieve results beyond the scope of one single institution or organization.

Developing Effective Coalitions: The Eight-Step Process

1. Analyze program objectives, determine whether to form a coalition.
2. Recruit the right people.
3. Devise preliminary objectives and activities.
4. Convene the coalition.
5. Anticipate necessary resources.
6. Develop a successful structure.
7. Maintain coalition vitality.
8. Improve through evaluation.

The full document *Developing Effective Coalitions: An Eight-Step Guide*, written by Larry Cohen, Nancy Baer, and Pam Satterwhite is available at: www.preventioninstitute.org

Additional Coalition Building Resources

The Community Tool Box, a free community organization resource site owned and maintained by the University of Kansas
<http://ctb.ku.edu/en/default.aspx>

The Prevention Institute
www.PreventionInstitute.org

For More Information

Washington State Department of Health
Injury and Violence Prevention Program
PO Box 47853
Olympia, WA 98504
360-236-2860

For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY 711).



PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND
HEALTHIER WASHINGTON

This Prevention Guide was supported by grant #1U17CE002039-01 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not represent the official views of the Centers for Disease Control and Prevention.