



Washington State Injury and Violence Prevention Guide



June 1, 2008

Each year more than 3,000 people in Washington die because of injury. It's the leading cause of death and disability for people in our state between the ages of 1 and 44. Many of these injuries are predictable and preventable. Since starting in 1989, the Injury and Violence Prevention Program has made great strides to improve our health.

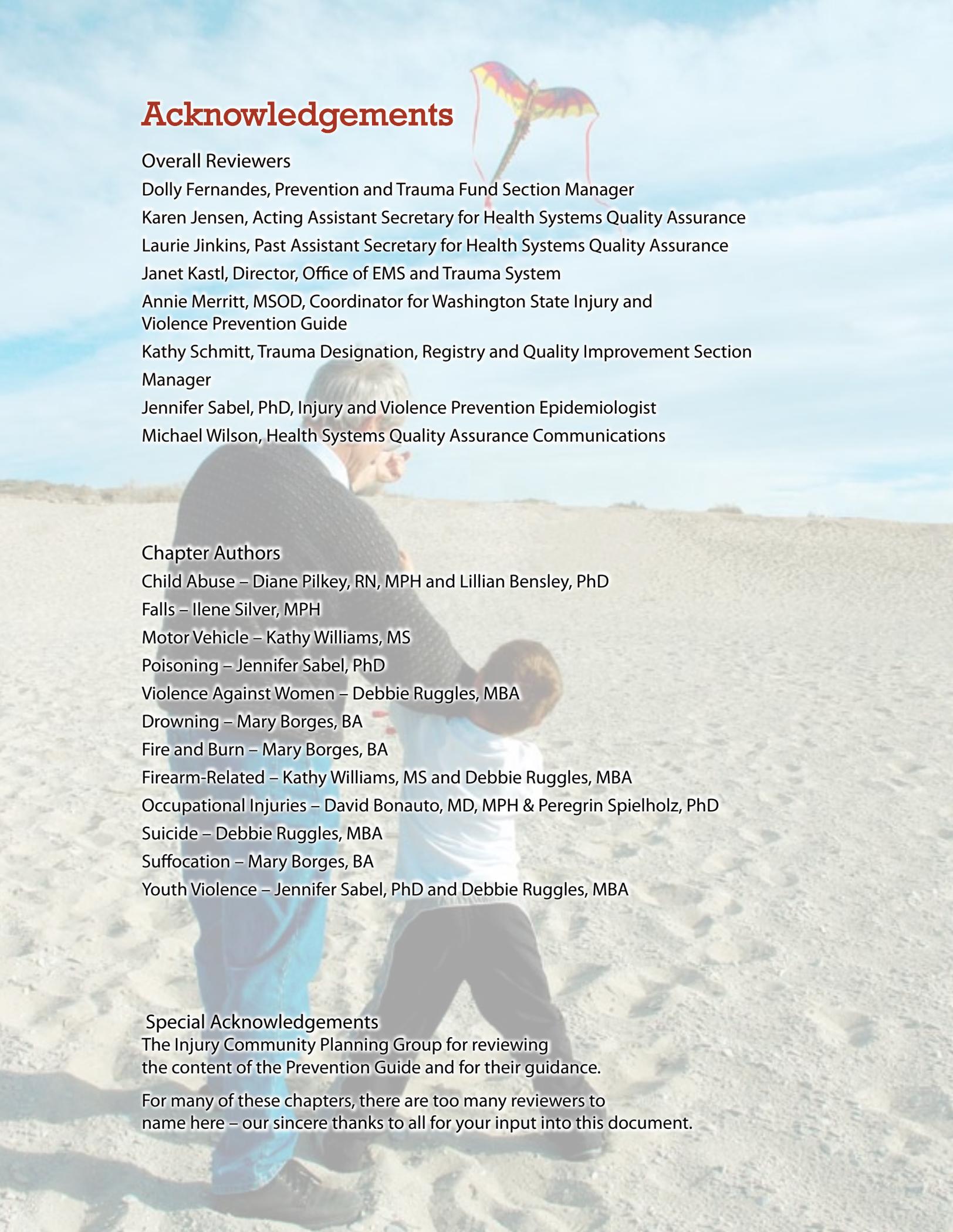
The Washington State Injury and Violence Prevention Guide is a wonderful tool to help individuals, communities, and organizations throughout our state. This guide is the hard work of many who are committed to reducing injury and violence.

I thank the experts who work with injury and violence prevention and helped to create this guide. This includes people from state agencies, educational institutions, nonprofit organizations, local health departments, and private industry. We must educate each generation about the best way to prevent injuries and save lives. We must promote prevention education and information, and support laws that empower families and communities to work on injury and violence prevention.

A handwritten signature in blue ink that reads "Mary C. Selecky". The signature is fluid and cursive.

Mary C. Selecky, Secretary
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June 2008

EXECUTIVE SUMMARY

We tend to accept injuries as fate. Motor vehicle crashes, debilitating falls, poisonings, and violence against women occur on such a regular basis that people believe they are normal. This is not true. Our biggest challenge in Washington State is to change the way our citizens and communities view injuries. Injuries are predictable and preventable. They are not accidents.

Injuries are the leading killer of our state's children and adults from 1-44 years of age. In 2006, over 3,700 Washington residents died from injuries. There were over 78,000 injury-related hospitalizations. Injuries are the primary killer of children and young adults 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 2005, 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 was to help Washington State develop and implement a comprehensive injury and violence prevention plan.

Washington State produced this plan, the *Washington State Injury and Violence Prevention Guide*, for those working on prevention programs. The guide consists of 12 injury and violence prevention chapters with four priority areas to prevent injuries and violence, disability, and premature death. It is a product of three years of collaborative work by the Injury Community Planning Group (ICPG) and the staff of the Department of Health and the Department of Labor and Industries.

This guide includes injury data, goals, evidence-based strategies, and promising or experimental prevention strategies for each injury area. The data and evidence-based 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.

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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

The intent of injury can be important to determine target audiences, effective interventions, program planning and evaluation. Injuries are grouped into two categories identified by the “manner” in which the injury occurs: *unintentional and intentional*. Injuries can 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 2005, 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 117,000 Americans died in 2005 from unintentional injuries. These include, for example, injuries to children who fall from a bicycle or are burned in a house fire.

Intentional injuries include all forms of violence: 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

What is Injury and Violence Prevention?

An injury involves the interaction of several factors and 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 appendices 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. The guide includes information for planning, goal setting, marketing, coalition building, and implementation of evidence-based strategies at the state and local levels.

The Injury Community Planning Group (ICPG) envisioned 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 including:

- Injury and violence prevention practitioners in governmental agencies, tribal governments and nonprofit organizations in Washington State.
- 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 that want to implement recommended strategies. This guide is to be dynamic, usable, and a functional document that is updated regularly for ongoing, viable use by all in Washington State.

Included as an added resource, the four priority areas have an additional Department of Health (DOH) Implementation Plan. These specific plans provide an outline of DOH's Injury and Violence Prevention efforts through 2010.

Development of the Washington State Injury and Violence Prevention Guide

In August 2005, 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). This grant was intended 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.

DOH invited experts from private, public, clinical, professional, and nonprofit injury and violence prevention control organizations around Washington State to contribute to the guide. This group is the Injury Community Planning Group (ICPG).

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 or experimental prevention strategies
Promising strategies are those where not enough well-designed research studies have been conducted to show their effectiveness. Experimental strategies have a strong theoretical basis, but generally have not yet had research to show their effectiveness.

Washington State's Priority Injuries, 2006-10

In June 2006, the ICPG identified the following four priorities for the injury and violence prevention community:

- Falls Among Older Adults
- Motor Vehicle-Related Injuries and Deaths
- Poisoning
- Violence Against Women

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. Poisoning was chosen because it is a leading cause of unintentional injury-related death and unintentional hospitalization. Poisoning death

rates jumped by 395% from 1990-2006. In Washington State, violence against women is a major health concern. There is insufficient consistent and accurate information for this. There are no current proven strategies for intervention.⁴ It was selected to highlight the magnitude of the issue.

The ICPG also identified eight other areas as significant:

- Child Abuse and Neglect
- Drowning
- Fire and Burn
- Firearm-Related
- Occupational Injuries
- Suicide
- Suffocation
- Youth Violence

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?

As priorities, motor vehicle related injuries, falls among older adults, poisoning, and violence against women all disproportionately affect specific populations: older adults, young males, males between 35-54 years of age, and women and girls.

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

- Injuries are predictable, and preventable.⁵
- 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 2006, over 3,700 Washington State residents died from injuries, and there were over 78,000 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 about 10% between 1999 and 2006, after a two-decade period of decline. Unintentional poisonings and falls among those 65 years old and older made up about 80% of the increase observed. Reductions have 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 our state across the age spectrum. Rates of some injuries, including falls among older adults and poisoning, are getting worse.

Because injuries and violence have their greatest impact on the young, their impact on years of potential life lost (YPPL) is great. By the year 2020, motor vehicle crashes will globally rank second behind heart disease in years lost, ahead of cancer and HIV.

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 safety products or programs that could save their lives.

Cost of Injuries

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

Unlike other leading causes of death, tobacco use or poor diet, deaths due to injuries affect the young and old alike. This results in life-years lost due to injuries exceed those from other preventable causes.⁶

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.⁶

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.⁶

Leading Causes of Death

Washington State, 2006

Rank	Age <1	Age 1-4	Age 5-14	Age 15-24	Age 25-44	Age 45-64	Age 65+	Total
1	Congenital Anomalies 89	Unintentional Drowning 8	Cancer 16	Unintentional MV Traffic 200	Cancer 334	Cancer 2,964	Heart Disease 8,713	Cancer 11,003
2	Sudden Infant Death Syndrome 50	Homicide	Unintentional Drowning 13	Suicide 115	Unintentional Poisoning 305	Heart Disease 1,586	Cancer 7,638	Heart Disease 10,551
3	Short Gestation & Low Birth Wt 42	Congenital Anomalies 7	Unintentional MV Traffic 11	Unintentional Poisoning 65	Suicide 239	COPD 343	Alzheimer's 2,434	Stroke 2,711
4	Maternal Compl of Pregnancy 34	Unintentional MV Traffic 6	Unintentional Poisoning 7	Homicide 56	Heart Disease 236	Diabetes 341	Stroke 2,395	COPD 2,648
5	Compl of Placenta, Cord & Membranes 25	Cancer 6	Congenital Anomalies 6	Cancer 42	Unintentional MV Traffic 169	Cirrhosis 334	COPD 2,290	Alzheimer's 2,466
6	Unintentional Suffocation 16	Condition w/Origin Perinatal Period 4	Suicide 5	Unintentional Drowning 26	Homicide 92	Unintentional Poisoning 332	Diabetes 1,137	Diabetes 1,539
7	Bacterial sepsis 13	Unintentional Pedestrian Other 3	Influenza & Pneumonia 3	Heart Disease 13	Cirrhosis 65	Suicide 308	Pneumonia/Influenza 689	Pneumonia/Influenza 810
8	Neonatal Hemorrhage 8	Unintentional Suffocation 3	Unintentional Struck by 3	Congenital Anomalies 11	Diabetes 59	Stroke 271	Unintentional Fall 537	Suicide 796
9	Newborn compl of pregnancy 7	Septicemia 3	Unintentional Fire & Burn 2	Unintentional Fire & Burn 5	Stroke 39	Unintentional MV Traffic 196	Parkinson's 456	Unintentional Poisoning 745
10	Necrotizing Enterocolitis 6	Unintentional Fire & Burns 2	Homicide 1	Unintentional Fall 4	HIV 31	Viral Hepatitis 113	Renal Disease 394	Unintentional MV Traffic 687

Source: Washington State Department of Health, Center for Health Statistics, January 2008.

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.⁷

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.”⁸

In Washington State, many causes of injury death are lowest for Asian and Pacific Islanders 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, elderly females are at highest risk for fall-related injuries.

Many of the race and ethnic disparities reflect income and education. Some race and ethnic groups carry an unequal burden of poverty and low levels of formal education. The 2000 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 health care 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 2004 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, and carry a weapon at school compared to youth without disabilities.

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 in 2001, about half of all alcohol-attributable deaths were due to an injury.⁹ In Washington State from 2001-2005, impairment from either alcohol or drugs accounted for about 6% of motor vehicle collisions, 22% of all disabling injuries, and 47% 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. Alcohol and other drug use 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 for 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 and zero tolerance laws, and increasing the price of alcohol have been effective at 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 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 who have mental illness may have a different pattern of unintentional injury and hospital stays.

One study found that those with a mental illness were more likely to be injured by falling or being hit by cars 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

Recent advances in developing effective treatments for mental and substance abuse disorders may help decrease injuries.

Prevention Trends

Community 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 has been a growing recognition of the need for a comprehensive approach that integrates community 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.

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 Data suggest that the positive effects of interventions fade over time. One strategy that looks promising is the use of “social marketing” or media interventions to reinforce prevention messages and to sustain behavior change.

The *Spectrum of Prevention* 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

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CHILD ABUSE AND NEGLECT

DESCRIPTION:

Behavior that is outside the norms of conduct and entails 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 substantiated victims of abuse and neglect as reported by Child Protective Services.



Washington State Goal Statement

To decrease deaths and hospitalizations due to child abuse and neglect

National Healthy People 2010 Objectives

- Reduce deaths from unintentional falls from 4.7 deaths per 100,000 in 1998 to 2.9 deaths per 100,000
- For older adults, reduce rate of hip fracture. For females age 65 or older, reduce hip fractures from 1,056 per 100,000 in 1998 to 416 per 100,000. For males age 65 or older, reduce hip fractures from 593 per 100,000 in 1998 to 474 per 100,000

Statement of the Problem in Washington State

Child abuse and neglect causes direct suffering and does long-term damage to physical and emotional well being.^{1, 2, 3, 4, 5} Even fatalities due to injuries such as drownings or suffocation can be associated with abuse and neglect. Child abuse and neglect increases the risks of:

- Delinquency.
- Substance abuse.
- Adolescent pregnancy.
- Adverse health behaviors.
- Suicide attempts.
- Human Immunodeficiency Virus (HIV) risk behaviors as the affected child grows.

Abused or neglected children are arrested four to eight times more often for juvenile crimes and are twice as likely to be arrested as adults. They are also at higher

risk for school failure.⁶ Maltreated children are 25% more likely to suffer from mental illness.⁶ Childhood abuse and other adverse childhood experiences contribute to the development of chronic diseases and poor health decades later.⁷

Washington State Data Compared to United States Data

In 2006, 41,455 children were referred to Child Protective Services (CPS) for a rate of 26.8 per 1,000 children under age 18 (unduplicated data). 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 rate of substantiated are comparable.

Age and Gender

Children ages 0-5 had the highest rates, followed by children 6-11 and then children 12 to 17-years-old. Children from 0-3 are at the greatest risk of any abuse. They have the highest abuse and neglect rates, are the most likely to experience recurrence, and are the most likely to die from the abuse and neglect they experience.

Children 0-3 are probably the most important group to target for prevention. Early brain development research and nurturing theory demonstrate the huge potential to improve developmental outcomes during the critical first years. In addition, during this period, parents are most willing to receive information and support.

Race and Ethnicity

American Indian and Alaska Native children had the highest rates of maltreatment, followed by African-American, Hispanic, white, and Asian/Pacific Islander children. Rates were slightly higher for girls than for boys.

Children in Referrals Accepted for Investigation by CPS Washington	Washington State Rate per 1,000
Total Rate (2004-2006)	27.7
Gender (2004-2006)	
Boys	27.0
Girls	28.3
Age Group (2004-2006)	
0-5	39.9
6-11	28.2
12-17	18.8
Race/Ethnicity (2003-2005)	
Non-Hispanic African American	49.1
Non-Hispanic American Indian Alaska Native	75.1
Non-Hispanic Asian & Pacific Islander	10.3
Non-Hispanic White	25.1
Non-Hispanic Multiple Races	39.7
Hispanic	31.3

Washington State Child Death Review Data

The Child Death Review (CDR) process is a tool used in local communities to identify circumstances leading to children's deaths; collect and report accurate, uniform information; and improve communication and collaboration around children's safety. In 2003, local child death review teams identified 24 children (a rate of 1.6 per 100,000) for whom physical abuse or neglect was a factor in their deaths. In 2003, the estimated national rate was 2.0 per 100,000. Because states vary in how they investigate and report child fatalities, we cannot compare these rates.

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

In a 2004 survey of adults, about 20% of Washington State women (ages 18 and over) and 8% of men reported a childhood history of sexual abuse. Males and females reported a similar prevalence of childhood physical abuse; about 12% of men and 10% of women reported physical abuse as a child.⁸ In 2006, about 23% of Washington State youth (about 15,000-21,500 students) surveyed in 8th, 10th, and 12th grades report being physically abused by an adult at some point in their lives.⁹

Risk and Protective Factors

Child abuse and neglect has been consistently associated with:^{10, 11}

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

Other family characteristics that contribute to abuse risk include:^{12, 13}

- Substance abusing parents.
- Parents who were abused as children.
- Parents with psychological diagnoses such as antisocial personality or depression.

Children in families with domestic violence are also at increased risk for abuse. Being exposed to domestic violence may be abusive in itself.¹⁴ 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.

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 unlikely to be abusive or neglectful.¹⁵

Recommended Strategies

Evidence-Based Strategy

Provide support programs for parents, especially for first time parents

The purpose of new parent or prenatal support programs is to prepare people for the job of parenting. Such programs should include support during both the prenatal and postnatal periods to ease the difficulties associated with having a new infant at home.

The most innovative and holistic prevention approach for of educating and supporting the at-risk family is the Early Childhood Home Visiting Program.¹⁶ Early childhood home visiting programs are effective in addressing the needs for education and support of at risk families. Home visiting is one of the few-evidence-based programs shown to reduce child abuse and neglect. Several national programs such as the Nurse Family Partnership that also reduce child abuse and neglect.¹⁷ Studies have shown that home visiting has reduced child maltreatment episodes by 40%.^{18,19} Currently, there are Nurse Family Partnership Programs in Jefferson, King, Mason, Pierce, Skagit, Snohomish, Thurston, and Yakima Counties. All the programs enroll first time, low-income mothers early in their pregnancy and provide frequent home visits through their child's second birthday. In addition, most home visiting programs seek to create change parenting:

- Social support.
- Practical assistance, sometimes in the form of case management that links families with other community services.
- Education about parenting or child development.

Promising or Experimental Strategies

Train parents in promoting positive child and youth development

Parent-focused interventions improve child-rearing competence. Stress management is effective at reducing risk factors associated with physical child abuse. The Incredible Years²⁰ is a research-based program that has reduced children's aggression and behavior problems and increased social competence at home and at school. The Family Connections Project provides:

- Emergency assistance.
- Social support.
- Family assessment.
- Customized interventions.

In one well-designed study, The Family Connections Project reduced child abuse and neglect.²¹ Other programs with varying levels of research support include:

- Parents as Teachers.
- The Nurturing Parent Programs.
- Triple-P-Positive Parenting Program.
- Strengthening Multi-Ethnic Families.
- Stewards of Children.

Another promising intervention is Parent-Child Interaction Therapy. This is a parent training and skills building program for parents of young children with conduct disorders that focuses on the quality of the child-parent relationship and interactions. One randomized trial with physically abuse parents has shown fewer future physical abuse reports after training.²²

Improve identification and screening
Professionals who work with children, such as health care providers and teachers, are required by Washington State law to report suspected child abuse to Child Protective Services (CPS). Expertise in identifying and reporting child abuse varies. Many health care facilities use multidisciplinary teams to improve identification and case management of maltreated children. Health care professional organizations have initiated training programs to increase knowledge for recognizing, diagnosing, documenting, and treating child abuse.²³ In Washington State, you can report child abuse and neglect by calling **1-866-ENDHARM**.

Provide support and services for maltreated children

Treatment for maltreated children includes:

- Therapeutic day school programs.
- Day hospital programs.
- Residential programs.
- Home and clinic setting treatment.

These programs most often focus on, improving younger children's cognitive and developmental skills, and psychodynamic treatment for older children.²³

Coordination of child protective and domestic violence services

Child maltreatment and domestic violence often occur in the same families. An approach for coordinating services and support to both the adult domestic violence victim and to the children is being tested. It aims to keep the adult domestic violence victim with the children. However, the effects on child abuse are unknown at this time.²⁴

Strengthen legal approaches

Child abuse by individuals other than the caretakers, such as sexual abuse by an unrelated adult, is under law enforcement's rather than CPS' purview. If they prevent re-offense, child advocacy programs and systems for effective investigation and prosecution of perpetrators reduce risk to other children.

For More Information

Washington State

Children's Hospital Child Protection Program:

www.seattlechildrens.org/our_services/support_services/childrens_protection_program

Washington Council for Prevention of Child Abuse and Neglect web site:

www.wcpcan.wa.gov

The Washington State Childhood Injury Report web site:

www.doh.wa.gov/hsqa/emstrauma/injury/pubs/wscir/WSCIR_child_abuse_and_neglect.pdf

The Washington State Department of Health, Health of Washington State web site:

www.doh.wa.gov/HWS/

Washington State Department of Social and Health Services, Children's Administration web site:

www1.dshs.wa.gov/ca/safety/prevAbuse.asp?1

Reporting Abuse: Hotline - Call **1-866-ENDHARM** (1-866-363-4276), Washington State's toll-free, 24 hour, 7 day-a-week hotline that 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)

Child Maltreatment, Child Trends DataBank, web site:

www.childtrendsdatabank.org/pdf/40_PDF.pdf

Child Maltreatment: Fact Sheet, prepared by the Centers for Disease Control, National Center for Injury Prevention and Control, web site:

www.cdc.gov/ncipc/dvp/cmp/default.htm

National Association of Counsel for Children, web site:

www.naccchildlaw.org

Nurse Family Partnership web site:

www.nursefamilypartnership.org

Parent Child Interaction Therapy web site:

<http://pcit.phhp.ufl.edu>

Prevention Through Education and Awareness, web site:

www.childabuse.com

Prevent Child Abuse America, web site:

www.preventchildabuse.org

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- ⁹ Washington State Department of Health: Healthy Youth Survey (HYS) data, (2006). Available at: www3.doh.wa.gov/HYS/.
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- ¹¹ Barnett, O., Miller-Perrin, C. L., & Perrin, R. D. (2005). *Family Violence Across the Lifespan: An Introduction, Second Edition*. Thousand Oaks, CA: Sage.
- ¹² Ertem, I. O., Leventhal, J. M., & Dobbs, S. (2000). Intergenerational continuity of child physical abuse: How good is the evidence? *The Lancet*, 356, 814-819.
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- ¹⁶ The Guide to Community Preventive Services, www.thecommunityguide.org/violence/viol-int-homevisit.pdf.
- ¹⁷ The Nurse Family Partnership, website: www.nursefamilypartnership.org/index.cfm?fuseaction=home.
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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 2010 Objectives

- Reduce unintentional drowning deaths from 1.6 per 100,000 in 1998 to 0.9 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 issue. There is no single safety device that works in all drowning cases. Understanding and practicing the four wisdoms are critical for water safety: supervision, environment, gear, and education.

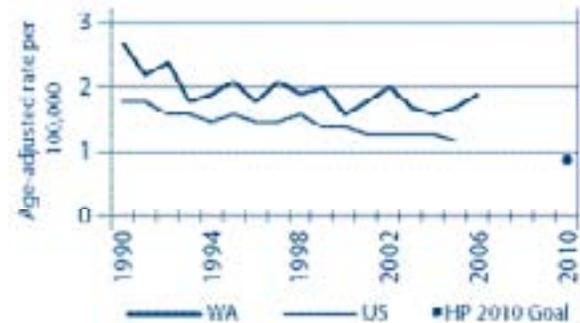
Washington State Data

Washington State unintentional drowning rates are higher than the national rate. However, over the past 17 years, drowning rates in Washington State have steadily declined. In the latest data available in 2006, the unintentional drowning rate in Washington State was 1.9 per 100,000. There were 123 state residents who died from unintentional drowning, including 16 boating-related drowning deaths.

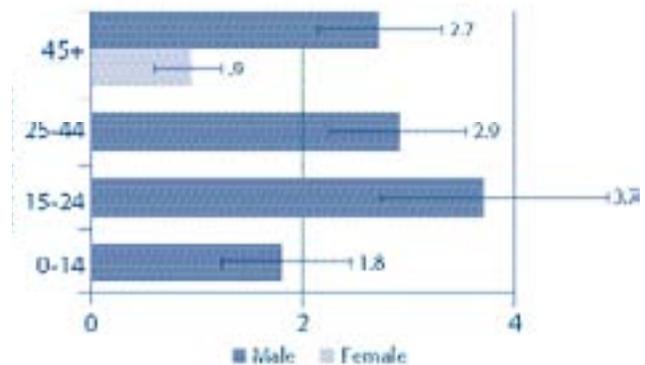
Age and Gender

From 2004-2006, males in the state were more likely to die from drowning. The highest death rates were for males age 15-24 years old. Females younger than 45 had fewer than 20 deaths. The chart does not include them.

Unintentional Drowning Deaths
Washington State & United States Death Certificates, 1990-2006



Unintentional Drowning Deaths
Age and Gender
Death Certificates, 2004-2006



Race and Ethnicity

In Washington State in 2002-2006, American Indians and Alaska Natives had the highest age-adjusted unintentional drowning death rate. A national study found that black males 5- to 24-years-old had much higher risks for drowning in swimming pools. The higher risk remained after taking income into account.¹

Washington State Child Death Review Data

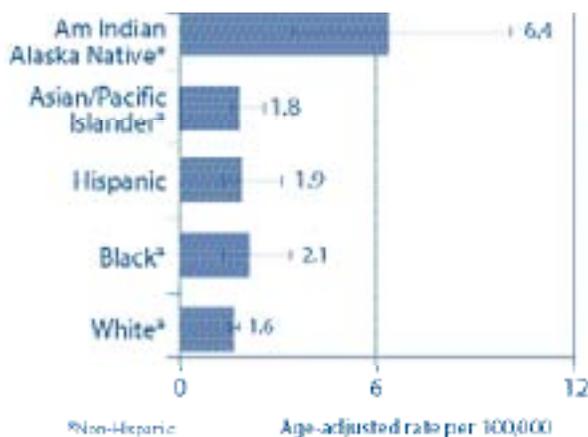
From 1999-2003, state residents ages 0-17 accounted for 125 unintentional drowning deaths or drowning deaths with an undetermined manner. Local Child Death Review Teams in the state completed 93 (74%) reviews of those 125 deaths.² Insights from this include:

- 73% of the deaths occurred in open water (in a lake, river, pond, creek, or in the Puget Sound).
- 27% of the deaths occurred in a bathtub, a hot tub, a swimming pool or a wading pool.
- Infants were more likely to drown in a bathtub.
- About 50% of children ages 1-4 drowned in open water. Most of the swimming pool deaths occurred in this age group.
- 90% of the drowning deaths of older children and adolescents occurred in open water.

Local child death review teams concluded that 85% of these deaths were preventable.

Unintentional Drowning Deaths

Race and Hispanic Origin
Death Certificates, 2004-2006



Healthy Youth Survey Data

In the 2006 Washington State Healthy Youth Survey 39% of the Grade 8 students, 30% of the Grade 10 students and 25% of the Grade 12 students said they always wear a life jacket when boating.

Emergency Department Visits and Cost Data

Nationally, for every child 14 years and younger who dies from drowning, five children receive emergency department care for nonfatal drowning injuries. More than 55% of these children require hospitalization.³ Nonfatal drownings can cause brain damage with long-term disabilities that include memory problems, learning disabilities, or permanent loss of basic functioning. The comprehensive cost of one fatal

drowning event can range from \$700,000 to \$2.8 million.⁴ For all unintentional injuries among children, drowning is the most expensive, at \$21,000 per victim.⁵

Risk and Protective Factors

Any body of water. Nationally, infants under age one most often drown in bathtubs, buckets, or toilets.⁶ Children can drown in as little as one 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.⁷

Swimming pools. These are a special hazard for unsupervised 1- to 4-year-olds. Nationally, among this age group, most drownings occur in residential swimming pools.⁶ Most young children who drowned in pools were:

- Last seen in the home.
- Had been out of sight less than five minutes.
- Were in the care of one or both parents at the time.⁷

Inadequate supervision. One in five parents believe that when lifeguards are present, the lifeguard is the main person responsible for supervising children in the water. However, the typical lifeguard-to-swimmer ratio at public swimming areas may be as high as 25 swimmers per lifeguard.⁸

Seizures. Persons with seizure disorders have a higher risk of drowning and dying from drowning. Drowning is the most common cause of unintentional injury death. The bathtub is the site of the highest drowning risk.⁹

Alcohol. Alcohol use is involved in about 25% to 50% of adolescent and adult deaths associated with water recreation.^{10, 11, 12} Alcohol influences balance, coordination, and judgment. Sun exposure, wave action, and heat heighten alcohol's effects.¹³

Boating. Boating carries risks for injury. The 2006 U.S. Coast Guard national report show that in the United States there were:

- 4,967 boating accidents.
- 3,474 boating injuries.
- 710 died in boating accidents.

Life jacket use. Among those who drowned, 90% were not wearing life jackets. It is estimated that 85% of boating-related drowning incidents could have been prevented if the victim had been wearing a life jacket.

Alcohol was involved in about 33% of all reported boating fatalities.¹⁴ In Washington from 2003-2005, there were an average of 17 boating-related deaths per year. This is about double the rate national rate.¹⁵ Six drownings involved commercial fisherman during these three years. In 2000, a Washington State survey of 7,729 persons in small boats showed that 74% of school age children and 17% of older teens and adults wore a life jacket.¹⁶

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 need to 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%).
- They could grab the life jacket quickly if they needed it (27%).
- There was no life jacket available (18%).⁸

Young children should wear life jackets whenever they are around deep water, such as on a dock or on a beach. The great majority of drowning incidents occur in small watercraft, less than 19 feet. 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, and on rafts that are less than 19 feet.

Recommended Strategies

Evidence-Based Strategies

Provide education and enforcement to reducing drownings⁹

Enforce the newly adopted International Building Code Appendix G 3109.4 for Washington State. This requires the fencing of residential pools. Studies show that four-sided pool fencing with a self-closing, self-latching gate significantly reduces the risk of drowning. Four-sided fencing specifically around the pool is superior to perimeter fencing, which allows access to the pool through the home. Studies also show that passing of legislation requiring the use of fencing is not enough to reduce drownings; the legislation should be enforced.

Provide information on pool safety, barriers, guidelines for entrapment and entanglement hazards, 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 a life jacket loaner program.

- Use incentives and discount coupons for life jackets.
- Promote mandatory boater education courses.

Increase community awareness

Funding is needed for effective public education and media campaigns, including outreach to non-English speaking and culturally diverse communities. Focus strategies on high-risk groups, including:

- Children.
- Young men ages 15 to 24.
- Boating and fishing enthusiasts.

Use coalitions and partnerships to implement programs. Messages should highlight the following drowning risk factors and prevention/safety strategies:

- Increase awareness of drownings, contributing factors, and prevention.
- Emphasize parent role modeling of life jacket use.
- Use messages that combine learning to swim with life jacket use.
- Publicize lifeguarded areas.
- Promote learning to swim and swim lessons that include open water and water survival skills.
- Use universal signage to warn of drowning risks.
- Educate on the need to choose physically safe water environments. Users need to:

- 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. Stay out of coastal waters with rip currents.
- Check water conditions, never dive or jump into unfamiliar or shallow water, and swim in designated areas only.
- Educate on what is good supervision. Good supervision means:
 - Swimming in a lifeguarded area, if possible
 - Constant observation.
 - Staying within arms-reach of children.
 - Having the capacity to affect a quick rescue.

Decrease the use of alcohol while boating

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

Promote lifeguards for high use areas

Encourage policies and regulations that emphasize water safety

- Continue to implement boating regulations 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 consistent signage.

Support standardized drowning death investigation procedures and improve data collection efforts

To investigate and track cases, provide funding, training, and well-developed state and local systems, such as the Child Death Review.

For More Information

Washington State

Child Death Review State Committee Recommendations on Child Drowning Prevention prepared by the Washington State Department of Health, June, 2004
www.doh.wa.gov/cfh/CDR/cdr_data.htm

Childhood Drowning Deaths in Washington State, May, 2003, prepared by the Washington State Department of Health for the Washington State Drowning Prevention Coalition
www.seattlechildrens.org/dp/pdf/drown_deaths_wa.pdf

Drowning Facts, prepared by Seattle King & County Public Health
www.seattlechildrens.org/dp/pdf/drowning_fact_sheet.pdf

Drowning Prevention and Water Safety Information, prepared by the Washington State Drowning Prevention Network and Seattle Children's Hospital & Regional Medical Center
www.seattlechildrens.org/dp

Harborview Injury Prevention & Research Center, Best Practices
<http://depts.washington.edu/hiprc/practices/topic/drowning/fencing.html>

Loss Prevention Review Team, Drowning Prevention, prepared by Washington State Parks and Recreation Commission
 Washington State Department of Health Injury & Violence

Prevention Program, Washington State Childhood Injury Report, 2004

www.doh.wa.gov/hsqa/emstrauma/injury/pubs/wscir/default.htm

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

Washington State Drowning Prevention Network
www.drowning-prevention.org

National

Activities to Promote Water Safety Awareness, developed by the Virginia Water Safety Coalition
www.watersafety.org

Centers for Disease Control and Prevention, Fact sheet on drowning
www.cdc.gov/ncipc/factsheets/drown.htm

Clear Danger: A National Study of Childhood Drowning and Related Attitudes and Behaviors
www.usa.safekids.org/NSKW.cfm

Research Report - Pool and Spa Drowning: A National Study of Drain Entrapment and Pool Safety Measures
www.usa.safekids.org/water/documents/PoolSpaDrowning.pdf.U.S.

Coast Guard-Boating Safety
www.uscgboating.org

Endnotes

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- ⁶ Brenner R.A., Trumble A.C., Smith G.S., Kessler, E.P. & Overpeck, M. D. (2001). Where children drown. *United States*, 1995. *Pediatrics*, 108(1), 85-90.
- ⁷ National Safe Kids Campaign (NSKC) Drowning Fact Sheet (2005). Washington (D.C.): NSK.
- ⁸ Cody, B.E., Quraishi, A.Y., Dastur, M.C., Mickalide, A.D. (2004). Clear danger: A national study of childhood drowning and related attitudes and behaviors. Washington (D.C.): National SAFE KIDS Campaign, www.usa.safekids.org/NSKW.cfm.
- ⁹ Quan, L., Bennett, E. & Branche, C. (2006). Interventions to prevent drowning. In Doll, L., Bonzo, S., Mercy, J., Sleet, D., (Eds). *Handbook of injury and violence prevention*. New York: Springer.
- ¹⁰ Howland, J. & Hingson, R. (1988). Alcohol as a risk factor for drownings: A review of the literature (1950–1985). *Accidents Analysis and Prevention*, 20(1), 19-25.
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- ¹² Quan, L. & Cummings, P. (2003). Characteristics of drowning by different age groups. *Injury Prevention*, 9, 163-168.
- ¹³ Smith, G.S. & Kraus, J.F. (1988). Alcohol and residential, recreational, and occupational injuries: A review of the epidemiologic evidence. *Annual Review of Public Health*, 9, 99-121.
- ¹⁴ U.S. Coast Guard, Department of Homeland Security. (2007). Boating Statistics [online]. Retrieved April 10, 2008 from www.uscgboating.org/statistics/Boating_Statistics_2006.pdf.
- ¹⁵ Centers for Disease Control and Prevention, National Centers for Injury Prevention and Control. (2007). Web-based injury statistics query and reporting system (WISQARS). 2004 data. Retrieved August 22, 2007 from www.cdc.gov/ncipc/wisqars.
- ¹⁶ Children's Hospital & Regional Medical Center and Washington State Department of Health, Office of Emergency Medical and Trauma Prevention. (2000). Personal Flotation Device Observation Study.
- ¹⁷ Thompson, D.C. & Rivara, F.P. (2000). Pool fencing for preventing drowning in children (CD001047). *Cochrane Database of Systemic Reviews*.

FALLS

DESCRIPTION:

All unintentional fall-related deaths and hospitalizations.

This section is a priority area for the Washington State Department of Health.



Washington State Goal Statement

To reduce deaths and hospitalizations caused by falls among older adults

National Healthy People 2010 Objectives

- Reduce deaths from unintentional falls from 4.7 deaths per 100,000 in 1998 to 2.9 deaths per 100,000
- For older adults, reduce rate of hip fracture.
For females age 65 or older, reduce hip fractures from 1056 per 100,000 in 1998 to 416 per 100,000.
For males age 65 or older, reduce hip fractures from 593 per 100,000 in 1998 to 474 per 100,000

Statement of the Problem in Washington State

In 2006, falls was the leading cause of injury-related hospitalizations in Washington State. There were almost 19,000. Falls were the third leading cause of injury-related deaths, with 656 deaths. Adults age 65 or older had over two thirds of the hospitalized falls (12,502 hospitalizations) and 82% (537) of fall-related deaths.

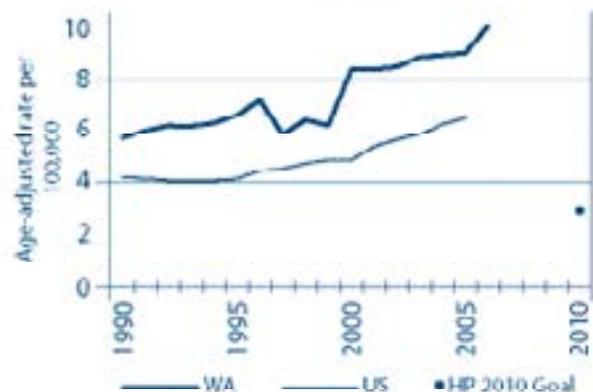
Washington State Data

In 2006, Washington State's unintentional death rate from falls of 10.2 per 100,000 exceeded the Healthy People 2010 Objective of 2.9. It was more than double the national baseline of 4.6 deaths per 100,000 in 1999.

Older adults are the population at greatest risk for unintentional falls. Children and workers are two other groups at risk for falls. Second to motor vehicle crashes, the National Institute for Occupational Safety and Health reports that falls and homicide, with the same rate, are the second leading cause of occupational injury death.¹

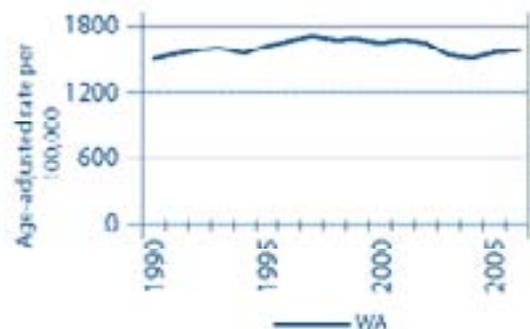
Unintentional Fall Deaths

Washington State & United States Death Certificates, 1990-2006



Unintentional Fall Hospitalizations Among Older Adults

Washington Hospital Discharge Data, 1990-2006

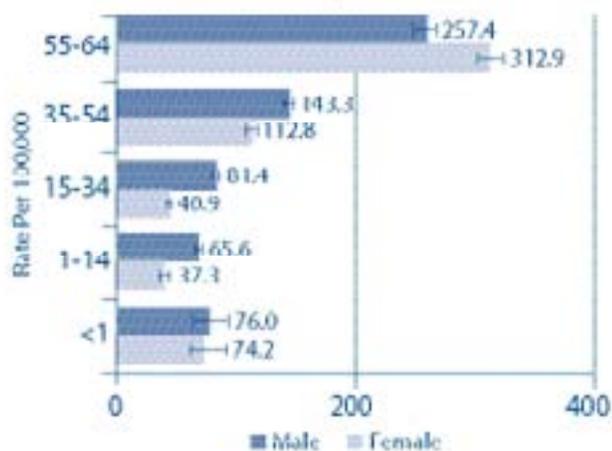


Age and Gender

After infancy, the risk of falling increases rapidly with age. Older women have the highest fall hospitalization rates. One of the major risk factors for falling is being a female, age 80 or older.

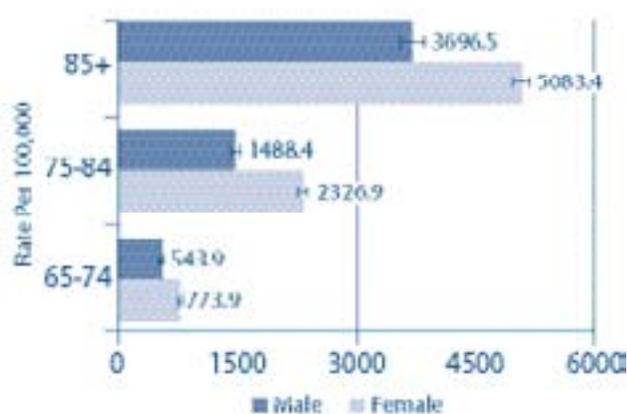
Nonfatal Unintentional Falls

Age and Gender, Ages <1-64
Washington Hospital Discharge Data, 2004-2006



Nonfatal Unintentional Falls

Age and Gender, Ages 65-85+
Washington Hospital Discharge Data, 2004-2006



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 protective reflexes. These make even a mild fall particularly dangerous.² Potential age-related risk factors for falls include:

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

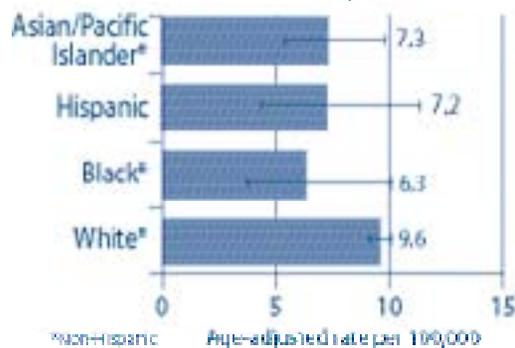
Washington State has one of the most rapidly aging populations in the country.³ In 2006, there are 726,665 residents age 65 or older, and that number is projected to reach 1.2 million by 2020. After 2015, this population group is expected to show the most rapid growth.⁴

Race and Ethnicity

From 2004-2006, fall deaths in Washington State are highest among whites. American Indians and Alaska Natives had fewer than 20 fall deaths. The chart does not include this group.

Fall Deaths

Race and Hispanic Origin
Death Certificates, 2004-2006



Falls Among Older Adults

Falls are a major health problem among older adults. In the United States, one out of three people age 65 or older living in a community fall at least once a year. Fall-related injuries cause significant mortality, disability, loss of independence and early admission to nursing homes. Fall rates increase sharply with advancing age.⁵ The 12,502 hospitalizations in 2006 of older adults due to falls was an increase of about 300 from the year before. Falls among older adults are the leading cause of injury hospitalizations in Washington State. In Washington State from 1990-2006, the hospitalization rate for falls among adults age 65 or older increased 12%. Women have much higher rates of fall hospitalizations, but men have higher rates of fall deaths.

Falling has been found to be associated with subsequent admission to a nursing home. In 2005, among Washington State seniors who were hospitalized for a fall, 22% were released to their home under self-care and about 59% were moved to skilled nursing facilities or to 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.⁶

Costs Associated with Falls

The costs of health care associated with treating fall-related injuries and fractures are staggering. In 2000, the national lifetime medical costs for treatment for falls were estimated at \$19.2 billion. This was more than the lifetime costs for treatment of motor vehicle crashes, estimated at \$14 billion. Because falls are more likely to occur among older adults, in 2000 the national cost for treatment of fall-related injuries accounted for 34% of the total medical costs of injuries even though falls accounted for only 23% of all injuries.⁷

Risk Factors for Falls

The major risk factors for falling are diverse, and many of them can be addressed. Risk factors for falls among older adults include:

- A history of previous falls.
- Muscle weakness.
- Certain chronic conditions.
- Over age 80, female gender.
- Gait deficit.
- Balance deficit.
- Use of assistive devices.
- Taking four or more medications.
- Taking any psychoactive medications.
- Cognitive impairment.
- Visual deficit.
- Sensory impairments.
- Postural hypotension.
- Depression.⁸

The risk of falling increases with the number of risk factors present.⁹ Osteoporosis, while not a risk factor for falling, increases the likelihood of a fracture in the event of a fall.¹⁰

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.
- Slippery surfaces.
- Unstable furniture.
- Poor lighting.

For persons aged 65 years or older:

- 60% of fatal falls occur in the home.
- 30% in public places.
- 10% occur in health care institutions.⁵

Childhood Falls

Even though the rate of falls among children is markedly lower than the rate for older adults, falls are still the leading cause of injury hospitalizations for Washington State children ages 0-17. In 2006, there were 814 hospitalizations of children ages 0-17. The 2004-2006 data for this group of Washington State children indicates that fall hospitalization rates for male children are highest for teens 15-17 years old. For females, rates are highest for infants less than one, and decrease as the age of the children increases. Overall, male children were about twice as likely as female children to be hospitalized due to a fall.

Safe Kids Worldwide reports:

- Infants are at greater risk for falls associated with furniture, stairs, and baby walkers.
- Toddlers are at risk from window-related falls.
- Children age 0-14 are at higher risk of playground equipment-related falls.¹¹

Unfortunately, there are very few evidence-based recommendations to prevent these injuries.

Recommended Strategies

Evidence-Based Strategies

Several meta-analyses^{2, 12, 13} concluded that a falls risk assessment and management program is the most effective prevention. A strength and balance exercise program is the next most effective intervention. Exercise can reduce falls when used alone and when included as part of a multi-component intervention. A variety of providers have successfully intervened to prevent falls. These providers include:

- Exercise instructors.
- Nurses.
- Physical therapists.

- Social workers.
- Teams of multiple providers.

There is no evidence that either environmental modification or education is effective by itself. Studies have not demonstrated that home modification alone will reduce falls; environmental factors do play a part in about half of all home falls. When focusing on those at high risk, and when conducted by trained professionals such as occupational therapists, home assessment and modification may help reduce falls.

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

Older adults are most likely to fall due to multiple risk factors. The most effective intervention combines multi-factor risk assessments and interventions. Generally, the most effective 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 health care providers for treatment of chronic conditions that may contribute to fall risk.
- Having vision assessed and corrected.^{2,14}

Interventions that focus on high-risk individuals (for example, those who had fallen and were at increased risk of falling again) were more effective than those that targeted an unselected group of seniors based on risk factors or age. Other studies have found that a multi-factor approach has proven less effective in older adults with cognitive impairment and dementia.

Increase the availability of low cost, accessible exercise programs tailored for older adults that include strength, balance, and mobility exercises

A meta-analysis of exercise interventions found that balance training should be part of any exercise program designed to decrease falls.

Provide education to older adults on risk factors for falls 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 health care provider. These should include nurse practitioners, physician assistants, and allied health care professionals.

Develop a statewide community infrastructure to help implement comprehensive fall prevention programs.

Community partnerships should designate specific agencies to provide on-going leadership to implement the listed strategies. Essential components include:

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

Promising or Experimental Strategies

Increase community awareness

Teach parents the following:

- Supervise infants and toddlers when using a changing table or when they are on furniture.
- Use stationary activity centers in place of baby walkers on wheels.
- Use safety gates at the top and bottom of stairs.
- Move chairs and furniture away from windows.
- Install window guards that meet federal standards for emergency exits on windows.
- Open double-hung windows from the top only.
- Consistently secure children using straps on changing tables, strollers, grocery cars, and on other equipment.
- Assure that playground surfaces can absorb the shock of falls by using materials such as shredded rubber, wood chips, and sand, and by avoiding playgrounds with asphalt, concrete, grass, and dirt surfaces.

Encourage policies and regulations that prevent fall injury

- Promote schools and community parks to adopt Consumer Product Safety Commission standards for playground safety.
- Encourage people to adopt the American Society for Testing and Materials voluntary safety standards for window guards. In case of a fire, these standards ensure that window guards for single-family homes or for apartment building lower floors have simple emergency-release mechanisms.

Occupational Falls

(see Occupational Injury chapter)

Implementation Plan for Preventing Falls Among Older Adults

The four priority areas have a DOH Implementation Plan.

These specific plans provide an outline of DOH's Injury and Violence Prevention efforts through 2010.

Objectives	Implementing Organizations	Timeline
Provide consultation and education to integrate falls prevention best practices into the Area Agencies on Aging contract network services.	Washington State Department of Health, Northwest Orthopaedic Institute	ongoing
Develop and provide continuing education for health care professionals.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31,2008
Provide training to community exercise instructors, including development of a "stand alone" training manual, on the Stay Active & Independent for Life Exercise and Education Program.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31,2008
Print additional copies of the Stay Active & Independent for Life – Information Guide for Adults 65 or older for distribution by Area Agencies on Aging and partner organizations.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31,2008
Initiate development of a statewide coalition for senior falls prevention.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31, 2008
Work with the Area Agencies on Aging to promote their leadership role on a statewide coalition, including identification of, and partnerships with un-served or under-served communities.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31, 2008 ongoing
Disseminate the cost effective senior falls prevention model developed under the Community for Disease Control (CDC) Senior Falls Prevention Grant.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31, 2008
Seek new funding resources to enable community agencies to undertake ongoing senior falls prevention interventions.	Washington State Department of Health	July 31, 2008
Facilitate and coordinate dissemination of best practices for falls prevention.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31, 2008 ongoing
Work with local communities to identify opportunities for integrating best practices into existing programs.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31, 2008 ongoing
Promote development of community based senior falls prevention coalitions to pool community resources and develop collaborative solutions.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31, 2008
Develop a communication strategy to facilitate and coordinate dissemination of best practice and evidence-based information and intervention strategies.	Washington State Department of Health, Northwest Orthopaedic Institute	July 31, 2008 ongoing

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/hsqa/emstrauma/injury/pubs/FallsAmongOlderAdults.pdf

The Health of Washington State. Falls Among Older Adults Chapter
www.doh.wa.gov/HWS/doc/iv/iv-falls2007

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

www.doh.wa.gov/hsqa/emstrauma/injury/pubs/SAILguide.pdf

National

American Academy of Orthopaedic Surgeons, Resources on preventing falls

http://orthoinfo.aaos.org/fact/thr_report.cfm?Thread_ID=439&topcategory=Injury%20Prevention

California Blueprint For Falls Prevention

www.archstone.org/publications2292/publications_show.htm?doc_id=246660

CDC Falls Prevention page

www.cdc.gov/ncipc/factsheets/falls.htm

CDC's "What YOU Can Do To Prevent Falls", and "Check For Safety: A Home Fall Prevention Checklist for Older Adults"

www.cdc.gov/ncipc/pub-res/toolkit/brochures.htm

Falls Free: A National Falls Prevention Action Plan

www.healthyingprograms.org/content.asp?sectionid=98

Fall Prevention Center of Excellence

www.stopfalls.org

National Council on Aging, Fall Prevention Resources

www.healthyingprograms.com/content.asp?sectionid=69, and checklist for assessing the quality of fall exercise programs

www.healthyingprograms.com/resources/FallPrevention_ProgramsChecklist.pdf

National Council on Aging's Center for Healthy Aging Best Practices: Partnering to Promote Healthy Aging: Creative Best Practice Community Partnerships

www.healthyingprograms.org/content.asp?sectionid=31&ElementID=160

Prevention of Falls Network Europe

www.profane.eu.org

Office of the Provincial Health Officer (2004) Prevention of falls and injuries among the elderly. British Columbia, Ministry of Health Planning

www.healthservices.gov.bc.ca/pho/pdf/falls.pdf

Childhood Falls

Washington State

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www.doh.wa.gov/hsqa/emstrauma/injury/pubs/wscir/default.htm

Harborview Injury Prevention Resource Center press release. (May, 2006).

<http://depts.washington.edu/hiprc/news/press/Falls%20From%20Windows.html>.

National

American Academy of Pediatrics: Committee on Injury and Poison Prevention. Falls From Heights: Windows, Roofs, and Balconies Pediatrics 2001 107: 1188-1191 (doi:10.1542/peds.107.5.1188)

Automatic Specialties web site, a window guard supplier

www.auspin.com/angel2.htm

Boston Public Health Commission, Kids Can't Fly Campaign.

www.bphc.org/bphc/pdfs/cipp_kidscantfly.pdf.

Children Can't Fly: a program to prevent childhood morbidity and mortality from window falls

www.ajph.org/cgi/content/abstract/67/12/1143

Consumer Product Safety Commission, *Childproofing Your Home – 12 Safety Devices to Protect Your Children.*

www.cpsc.gov/CPSPUB/PUBS/GRAND/12steps/12steps.html

Consumer Product Safety Commission, *Handbook for Public Playground Safety.*

www.cpsc.gov/cpscpub/pubs/325.pdf

Consumer Product Safety Commission, *Home Playground Safety Checklist.*

www.cpsc.gov/CPSPUB/PUBS/Pg1.pdf

Istre GR, McCoy MA, Stowe M, Davies K, Zane D, Anderson RJ, Wiebe R. Childhood injuries due to falls from apartment balconies and windows. Inj Prev. 2003 Dec;9(4):349-52

National Safety Council

www.nsc.org/aware/window/

Safe Kids USA

www.usa.safekids.org/content_documents/Falls_facts.pdf

www.usa.safekids.org/tier3_cd.cfm?folder_id=540&content_item_id=1050

Timothy Healey Foundation

www.windowSAFE.org

Vish NL, Powell EC, Wiltsek D, Sheehan KM. Pediatric window falls: not just a problem for children in high rises. Inj Prev. 2005 Oct;11(5):300-3

Window Guards

www.windowguard.org

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FIREARM-RELATED INJURY

DESCRIPTION:

Injuries and deaths caused by a firearm, including handguns, rifles and shotguns. These include injuries and deaths caused by another person or self-inflicted. They may be intentionally inflicted or unintended.



Washington State Goal Statement

To decrease deaths and hospitalizations due to firearms

National Healthy People 2010 Objectives

- Reduce firearm-related death rate from 11.3 per 100,000 in 1998 to no more than 4.1 per 100,000
- Reduce the proportion of persons living in homes with firearms that are loaded and unlocked from 19% in 1998 to 16%
- Reduce the nonfatal firearm-related injury rate from 24.0 per 100,000 in 1997 to 8.6 per 100,000

Statement of the Problem in Washington State

Firearm injuries in 2006 were the fourth leading cause of injury death in Washington State. There were 392 firearm-completed suicides. This is about one-half (49%) of the suicides in Washington State. There were 121 homicides committed with firearms, or 55% of all homicides. Also in 2006, there were nine unintentional firearm deaths:

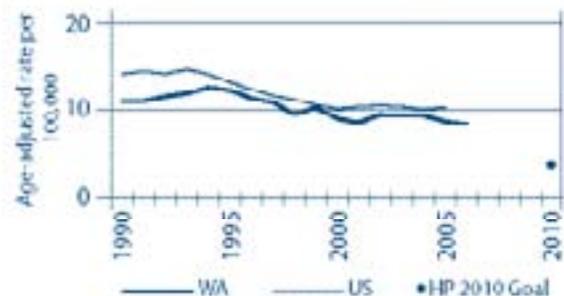
- Three among 10- to 19-year olds.
- Three among 20- to 34-year olds.
- One among 45- to 54-year olds.
- Two among those 75 years old and older.

Washington State Data

Washington State's firearm death rate declined from 11 per 100,000 in 1990 to 8 per 100,000 in 2006. It has historically been slightly lower than the national rate. Washington State's firearm death rate is about double the national Healthy People 2010 goal of 4.1 per 100,000.

Firearm-related Deaths

Washington State & United States Death Certificates, 1990-2006

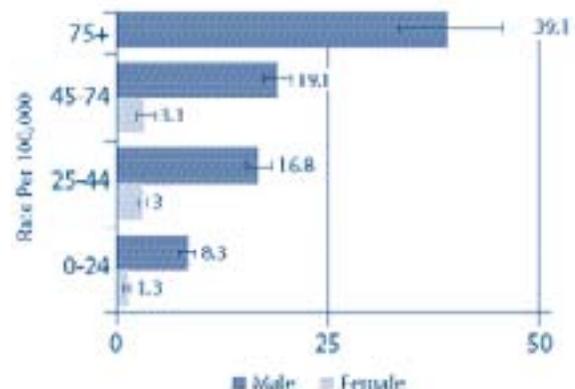


Age and Gender

From 2004-2006, the group with the highest risk of firearm-related death was men over 75 years. In this group, the vast majority (98%) of deaths were suicides. From 2004-2006, males were six times more likely to die from a firearm-related injury than females. Females 75 years and older had fewer than 20 deaths. The chart does not include them.

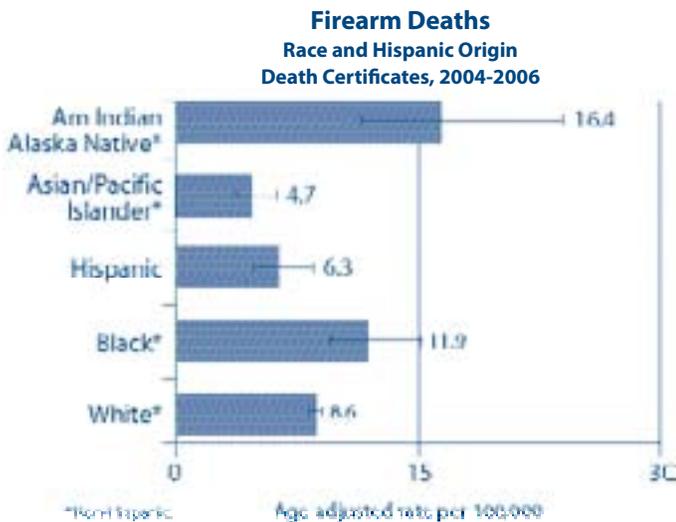
Firearm-related Deaths

Age and Gender
Death Certificates, 2004-2006



Race and Ethnicity

From 2004-2006 in Washington State, American Indians, Alaska Natives, and Blacks had the highest firearm-related death rates. Whites had higher firearm-related death rates than Hispanics and Asian and Pacific Islanders.



Healthy Youth Survey Data

According to the 2004 Healthy Youth Survey, 3% of 8th graders, 10th graders and 12th graders carried a firearm at least once during the last 30 days. This means more than 8,200 students in these three grades had a firearm in their possession. Of the 10th graders, 5% of male respondents (about 2,400 students) reported carrying a firearm. About 1% of females (some 450 students) reported carrying a firearm.

Firearms in Schools

As required by state law, the Office of the Superintendent of Public Instruction (OSPI) reports the number of incidents where a weapon is in possession on school premises or school sponsored events. This data comes from all 296 public school districts in the state. In the 2005-2006 school year, there were 78 firearms incidents. This compares to 64 in 2004-2005, 57 in 2003-2004, and 116 in 2002-2003. While the number varies by year, there is an increasing trend in overall possession of knives and other weapons on school grounds and at school events.

OSPI, along with school districts across the state, promotes model policies and practices on harassment and bullying. OSPI and their School Safety Advisory Committee are addressing emergency preparedness and readiness in the event of a school shooter, terrorist activity, or other threat to school safety.

Risk and Protective Factors

Alcohol and drug use

Alcohol and other drug use increases risk of firearm injury. It slows decision making, changes perceptions, inhibits self-control, and encourages high-risk behaviors. Interpersonal interactions and disputes can more easily escalate to violence when alcohol or other drugs are involved.¹

Having a firearm present in the household

About 90% of fatal firearm incidents involving children occur in the home. A study of children ages 0-14 showed that 40% of firearm incidents happen in the same room where the firearm is stored.²

The presence of a household firearm is also linked with an increased risk of adults and adolescents using a firearm to attempt suicide.³ Having a firearm in the house also puts an abused woman at greater risk of being killed.⁴

In one survey, almost one-fourth of the parents with young children keep a firearm at home. The survey of 3,754 parents at 96 pediatric practices covered 45 states, Puerto Rico, and Canada, yet in 70% of homes with guns, parents said they had not taken adequate steps to safely store it.

Families with children age two to five were more likely to safely store their firearms than families with older children, but overall few families reported safe firearm storage. The practice of safe storage, defined as unloaded firearms, locked in a cabinet or with a gun lock, with ammunition stored separately, is not widespread.⁵

Protective practices include:

- Safe storage.
- Parents asking other parents if they have firearms in their house and how they are stored - parents can then decide whether to let their children play in the house.
- Physician screening of all youth and families for presence of and how firearms are stored in the home.
- Physician referral, treatment, and follow-up for those at risk for firearm injury, for example, history of mental illness, depression, or suicide ideation or attempts.⁶

In 2004, according to the Behavioral Risk Factor Survey System (BRFSS) about:

- 34% of Washington State households had at least one firearm.⁷
- 7% of households had a loaded firearm.
- 4% had a loaded and unlocked firearm.

In households with children under 18 years old, about:

- 32% had at least one firearm (590,000 children).
- 6% had a loaded firearm (105,000 children).
- 2% had a loaded and unlocked firearm (39,000 children).

Relationship with violence

In 2005, nationally, about 68% of all murders, 42% of all robberies, and 21% of all aggravated assaults reported to the police were committed with a firearm.⁷

National data shows that if a firearm is used in intimate partner homicide, the victim is most likely a female.

Females are almost four times more likely than men to be shot by a current or former spouse or boyfriend than by a stranger.⁸

Recommended Strategies

Evidence-Based Strategies

Provide safe storage of firearms

The risk of unintentional injuries and suicides among children and youth decreases significantly when firearms are stored unloaded, locked, and separated from ammunition.³ Firearm owners need correct information on the risks posed by unsecured firearms and how best to secure them.

Securing or removing a firearm from the home reduces the opportunity that youth and adults at risk for suicide will use it to harm themselves. The use of a firearm is the most lethal method of suicide.⁹ Even when they are aware of a firearm in the home, parents with teenaged children are less likely to store firearms safely than parents with younger children. This is true even though older children are at greater risk for firearm death.¹⁰

Public awareness and information campaigns in our state (for example, LOK-IT-UP or ASK) raise awareness and provide education on safely storing firearms. These programs give parents and health care providers accurate information to discuss firearm safety and risk-reducing actions with their children and patients.

Promising or Experimental Strategies

Participate in state and national efforts to improve firearm surveillance

More data on firearm injuries is needed to develop effective interventions to prevent firearm injuries. The data collected should include geographic, socio-demographic, and product-specific information on

key causal and contributing factors. These include, for example storage practices, alcohol and drug use, perpetrator-victim relationships, and crime involvement.

The National Violent Death Reporting System (NVDRS) and the State Child Death Review (CDR) databases are two examples of reporting systems. They help prevention professionals understand the problem, target the audiences, and develop programs to reduce firearm injury risk.

Establish community coalitions to reduce access to firearms

Communities can begin coalitions with informed representatives from law enforcement, public health, Child Protective Services, parent groups, firearm owners, and others. The coalitions can develop, implement, and monitor local plans to reduce access to firearms and to provide temporary safe storage when short-term removal of a firearm from the home is needed -- for example, when a person in the home is depressed or exhibits warning signs of suicide.

Promote the ASK (Asking Saves Kids) Campaign
Children are naturally curious; if a gun is accessible in someone's home there is the risk that a child may find it and play with it. The ASK campaign promotes parents asking other parents if they have firearms in their homes and how they are stored before their child goes to play in that house. If there are doubts about the safety of someone's home, the parents invite the children to play at their house instead.

Strategies Used by Other States

Implement safety standards

To prevent unauthorized use of a firearm some states require firearms to be sold with a safety lock, a lock box, or a personalized lock that meets the current California Attorney General's Office recognized standards (see website in resource list below). To prevent unintentional discharge, some states require handguns to have loaded-chamber indicators or magazine safety disconnects. Currently, many firearms that are sold through licensed dealers come with a free trigger or cable lock. People can purchase trigger and cable locks through retail stores. Law enforcement agencies often have free locks. However, since free locks may not be as secure as other methods, they are not the preferred method. Many experts recommend using lock boxes, safes, or firearm vaults with a push button, combination, or digital keypad lock.

Child access prevention laws

Nineteen states have Child Access Prevention (CAP) laws, enacted in the late 1980s to mid 1990's. CAP laws limit children's access to and use of firearms in the home through requiring firearm owners to store their firearms locked or unloaded or both. When children use a household firearm to threaten or harm themselves or others, CAP laws make the person responsible for firearm storage liable, often including a criminal penalty – either a gross misdemeanor or Class C felony.

Laws with felony penalties are shown to be more effective than those with misdemeanor penalties. In states that passed CAP laws, among children younger than 15 years unintentional shooting deaths fell by 23% during the years covered by these laws. Firearm-related homicide and suicide showed modest declines, but were not statistically significant.¹¹

Since 1994, licensed firearm dealers have been required to do criminal and mental health background checks on firearm buyers. According to the Federal Bureau of Investigation's (FBI) National Instant Criminal Background System (NICS), from November 30, 1998, through December 31, 2005, the NICS Section has denied a total of 473,433 firearm sales.¹²

Background checks

Conducting criminal or mental health background checks of buyers, and limiting the number or types of firearms that can be sold and bought at shows are other ways of preventing firearm injuries. Five states (California, Colorado, Illinois, New York, Oregon and Rhode Island) require background checks on all firearms sold at gun shows; three states (Connecticut, Maryland and Pennsylvania) require background checks on handguns sold at the shows.

Background checks are a tool for preventing firearm injuries and deaths. Consistent policies both at the state and local level are needed to ensure background checks take place.

For More Information

Washington State

LOK-IT-UP: A campaign to promote the Safe Storage of Firearms. Posters and brochures available at
www.lokitup.org

Washington State Childhood Injury Report

www.doh.wa.gov/cfh/injury/pubs/childhood_injury_report.htm

National

American College of Physician's Firearm Injury Prevention Resource Center

www.acponline.org/firearms/index.html

ASK (Asking Saves Kids) Campaign

www.paxusa.org/ask/index.html

Institute of Medicine. (1999). Reducing the Burden of Injury, Advancing Prevention and Treatment. National Academy Press: Washington, pp 124-137

State of California, Department of Justice, Roster of Firearm Safety Devices Certified for Sale from

<http://ag.ca.gov/firearms/fsdcertlist.php>

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- ¹² U.S. Department of Justice Federal Bureau of Investigation Criminal Justice Information Services Division, National Instant Criminal Background Check System 2005 Report.

FIRES AND BURNS

DESCRIPTION:

Injuries and deaths from fire, flames, and hot objects or substances.



Washington State Goal Statement

To decrease deaths and hospitalizations due to fire and burns

National Healthy People 2010 Objectives

- Reduce residential fire deaths from 1.2 per 100,000 in 1998 to 0.2 deaths per 100,000
- Increase functioning residential smoke alarms on every floor from 88% in 1998 to 100%

Statement of the Problem in Washington State

Washington State Data

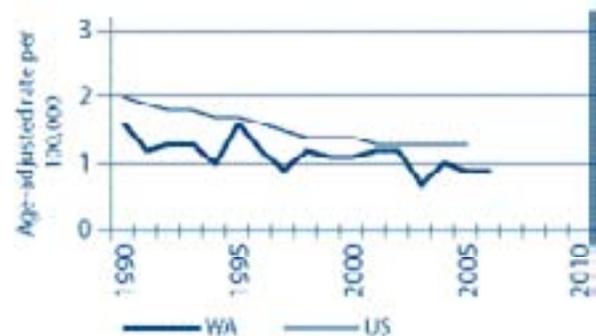
The Washington State fire death rate is lower than the national rate. Although death and injury numbers have generally declined in the past ten years, they remain a substantial public health problem. Fires and burns remain significant causes of unintentional injury and death.

From 2002-2006, 248 people died and 3,135 were hospitalized from unintentional fire and burn-related incidents. Forty-one percent of these fatalities were seniors over age 65. For children ages 0-4, fire and burn injuries are the second leading cause of injury hospitalizations and the fourth leading cause of deaths. Most fires and associated injuries are preventable.

In 2007, fire agencies reported 50 fire fatalities to the Office of the Washington State Fire Marshal.¹ This was a decrease of approximately 25% over the previous year. Historically during cooler weather in winter, fire deaths increase because residents stay indoors where the fire risk is higher.

Fire Deaths

Washington State & United States Death Certificates, 1990-2006

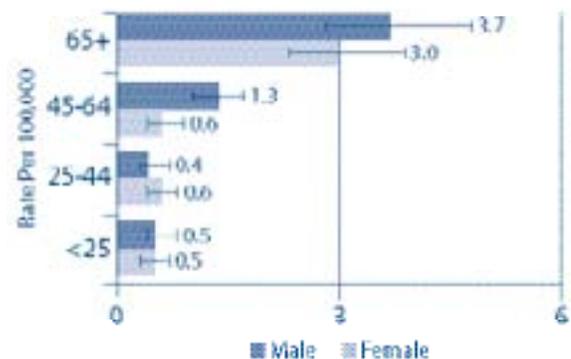


Age and Gender

From 2002-2006, fire-related death rates were about five times higher for those ages 65 and older than for those under age 65. This is most likely due to a combination of factors.

Fire-related Deaths

Age and Gender
Death Certificates, 2002-2006



Older adults have more mobility constraints, are more likely to have memory constraints, hearing and vision impairments, and take multiple prescription drugs. All of these can increase fire risk. In addition, pre-existing medical conditions make smoke inhalation and burn injuries more difficult to treat and make it harder to restore health.²

Race and Ethnicity

In Washington State from 2002-2006, only whites had more than 20 fire-related deaths. American Indians and Alaska Natives Blacks, Asian Pacific Islanders and Hispanics had fewer than 20 fire-related deaths. For this reason, a chart is not included.

Other Risk Factors

Other risk factors include personal and household factors. Personal factors include income, educational level, rural residence, physical and mental disability, smoking, impairment by drugs or alcohol, and male gender. Housing-related factors include home ownership, lack of a telephone, housing age, and housing type such as mobile homes or trailers.³

Smoking

In Washington State, smoking results in, 22%, of fire deaths, make it the leading cause. Of the smoking-related deaths reported in 2007, 80% occurred in residential structures.¹ If the person smoking is alert and keeps all materials that can burn away from lighted smoking materials, then smoking-related deaths could be reduced. Also, smoking should never be done while an oxygen tank is in use.

The National Fire Incident Reporting System (NFIRS), which is used in Washington State to collect data, demonstrates that most residents who died from smoking-related fatalities:

- Lived in metropolitan areas.
- Lived in single family residential structures.
- Were over 40 years old.
- Were under the influence of medications, alcohol, or drugs.
- Fell asleep while smoking.

Electrical appliances and distribution

The second leading cause of fire-related deaths from 2003-2007 was electrical appliances and distribution. This caused 14% of the deaths. Some of the major causes of electrical-related fires are:

- Misuse or poor maintenance of electrical appliances.
- Improper installation of wiring.
- Overloaded circuits.
- Extension cords.¹

Home heating and cooking

Home heating and cooking were tied as the third leading cause of fire deaths from 2003-2007, each accounting for about 8%. Equipment and appliances that are not used or maintained in accordance with manufacturer's recommendations contribute to home heating fires.¹

Leaving food unattended or wearing loose fitting clothing plays a role in cooking-related fires and deaths. From 2003-2007, approximately 19% of the fatal fire incidents were reported with undetermined heat sources.¹

Lack of functional smoke alarm

Use of smoke alarms is a proven, effective, reliable, and inexpensive early warning in residential fires. Even though over 90% of homes report having smoke alarms, only about three-fourths of United States' households report having a functional smoke alarm. Households below the poverty level and households in rural areas are even less likely to have installed functional smoke alarms.¹

Fireworks

Fireworks are a common cause of burn injury in the days surrounding July 4. There were more than 1,000 fireworks-related emergency incidents in the state in 2006. These resulted in more than \$9 million in property loss. Of the 1,001 reports, there were 794 fires and 207 injuries. By age and gender, male youths ages 8-21 and young adults ages 22-28 are most often injured in fireworks-related incidents. In 24% of the incidents with children involved and available information, there was no adult supervision. In fireworks-related incidents:

- Burns were the most common injury, 51% (105 of 207).
- Trauma⁴ was the next leading injury, 32% (62 of 207).
- Amputations were less than 2% (3 of 207) of the injury types.
- The remaining 37 of 207 injuries were unknown.

Bottle rockets and firecrackers lead the list of illegal devices causing injuries. Children ages four and under are at the highest risk for sparkler-related injuries.⁵

Scald burns

Scald burn injury, caused by hot liquids or steam, is the most common type of burn-related injury among young children.

Scalds are most likely to happen in the home.

Nationally, an average of eight children a year ages 14 and under die from scald burn-related injuries.

Children age four and under account for nearly all of these deaths. Among children ages four and under hospitalized for burn-related injuries, an estimated 65% are treated for scald burns. Among children ages 2 and under, more than 75% of all scald burn-related injuries could be prevented through actions such as:

- Lowering the setting on water heaters to 120° Fahrenheit or below.
- Installing anti-scald devices in water faucets and shower heads.⁶

The total annual cost of scald burn-related deaths and injuries among children ages 14 and under is almost \$44 million. Children age four and under account for more than 90% of the total cost.⁷

Scald burns require agonizing treatments and often lead to permanent scarring. They are one of the most painful injuries for children. Hot liquid scalds occur when children:

- Knock over cups of hot liquid.
- Are splashed by liquid carried by another person.
- Grab pots off the stove.
- Pull on tablecloths.

Recommended Strategies

Evidence-Based Strategies

Increase use of residential smoke alarms

Smoke alarms are a proven, effective and inexpensive way to prevent house fire injuries. Battery replacement and maintenance is essential. Alarms operate more effectively and the needs for battery replacement is less when lithium powered alarms are used. Smoke alarm installation programs have been proven effective.⁸

Promising or Experimental Strategies

Support the increased use of sprinkler systems
Sprinkler systems, when used in conjunction with smoke alarms, are proven effective in preventing injury and the spread of fire. Smoke alarms and sprinkler systems combined could reduce fire-related deaths by 82% and injuries by 46%.⁹ Sprinkler systems should be installed in new construction or in areas where fire department response time may be delayed. There is a need to work with code enforcement to require sprinkler systems.

Support public fireworks displays produced by trained professionals

Studies suggest that state laws regulating the sale and use of fireworks affect the number of injuries incurred.¹⁰

Continue state funding for surveillance of fire and burn incidents to:

- Determine causes of fires.
- Understand high-risk behaviors.
- Understand target groups.
- Evaluate current programs.

To obtain consistent data, standardize data collection sources and data forms.

Expand and implement fire and burn safety education

Fire safety education normally targeted at older people, preschool, or school age children, appears to be a promising method of preventing fire and burn injuries.¹¹

Ideas for expanding and implementing education include:

- Partner with smoking prevention advocates to reduce fire fatalities by eliminating smoking in the home.
- Promote policies for homes, apartments, and public housing requiring water heater temperatures to be set at no more than 120° Fahrenheit.
- Provide scald burn education for parents.

For More Information

Washington State

Office of the Washington State Fire Marshal

www.wsp.wa.gov/fire/firemars.htm

and *2007 Fire In Washington Annual Report*

www.wsp.wa.gov/fire/annual_reports/2007firept.pdf

National

Consumer Product Safety Commission press release on flammability standards for mattresses

www.cpsc.gov/cpsc/pub/prerel/prhtml06/06091.html

Firesafety.gov

www.firesafety.gov

Home Smoke Alarms and Other Fire Detection and Alarm Equipment. Public/Private Fire Safety Council. (April, 2006).

Jackson, M.L., Martin, M.W. Working towards the elimination of residential fire deaths: CDC's Smoke Alarm Installation and Fire Safety Education (SAIFE) Program. *Journal of Burn Care and Rehabilitation.* (2005). 26(5): pp. 434-439

National Fire Protection Association

www.nfpa.org

United States Fire Administration

www.usfa.dhs.gov

Endnotes

- ¹ Office of State Fire Marshall, Fire Fatalities in Washington State for 2007, Retrieved February 13, 2008 from www.wsp.wa.gov/fire/data/07_fire_fatalities.pdf.
- ² United States Fire Administration and National Fire Data Center. (January 2006). Fire and the Older Adult. Retrieved on June 19, 2007 from www.usfa.dhs.gov/downloads/pdf/publications/fa-300.pdf.
- ³ Warda, L. J. & Ballesteros, M. F. (2006). Interventions to Prevent Residential fire Injury. In Doll, L., Bonzo, S., Mercy, J., Sleet, D., (Eds). Handbook of injury and violence prevention. New York: Springer.
- ⁴ Trauma is defined as a physical injury or wound caused by an external force which may cause death or permanent disability.
- ⁵ Office of State Fire Marshall, 2006 Fireworks Report, Retrieved February 13, 2008 from www.wsp.wa.gov/fireworks/files/06rpt.pdf.
- ⁶ National SAFE KIDS Campaign (NSKC). Burn Injury Fact Sheet. Washington (DC): NSKC, 2004.
- ⁷ www.usa.safekids.org/content_documents/Burn_facts.pdf
- ⁸ www.nfpa.org/itemDetail.asp?categoryID=465&itemID=17860&URL=Learning/Fire&cookie_test=1.
- ⁹ www.usa.safekids.org/content_documents/Burn_facts.pdf
- ¹⁰ McFarland, L.V., Harris, J.R., Kobayashi, J.M., Dicker, R.C. Risk factors for fireworks-related injury in Washington State. *Journal of the American Medical Association* (1984). 251: pp. 3251-3254.
- ¹¹ National Fire Sprinkler Association. The Case for Residential Fire Sprinklers . 2004. Available from: www.nfsa.org/info/thecase.html. Accessed August 26, 2002.

MOTOR VEHICLE-RELATED INJURIES

DESCRIPTION:

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

This section is a priority area for the Washington State Department of Health.



Washington State Goal Statement

To decrease deaths and hospitalizations due to motor vehicle traffic crashes

National Healthy People 2010 Objectives

- Reduce motor vehicle death rate from 15.6 to no more than 9.2 per 100,000 and reduce from 1.6 to no more than 0.8 deaths per 100 million vehicle miles traveled
- Reduce pedestrian deaths on public roads from 1.9 pedestrian deaths to no more than 1.0 death per 100,000
- Reduce nonfatal injuries caused by motor vehicle crashes from 1,181 to no more than 933 nonfatal injuries per 100,000
- Reduce nonfatal pedestrian injuries on public roads from 26 to no more than 19 nonfatal injuries per 100,000
- Increase use of safety belts from 69% to 92%
- For children under age four, increase use of child restraints from 92% to 100%
- Increase the proportion of motorcyclists using helmets from 67% to 79%

Statement of the Problem in Washington State

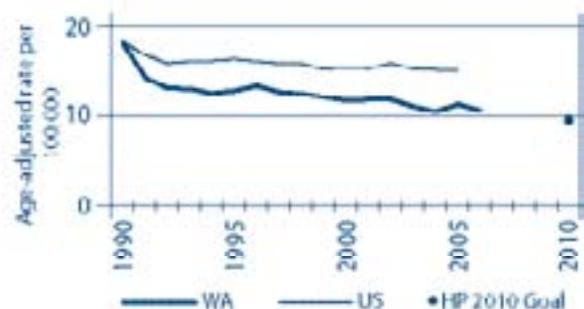
In Washington State, motor vehicle crashes are the second leading cause of unintentional injury death (after poisonings), and the leading cause of major trauma.¹ In 2006, motor vehicle crashes were the leading cause of death among Washingtonians ages 1-44, killing more people than any other disease or injury type. Motor vehicle injuries are largely preventable and are mainly due to human behavior

rather than poor road design or vehicles. According to the Washington Traffic Safety Commission (WTSC), driver and occupant behavior is responsible for more than 80% of all motor vehicle crashes. WTSC's Strategic Highway Safety Plan (Target Zero) reports that between 2000 and 2004, 77% of traffic fatalities involved driver impairment, speed, and/or not using seat belts. These three human behaviors were often in play together and resulted in 1,880 deaths.

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 Washington State's rates continued to decline. In 2005, the most recent year of national death data, the age-adjusted national death rate was 14 per 100,000. The rate in Washington State was 12 per 100,000. The death rate per 100 million vehicle miles of travel in 2005 was 1.2 in Washington and nationally. In Washington, there have been small consistent declines since 1995 when the death rate per 100 million vehicle miles of travel was 1.3.²

Motor Vehicle Traffic Deaths
Washington State & United States Death Certificates, 1990-2006

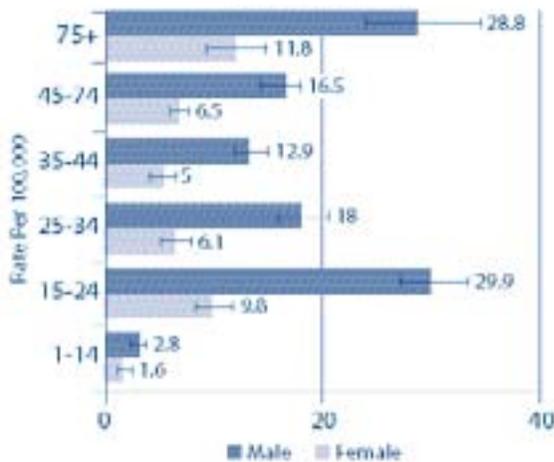


Age and Gender

From 2004-2006, 72% of residents who died in crashes were males. The highest death rates were among younger males ages 15-24 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 strength of bones and internal organ function decreases, which may increase risk of injury.³

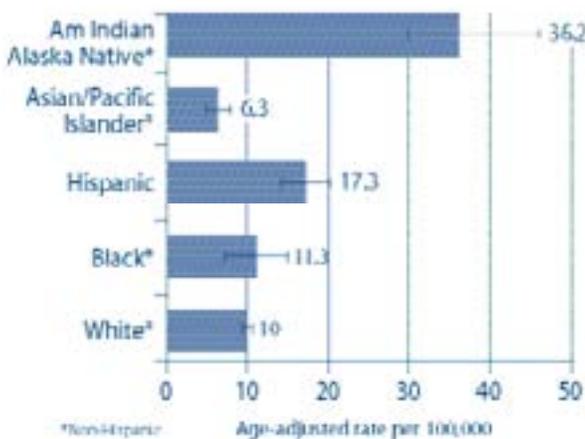
Motor Vehicle Traffic Deaths
Age and Gender
Death Certificates, 2004-2006



Race and Ethnicity

From 2004-2006, American Indians and Alaska Natives had the highest motor vehicle traffic death rates. Hispanics had the next highest motor vehicle traffic death rate. Also, motor vehicle related death rates are higher in low-income neighborhoods and among those with lower education.

Motor Vehicle Traffic Deaths
Race and Hispanic Origin
Death Certificates, 2004-2006



Risk and Protective Factors

WTSCs Strategic Highway Safety Plan (SHSP), approved by Governor Gregoire on February 27, 2007, will guide traffic safety work for several years. The SHSP has four priority levels, with several topics in each level. Since most motor vehicle crashes are related to human behavior, the priorities focus on human behavior and the need for some drivers to change their behavior. The Risk and Protective Factor section in this chapter is organized by the SHSP priorities. DOH and WTSC work together to decrease fatalities and injuries, especially disabling injuries.

Leading Reasons for Fatal Crashes

The top two reasons cited in fatal crashes in Washington State are 1) impairment, which includes alcohol, illicit drugs, prescription medications, and over-the-counter medications, or a combination; and 2) vehicle speed. Considerable overlap exists between these categories. About 60% of all speed-related crashes also involve impairment.⁴ From 2001 to 2005, 3,140 people died on Washington State roads. Impaired driving claimed 1,472 lives (47% of deaths). Speed claimed 1,195 lives (38% of deaths).

Impaired driving

From 1993-2003, the most common drinking driver fatality involved:

- Males.
- 21-25 year olds.
- Motor vehicle occupants.
- Driving on rural roads.
- Unbelted drivers.

The two groups of most concern are hard-core, repeat offenders and young drinking drivers in the high-risk age group 21-25.

Speeding

Although speed related crashes occur most often on freeways, speed fatalities happen most frequently on rural roads.

To encourage drivers to slow down provide:

- Strong enforcement of speed laws.
- Engineering to keep roads safer and to help reduce speeds.
- Education of drivers about the lethal realities of speed.

Protective-Correct Use of Occupant Restraints

Proper use of seatbelts reduces motor vehicle deaths by 60%.⁵ In 2006, 96% of drivers wore seatbelts.

However, seat belt use was lower on city streets, 91%, and county roads, 93%. Interstate highway seatbelt compliance was 98%.⁶

Two- and three-year-olds restrained in a child car seat in the rear seat of a vehicle have an 82% lower risk for injury than children in lap-shoulder belts.⁷ In 2000, 92% 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.⁸

In June 2007, the child passenger restraint law in Washington State became consistent with the current national best practice. The law requires:

- When practical, children who are not yet 13 years old will be transported in the back seat.
- Children, prior to eight 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, vest, 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.

Type of Road

By road type:

- 38% of deaths occur on state or U.S. highways.
- 31% on county roads.
- 18% on city streets.
- 11% on interstates.

When the rate of death per 100 million vehicle miles traveled (VMT) is considered:

- County roads have the highest fatality rate at 2.28 per 100 million VMT.
- State and U.S. highways have a rate of 1.65.
- City streets are at 0.90.
- The interstate is 0.53.

Mode of Transport

From 1993-2003, the Fatal Analysis Reporting System (FARS) data shows those who die in motor vehicle crashes:

- Nearly 80% are vehicle occupants.
- 12% are pedestrians.
- 7% are motorcyclists.
- Less than 2% are bicyclists.

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.⁹ Since 2002, motorcyclist crashes and fatalities have increased significantly. In 2002, there were 54 fatalities compared to 59 in 2003, 75 in 2004, 74 in 2005, and 80 in 2006.

The principle causes for the fatality increases are:

- Lane change errors.
- Speed.
- Rider impairment.
- Inattention of motorcycle riders and vehicle driver.
- Right-of-way violations.

Most fatalities are among males and are single vehicle crashes, with the motorcycle leaving the roadway. In 2006, The Washington State Department of Licensing (DOL) convened a Motorcycle Safety Task Force to assess the problems and to make recommendations. Two recommendations approved during the 2007 legislative session were:

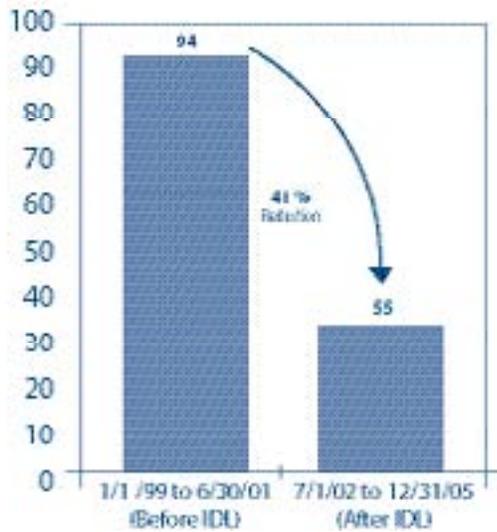
1. Funding was increased to provide motorcycle safety training for an additional 3,000 riders.
2. Motorcycles involved in traffic infractions can now be impounded if the rider does not have a motorcycle endorsement.

DOL reports that preliminary 2007 data shows excellent results. When compared to 2006: motorcycle fatalities were reduced by 14, exceeding the target of 10.

Teen Drivers

In Washington State, 15- to 20-year-old drivers have the highest fatality crash rate of 4.4 fatal crashes per 10,000 licensed drivers. Teen drivers represent 6% of licensed drivers, yet account for about 15% of crashes in the state. Between 1993 and 2005, this age group had the highest number of fatalities at 1,359, and had the state's highest fatality rate at 22.4 per 100,000 population. Since the State Intermediate Driver License (IDL) law took effect July 2001 there has been a 41% drop in the number of fatal and disabling injuries among new 16- and 17-year-old drivers.¹⁰

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



An IDL, or a graduated license, is issued to a driver under the age of 18. By progressively developing and improving the skills of younger, inexperienced drivers in a safer environment, the IDL helps reduce the number of vehicle crashes, injuries, and fatalities.

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.

Newly licensed drivers with less than one year of driving experience have the highest crash. Nearly 50% of the newly licensed driver’s fatal crashes were single vehicle crashes. Nationally, two out of three teen passenger deaths occur when another teen is driving.

When traffic offenses occur during IDL, there is tiered punishment. Additional strategies to encourage 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 themselves and all passengers.

Also, strategies need to include education to law enforcement officers about how to apply and enforce the IDL.

According to the Healthy Youth Survey, Washington 10th graders who reported driving after they had been drinking alcohol decreased from 10% in 1992 to 8% in 2006. Although the decrease was not significant, it represents about 7,500 10th graders in 2006 that reported driving after drinking alcohol.

Tenth graders who report riding in a vehicle driven by someone who had been drinking alcohol declined significantly from 29% in 1992 to 25% in 2006. This represents about 23,400 10th graders in 2006 that reported riding in the car with a driver who had been drinking alcohol.

These are slow and steady decreases; however; many teens still need to reduce their use of drinking, drugging and driving, or riding with an impaired driver – these are very risky behaviors.

Aggressive Drivers

The National Highway Traffic Safety Administration (NHTSA) defines aggressive driving as: “the commission of two or more moving violations that is likely to endanger other drivers or property, or any single intentional violation that requires a defensive reaction of another driver”. NHTSA reports that more than 60% of drivers see unsafe driving by others as a major personal threat to themselves and to their families.

According to the Washington State Patrol (WSP) 2006 Annual Report, troopers issued 58,993 citations for aggressive driving, an increase of 16% over 2005. WSP’s Aggressive Driving Apprehension Team has 43 assigned troopers and is responsible for 26% of aggressive driving contact. A WSP aggressive driving web site allows citizens to report roadway areas or aggressive driving incidents.

Distracted or Drowsy Drivers

In Washington State between 1993 and 2004, 17% of drivers involved in fatal crashes were cited for inattention and 4% for drowsiness. According to a new study by the National Highway Traffic Safety Administration (NHTSA) and the Virginia Tech Transportation Institute, nearly 80% of crashes involved some form of driver inattention within three seconds before the event.¹¹

Drowsiness increased the risk of a crash or near crash by four times. Drowsiness might be underreported by police crash investigations. Drivers who reach for an object, use cell phones, and do other distracting activities are more likely to be involved in a crash.

Driving distracted or drowsy is a significant challenge. According to Target Zero there are no current, proven strategies to reduce collisions. The new Police Traffic Collision Report began in July 2006. The report will capture distracted driver data and be used to determine specific issues and potential interventions. For effective strategies, core data analysis, testing, and research are needed.

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. When senior drivers crash, their risk of death or severe injury is higher than that for younger people. Their risk of death also increases as they age.

A plan for this older population is needed to help keep their mobility for as long as possible.

Pedestrians

Even though the number of pedestrians killed in Washington State has declined in the past few years, pedestrian safety is still a concern. In 2004, 60 pedestrians were killed. This is less than the 75 pedestrians killed in 2003. In the last 20 years, 1996 had the highest number of pedestrians killed – 92. In several age groups, according to WTSC data from 1993 to 2004, more than 50% of pedestrians were intoxicated when they were killed.

Nationally, in 2004, 4,641 pedestrians were killed in traffic crashes:

- More than 69% of the pedestrians killed were males.
- 8% were children under age 15.
- 5% were pedestrians over the age of 69.

In 47% of the traffic crashes that resulted in pedestrian fatalities in the United States, alcohol played a role either for the driver or for the pedestrian. Of these fatalities:

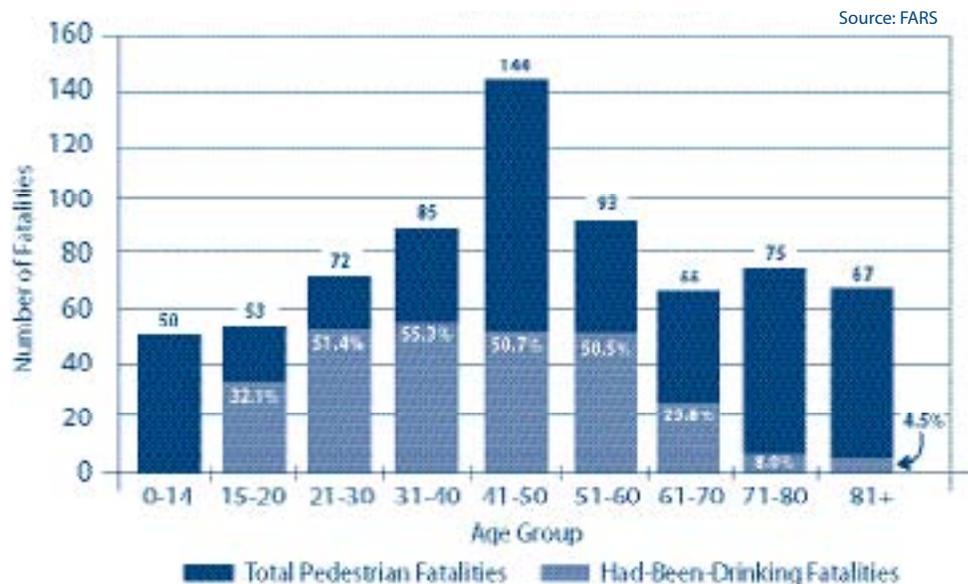
- Pedestrians with a blood alcohol concentration (BAC) at .08 or higher account for 34% of all pedestrian fatalities.
- Drivers with a BAC at .08 or higher account for 13% of all pedestrian fatalities.
- Both driver and pedestrian with a BAC at .08 or higher account for 6% of the fatalities.

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%. Bicycle injuries are the second leading cause of injury hospital stays for Washington State children 5-14 years old. Hospitalization rates for bicycle injuries were highest in the 10-14 age group, followed by 15- to 17-year-olds. These include crashes with motor vehicles, as well as incidents of falling over, running into something stationary, or crashing to the ground when riding fast. Bicycle-related hospital stays are more common among males. The majority of bicycle deaths occurred to people not wearing a bicycle helmet.

For every dollar spent on bicycle helmets, \$30 is saved in direct medical costs. Data from the 2006 Washington Healthy Youth Survey show that 45% of 6th graders report they wear a bicycle helmet either always or most of the time when they ride. However, by the 12th grade, only about 13% of students report wearing a helmet always or most of the time when riding.

Washington Pedestrian Fatalities, 1993-2004
By Age Group and Alcohol Status



Recommended Strategies

Often interventions to reduce motor vehicle-related deaths and disabilities take strong partnerships, which there are in Washington State. DOH partners to address this broad injury issue include:

- Washington State agencies:
 - Licensing
 - Liquor Control Board
 - Social and Health Services
 - State Patrol
 - Superintendent of Public Instruction
 - Traffic Safety Commission
 - Transportation
- Local agencies:
 - Community Traffic Safety Task Forces
 - Corridor Safety Projects
 - EMS and Fire
 - Law enforcement
 - Local public works
 - Schools
 - Tribes
- Private business and organizations:
 - AAA Washington
 - Driver / traffic safety education schools
 - Hospitals and clinics
 - Insurance companies
 - Media firms and outlets
 - Mothers Against Drunk Driving and other advocacy groups
 - Safe Kids Washington
 - Washington Safety Restraint Coalition
 - Washington Traffic Safety Education Association
- Federal agencies

Evidence-Based Strategies

- Partner with traffic safety, transportation, and law enforcement agencies to support impaired driving and speeding prevention media campaigns, patterned after Click It Or Ticket.
- Continue and expand brief alcohol and drug intervention at designated trauma services and other medical facilities.
- Explore changes such as vehicle checkpoints and increased use of automated traffic enforcement such as photo radar.

- Continue statewide high-visibility enforcement and media campaigns to maximize correct and continued restraint use.
- Continue to promote use and correct use of certified child safety and booster seats through low cost seat distribution.
- Conduct high profile child restraint inspection events at multiple community locations, including in multi-ethnic communities.
- Provide local fitting stations to instruct people in proper child restraint use.
- Increase use of U.S. Department of Transportation-approved motorcycle helmets. For motorcyclists, increase use of other protective gear such as, leathers, and goggles.
- Improve IDL law by extending time teens cannot have teen passengers and time frame they cannot drive at night.
- Continue the Washington State Patrol Aggressive Driver Apprehension Team (ADAT) and strong enforcement.
- Where data shows a high number of drowsy and/or distracted driving crashes, use the WTSC's Corridor Safety Model that takes a relatively short section of roadway that has significant crash rates. A multi jurisdictional effort mitigates hazards with low cost fixes such as new signage, rumble strips, left turn lane installation, changing stoplight light cycles to better manage traffic flow, intervene and partner with alcohol serving establishments along the corridor, and public education and awareness campaigns.
- Through local identification of risk areas, partner to implement a targeted shoulder rumble strip program. To awaken and alert a drowsy driver to stay on the road, install rumble strips both on the shoulder and on the centerline of two lane roadways. Roadway locations with higher than average "run off road" and/or head-on crashes, need to be retrofitted first.
- Rigorous enforcement of pedestrian laws.
- Prior to the passage of an all-age, statewide bicycle helmet law, distribute model bicycle helmet ordinances to local communities and assist them in passing local ordinances.

Promising or Experimental Strategies

- Increase funding and resources for Community Traffic Safety Task Forces.
- Provide enhanced targeted public education to population groups with lower than average restraint use rates, such as age group 8- to 12-year olds and pick-up truck drivers.
- Train law enforcement personnel to check for proper child restraint use so they can make needed corrections to child restraint use in all motorist encounters.
- Assist with and provide support for implementation of the 2006 Motorcycle Safety Task Force Recommendations:
 - Improve classroom and on-motorcycle skills training, and require specific motorcycle endorsement for the type and size of motorcycle being ridden.
 - For motorcyclists training classes, increase fees so more classes can be offered, and new motorcyclists can be trained and receive an appropriate endorsement.
- Improve parental involvement in teen driving by requiring parent attendance at one driver training class and requiring parent-teen contract for safer driving.
- Educate public about:
 - The risk of aggressive driving.
 - How to avoid aggressive drivers.
 - The consequences of aggressive driving
- Improve areas for drivers to pull off the road safely and sleep when needed. Rest stops with good lighting and safe parking, interstate on/off ramps with wide shoulders, and shopping mall and “big box store” parking lots can provide safer places for drivers to rest or nap.
- Promote guidelines for seniors to self-assess their driving abilities and limits so that seniors can voluntarily limit or cease their driving when indicated.
- Promote physician assessments of their senior patients’ driving capacity.
- Support roadways and vehicle improvements to improve senior driver safety.
- Expand Safe Routes to School programs.
- Educate the driving public about pedestrian laws.
- Promote the National “Spot the Tot” Program launched October 2006.
- Target parents, children, and seniors for safe street crossing behavior.
- Build community partnerships to reduce pedestrian injuries and deaths.
- Make low cost bicycle helmets available to community groups for sale, donation, distribution, and correct fitting.
- Improve the Washington State Drivers’ Guide to educate motorists about:
 - Sharing the road safely with bicyclists.
 - Roles and responsibilities of all roadway users (trucks, passenger cars, motorcyclists, bicyclists, and pedestrians).
 - Safe behavior around bicycles.
- Provide assistance in local community coalition building and technical support for traffic safety.
- Identify high-risk groups that need a focused intervention.
- Build new and expand partnerships with tribes, non-traditional partners, schools, senior centers, service clubs, and others to address specific, local traffic safety problems. These would depend on the data, the needs, and the gaps in prevention work of the area.
- Build community capacity with local people and organizations that have:
 - Have a vested interest in the health and safety of their communities.
 - Know the roadways.
 - Know the people involved who can effectively bring the safety message to the community.
 - For communities that plan, implement, and evaluate traffic safety programs, state agencies provide data, materials, resources, technical assistance, and support – ongoing technical assistance.

Implementation Plan

The four priority areas have a DOH Implementation Plan. These specific plans provide an outline of DOH's Injury and Violence Prevention efforts through 2010.

These implementation suggestions will focus on the leading factors and/or populations that contribute to

motor vehicle crashes: impairment, speeding, occupant protection, and young or new drivers. If people are properly restrained in a vehicle, their risk of injury or death in a crash is reduced.

Goal: Deaths and hospitalizations due to motor vehicle crashes are decreased.

Objectives	Strategies	Partners	Timeline
Partner with other state and local agencies and organizations to reach target audiences with DUI prevention programs	<ul style="list-style-type: none"> • Support strong enforcement of DUI laws • Support concept of Sobriety Checkpoints • Collaborate on public media campaign about the dangers and responsibilities related to impaired driving 	WA Traffic Safety Commission, WA State Patrol, Liquor Control Board, AAA Washington, & EMS and Trauma Regions	Ongoing
All designated trauma services in Washington State will have fully implemented Screening and Brief Alcohol and Drug Intervention (SBI) with targeted patients, an evidenced based intervention to reduce alcohol and drug-related trauma recidivism.	<ul style="list-style-type: none"> • Obtain funding from and partner with WTSC for statewide SBI work. • Provide training, materials and support on brief alcohol and drug intervention (BI) in designated trauma services and other medical facilities • Work with Division of Alcohol & Substance Abuse (DASA) on sustainability of federally-funded WASBIRT 	WA Traffic Safety Commission, Division of Alcohol and Substance Abuse, designated trauma services, Trauma Nurse Network, & Trauma Program Managers	By December 31, 2010
Partner with other state and local agencies and organizations to promote correct use of safety restraints systems appropriate for each age – infant through senior.	<ul style="list-style-type: none"> • Continue to support chld car and booster seat inspection and fitting stations through Safe Kids Coalitions, Child Passenger Safety Teams, Traffic Safety Task Forces, and other community groups. • Continue to support adult occupant restraint: every time every ride. 	WA Traffic Safety Commission, Community partners, EMS & Trauma REgions, EMS & Fire agencies, etc	Ongoing
Provide assistance in local coalition building and partnering with Community DUI/Traffic Safety Task Forces and Traffic Safety Corridor projects to address specific, local traffic risk areas as projects are identified.	<ul style="list-style-type: none"> • State and regional injury prevention staffs are involved in corridor safety projects and community traffic safety task forces. 	WA Traffic Safety Commission, EMS and Trauma Regions, law enforcement agencies, & specific community groups working on local projects	Ongoing
New evidence-based interventions are shared with partners, along with ideas on how to implement in specific areas with target populations.	<ul style="list-style-type: none"> • Review new research literature, synthesize, and circulate with partners. • Provide training on new & significant evidence based practices 	Injury Prevention & Research Centers, Centers for Disease Control and Prevention, EMS & Trauma Regions, & Safe Kids Coalitions	Ongoing
Improve safe driving skills among new teen drivers	<ul style="list-style-type: none"> • Include mandatory parental involvement component in driver education curricula • Distribute parental involvement component to public and private driving schools • Improve Intermediate Driver License (IDL) Law to limit number of teen passengers for longer time period; and increase driving curfew hours. 	WA Traffic Safety Commission, Dept. of Licensing, AAA Washington, Driving Schools, Superintendent of Public Instruction, WA State Patrol	By December 31, 2010

For More Information

Washington State

American Automobile Association, Washington State

www.aaawa.com, News and Safety Icon

Harborview Injury Prevention and Research Center

www.hiprc.org

Washington State Child Passenger Safety (CPS) Program and Booster Seat Coalition

www.800BUCKLUP.org

www.boosterseat.org

and the CPS phone number: 1-800-BUCK-L-UP Spanish-language resources are also available

Washington State Department of Health Injury & Violence Prevention Program, Washington State Childhood Injury Report, 2004

www.doh.wa.gov/hsqa/emstrauma/injury/pubs/wscir/default.htm

Washington State Department of Health, Health of Washington State. Motor Vehicle Chapter

www.doh.wa.gov/HWS

Washington State Patrol

www.nhtsa.dot.gov/people/outreach/safesobr/16qp/adprograms

Washington State Patrol, El Protecto

www.wsp.wa.gov/about/elprotct

Washington State's Strategic Highway Safety Plan: Target Zero

February 2007

www.wsdot.wa.gov/planning/SHSP.htm

Washington Traffic Safety Commission (WTSC)

www.wa.gov/wtsc/

National

The National Highway Traffic Safety Administration (NHTSA)

www.nhtsa.dot.gov/people/outreach/safesobr/16qp/battling.html

Ten Promising Sentencing Practices for Addressing the DWI Offender

www.nhtsa.gov/people/injury/enforce/PromisingSentence/pages

Traffic Safety Marketing

<http://trafficsafetymarketing.gov>

The American Association of State Highway and Transportation Officials (AASHTO) Website:

www.aashto.org, Strategic Plan, <http://cms.transportation.org/?siteid=60>

The National Strategic Highway Safety Plan

<http://safety.transportation.org/plan.aspx>

Traffic Injury Research Foundation

<http://trafficinjuryresearch.com/index.cfm>

NCHRP Report 500, Volume 10: A Guide for Reducing Collisions Involving Pedestrians

<http://safety.transportation.org/guides.aspx?cid=29>

Safe Kids Worldwide

www.safekids.org

Children's Hospital of Philadelphia for ongoing sources of research data and tools for educational outreach materials

www.chop.edu

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

www.cdc.gov/ncipc

National Highway Traffic Safety Administration, "Speed

Management Strategic Initiative," September 2005, DOT HS 809 924

Endnotes

- 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.
- Washington Traffic Safety Commission. (2007) Washington State Highway Safety Performance Plan: Target Zero. Olympia, WA: Washington Traffic Safety Commission. Retrieved May 23, 2007 from www.wsdot.wa.gov/NR/rdonlyres/BC9C8BDB-A735-4948-850A-47B72696E4D9/0/SHSP.pdf.
- Braver, E. R. & Trempe, R. E. (2004). 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.
- Washington Traffic Safety Commission. (2007) Washington State Highway Safety Performance Plan: Target Zero. Olympia, WA: Washington Traffic Safety Commission. Retrieved May 23, 2007 from www.wsdot.wa.gov/NR/rdonlyres/BC9C8BDB-A735-4948-850A-47B72696E4D9/0/SHSP.pdf.
- Kahane, C.J. (2000). 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.
- Washington Traffic Safety Commission. (2007). Seat belt use rates in Washington State, 2006. Olympia, WA.
- Zaloshnja, E., Miller, T. R. & Hendrie, D. (January 2007). Effectiveness of child safety seats vs. safety belts for children aged 2 to 3 years. *Archives of pediatrics & adolescent medicine*, 161, 65-68.
- Washington Traffic Safety Commission. (2001). 2000 Survey of Passenger Restraint Use among Children. Olympia, WA: Washington Traffic Safety Commission.
- Paulozzi, L. J. & Patel, R. (2004). Trends in motorcycle fatalities associated with alcohol-impaired driving --- United States, 1983-2003. *Morbidity and Mortality Weekly Report*, 53(47), 1103-1106.
- Washington Traffic Safety Commission. (October 2000). The Crash Involvement of Young Novice Drivers: The problem and a solution. Olympia, WA: Washington Traffic Safety Commission.
- National Highway Traffic Safety Administration and Virginia Tech Transportation Institute. (April 2006) The 100-Car Naturalistic Driving Study, Phase II – Results of the 100 Car Field Experiment. DOT HS 810 593. Springfield, VA.

OCCUPATIONAL INJURY

DESCRIPTION:

Any wound or damage to the body resulting from an event in the work environment.

Occupational injury fatalities are those injuries that occur during the course of employment in Washington State that result in death.

Non-fatal occupational injuries are those injuries that result in lost work time of greater than three days, total or partial disability, or kept-on-salary by employers in the Washington Workers' Compensation System.



Washington State Goal Statement

To decrease deaths and hospitalizations due to occupational injury

National Healthy People 2010 Objectives

- Reduce work-related injury deaths from 4.5 deaths per 100,000 full-time workers age 16 years or older in 1998 to 3.2 deaths per 100,000 full-time workers age 16 years or older in 2010
- Reduce work-related injuries resulting in medical treatment, lost time from work, or restricted work activity from 6.2 work-related injuries per 100 full-time workers age 16 years and older in 1998 to 4.3 work-related injuries per 100 full-time workers age 16 years and older in 2010

Statement of the Problem in Washington State

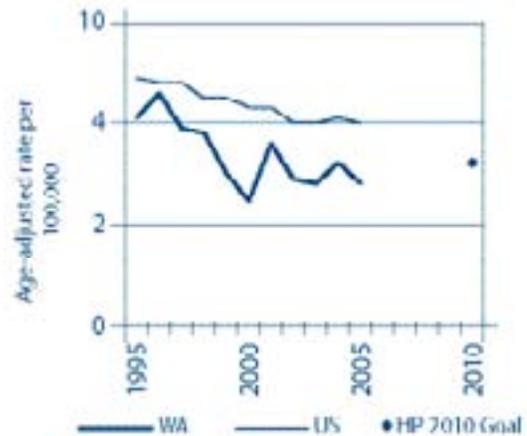
Washington State Data

Washington State has lower occupational injury fatality rates than the nation. In 2004, the national occupational injury fatality rate was 4.1 per 100,000 workers. The Washington State injury fatality rate was 3.4 per 100,000 workers. The state's fatality rate fluctuates due to the low number of deaths each year.

Data for non-fatal occupational injury rates are not comparable between states or to a national average.^{1,2} The most reliable and accurate estimates of Washington's non-fatal occupational injury rates come from the state-run Washington Workers' Compensation System.

The workers' compensation system accepts over 170,000 injury claims per year. Roughly one-quarter

Fatal Occupational Injuries
Washington State & United States
Bureau of Labor Statistics 1995-2004



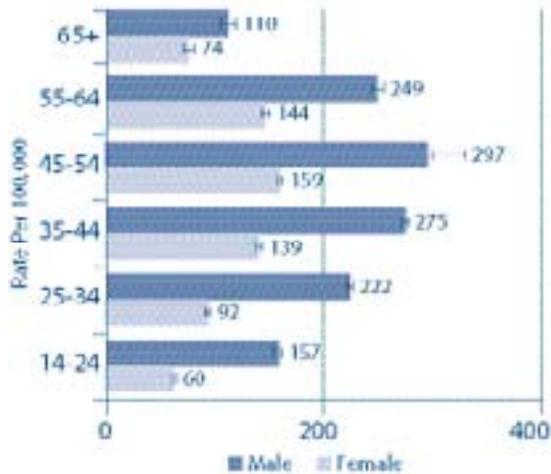
to one-third of all claims result in wage replacement payments, partial or total permanent disability awards, or modified work duties with the employee kept on salary by their employer. These are called 'compensable' claims.³

In 2000, the number of compensable claims from occupational injury was 49,434. In 2004, the number fell to 40,377. Likewise, in 2004, the compensable claims incidence rate fell from 2,360 to 1,950 claims per 100,000 FTE employees.

Age and Gender

From 2001-2003, males had higher compensable claims rates for all age groups. Injury rates for males and females between ages 45-54 exceed those of both younger and older workers. Injury rates per 100,000 workers do not differentiate part-time from full-time workers. Consequently, differences in employment patterns across age groups may influence rate differences.

Non-fatal Occupational Injuries
Age and Gender
Washington State Workers' Compensation
Database, 2001-2003



Risk and Protective Factors
Industry Distribution

Major industrial sectors at high risk for occupational fatalities in Washington State for the year 2004 include:

- Agriculture, forestry and fishing (18 deaths per 100,000 workers).
- Transportation and public utilities (10 deaths per 100,000 workers).
- Construction (9 deaths per 100,000 workers).

From 2003-2004, transportation incidents caused 36% of Washington State's occupational fatalities. Falls (16% of deaths) and being struck by an object (14% of deaths) were the second and third leading causes of occupational fatalities.

Risk factors for occupational fatality vary by industry.

In transportation and public utilities:

- 42% of the deaths were due to highway motor vehicle crashes.
- 31% of the deaths were due to contact with objects or equipment.

In construction:

- 44% of the deaths were due to falls.
- 25% of the deaths were due to contact with objects and equipment.

In agriculture, 60% of the deaths resulted from transportation incidents.

Non-fatal occupational injury rates differ by industry sector. Compensable claims rates are highest in the transportation and warehousing industry sector (4,490 per 100,000 FTE employees in 2004). Construction has the greatest number of claims – 5,690 – of all industry sectors. It has a high claims rate, 4,310 per 100,000 FTE employees. Compensable claims rates in other industry sectors include:

- Public administration (2,750 per 100,000 FTE employees).
- Agriculture, forestry, and fishing (2,520 per 100,000 FTE employees).
- Manufacturing (2,080 per 100,000 FTE employees).

Injury types also vary by industry and reflect the distribution of physical hazards in the workplace.⁴

Recommended Strategies

Evidence-Based Strategies

Regulatory enforcement inspections reduce occupational injury rates

Regulatory enforcement inspections are linked with a drop in some compensable workers' compensation claims rates. This is true for fixed-site employers in a single business location with more than 10 employees. Claims rates for employers with regulatory enforcement activities by Washington State's Occupational Safety and Health Administration's (OSHA) Plan declined 22.5% in fixed site industries compared to 7% among employers with no state OSHA activity.⁵

Promising or Experimental Strategies

Focus enforcement and consultation resources

The Washington State Department of Labor and Industries (L&I) focuses prevention resources on high-risk employers and industries. Ongoing L&I initiatives and programs to improve compliance with regulations include:

- Improving scheduling protocols to focus state enforcement and consultation on high-risk employers and industries (for example, construction, transportation, and manufacturing).
- Revision of the Washington State occupational safety and health rules to increase employers' and workers' understanding.
- Identifying policy gaps in workplace safety and health regulation.⁴
- Translating injury prevention research into practice for:
 - At risk populations, such as, younger and older workers, through training and outreach to employers, workers, and safety and health professionals.
 - Workplace policies that may affect occupational injury⁶ (for example, drug-free workplace programs).

Expanded cooperative programs

Workers, worker groups, employers, and employer associations participate in workplace safety. Their active engagement leverages existing state resources. Improvements in worker safety may occur through a variety of voluntary activities:

- Recognition programs for employers with exemplary safety records, such as the voluntary protection and small business recognition programs.
- Partnerships with industry associations to foster safe workplaces through training, education, and the sharing and development of innovative solutions.
- Financial incentives for primary injury prevention through the workers' compensation system and the retrospective rating program.

Develop social marketing campaigns for occupational safety and health

Occupational safety and health does not depend solely on the regulatory activities of the state and federal governments. Occupational safety and health need to be integrated into general public health activities. A safe workplace depends on the active involvement of public health agencies and the general public. We need campaigns to educate the public about the burden of occupational injury and fatalities. This will increase greater awareness and investment in occupational safety and health. There is an opportunity to incorporate occupational injury prevention into existing national prevention programs on violence, drug and alcohol use, and on motor vehicle injury. The most effective way to reduce injury and fatality rates over time may be to integrate safety into the workplace. This would adopt a systems approach with many strategies for multiple types of injury prevention.

For More Information

Washington State

Setting Up an Occupational Safety and Health Program, Washington State Department of Labor and Industries: Steps to a Safe Workplace

www.lni.wa.gov/Safety/Basics/Steps/default.asp

Occupational Safety and Health Rules for Workplaces Washington State Department of Labor and Industries: Core Rules

www.lni.wa.gov/wisha/rules/corerules/default.htm

National

Injury Prevention in Construction; Center to Protect Workers Rights (CPWR)

www.cpwr.org

NIOSH Traumatic Occupational Injury

www.cdc.gov/niosh/injury/default.html

Occupational Injury Prevention; American Society of Safety Engineers

www.asse.org

Endnotes

- ¹ Azaroff, L.S., Levenstein, C. & Wegman, D.H. (2002). Occupational injury and illness surveillance: conceptual filters explain underreporting. *American Journal of Public Health*, 92(9), 1421-1429.
- ² Rosenman, K.D., Kalush, A., Reilly, M.J., Gardiner, J.C., Reeves M. & Luo, Z. (2006 Apr). How much work-related injury and illness is missed by the current national surveillance system? *Journal of Occupational Environmental Medicine*, 48(4), 357-365.
- ³ The Washington workers' compensation system identifies three types of claims: 1. Rejected claims in which the injury or illness does not qualify for workers' compensation benefits; 2. Medical only claims which result only in medical treatment; and 3. Compensable claims. Data were obtained from the Washington workers' compensation system data warehouse on 10/11/2006. Over time workers' compensation claims may convert from medical only to compensable thus influencing the reported number of compensable claims during a reported period.
- ⁴ Bonauto, D.K., Silverstein, B.A., Adams, D. & Foley, M. (2006). Prioritizing industries for occupational injury and illness prevention and research, Washington State workers' compensation claims, 1999-2003. *Journal of Occupational, Environmental Medicine*, 48(8), 840-851.
- ⁵ Baggs, J., Silverstein, B. & Foley, M. (2002). Workplace health and safety regulations: impact of enforcement and consultation on workers' compensation claims rates in Washington State. *American Journal Industrial Medicine*, 43, 483-494.
- ⁶ Wickizer, T.M., Kopjar, B., Franklin, G. & Joesch, J. (2004). Do drug-free workplace programs prevent occupational injuries? Evidence from Washington State. *Health Services Research*, 39(1), 91-110.

POISONING AND DRUG OVERDOSE

DESCRIPTION:

The damaging physiologic effects of ingestion, inhalation, or other exposure to a broad range of chemicals, including pesticides, heavy metals, gases/vapors, drugs, and a variety of common household substances, such as bleach and ammonia. Included are accidental overdoses of drugs, a wrong drug given or taken in error, and a drug taken inadvertently.

This section is a priority area for the Washington State Department of Health.



Washington State Goal Statement

To decrease deaths and hospitalizations due to unintentional poisoning

National Healthy People 2010 Objectives

- Reduce poisoning death rate from 6.8 in 1998 to no more than 1.5 per 100,000

Statement of the Problem in Washington State

Washington State Data

In 2005, Washington State's poisoning death rate at 14 per 100,000 was higher than the national death rate of 11 per 100,000.

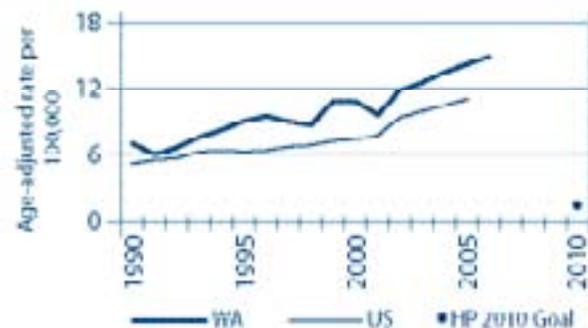
Based on 2006 data in Washington State, poisoning is the first leading cause of unintentional injury-related death. It is the third leading cause of unintentional hospitalization. Over 90% of poisoning deaths in Washington State are due to drug overdoses and about 2% are due to alcohol poisoning.

From 1990-2006, unintentional poisoning death rates have increased by 395% from 2.3 to 11.3 per 100,000. Suicide, homicide, and undetermined poisoning rates have remained relatively stable. Because of these trends, the remainder of this chapter will focus on unintentional poisoning.

Opiate use and misuse appear to be driving the increase in poisoning deaths. Alcohol and other drug abuse are also important public health issues with enormous impacts on many types of injury and violence.

Poisoning Deaths

Washington State & United States Death Certificates, 1990-2006

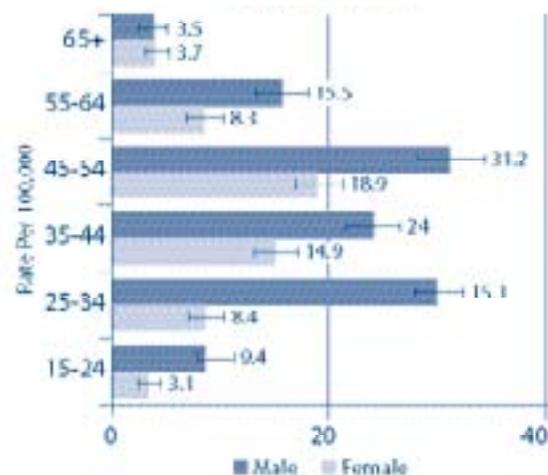


Age and Gender

From 2004-2006, males had higher unintentional poisoning death rates. The highest death rates among males were for ages 45-54. However, for poisoning deaths related to prescription opiates, males and females had similar rates.

Unintentional Poisoning Deaths

Age and Gender
Death Certificates, 2004-2006



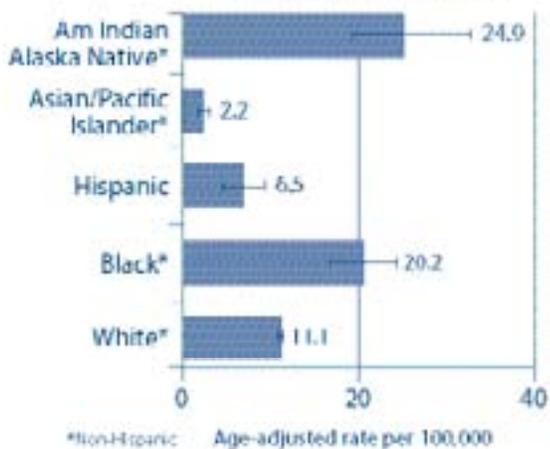
Deaths among licit and illicit drug users in Washington State have a similar age and gender pattern. In the only study available, the average age of chronic pain patients who received opiate medications was 52.¹ Children younger than 15 had fewer than 20 deaths. The chart does not include these groups.

Race and Ethnicity

For 2004-2006 combined, American Indians and Alaska Natives had the highest age-adjusted unintentional poisoning death rate. African Americans had the next highest. Death rates for whites were in the middle, followed by people of Hispanic origin. Asian and Pacific Islanders had the lowest rates.

In addition, unintentional poisoning death rates are higher in low-income neighborhoods and among those with lower education.² Research has not investigated the relative importance of race, Hispanic origin, poverty, and education on poisoning death rates.

Unintentional Poisoning Deaths
Race and Ethnicity
Washington State Death Certificates, 2004-2006



Drugs in Unintentional Poisoning Deaths

In 2006 in Washington State, the table below shows that for those who died of an unintentional poisoning, methadone was the most commonly listed drug on the death certificates, followed by cocaine and alcohol.

Unintentional Poisoning Deaths
Washington State Death Certificate Data, 2006
Total Number of Death = 745

Drug Identified on Death Certificate	Number of death certificates with drug listed*
Methadone	308
Cocaine	186
Alcohol	174
Oxycodone	102
Hydrocodone	71
Methamphetamine	69
Morphine	54
Diazepam	53
Opiate, unspecified	51
Heroin†	47

*Because the average number of drugs listed on the death certificate was 2.6 per person, the number of times drugs are identified does not add up to the total number of deaths.

† Heroin-related deaths may be underestimated because many are listed as morphine, opiate, or unspecified.

Prescription or Illicit Drugs

On the death certificates for unintentional opiate-related poisoning deaths in 2005 and 2006:

- Almost two-thirds (64%) listed only a prescription drug(s).
- About 20% listed both prescription and illicit drugs.
- Only 11% listed only an illicit drug(s).

In a minority of cases, no one could determine if the drug was prescription or illicit. For example, if the generic term 'opiate' was used, no one could determine if the medical examiner or coroner meant heroin or a prescription-type opiate.

Unintentional Poisoning Deaths
Washington State Death Certificate Data, 2005-2006

Type of Drug	Number of Deaths	Percent
Prescription	709	63
Illicit	118	11
Both	243	22
Neither	46	4
Total	1116	

Multiple Drugs Involved

In 2006, 71% of those who died from an opiate drug overdose had taken more than one drug. The average number of drugs taken was 2.6. The average number of drugs taken was higher among those who died from prescription opiate overdose compared to illicit opiates. The other drug categories most commonly taken were antidepressants and benzodiazepines, which are anti-anxiety drugs such as valium.

Potential Causes of the Increasing Death Rate

In Washington State at the end of the 1990s, various groups, including the Medical Quality Assurance Commission, Podiatric Medical Board, and the Board of Osteopathic Medicine and Surgery recognized the important use of opiates for treating chronic, non-cancer pain and developed new policies. These new policies reflected a major shift in thinking. The policies were also based on low-grade evidence suggesting that patients suffered from an under treatment of pain and there was a low risk of addiction while taking opiates long-term. These new policies led to a change in regulatory restrictions for opiate use for chronic, non-cancer pain.

At the national level³ and in states⁴ and counties that have conducted in-depth examinations of the increase in poisoning deaths, prescription opiates accounted for much of the increase. From 1995-2004 in Washington State, there was a shift from illicit and unspecified opiate-related deaths to prescription opiate-related deaths. On death certificates, the opiate listed with the most dramatic increase was methadone.

In Washington State, the increase in death rate from unintentional poisoning coincides with a jump in prescription opiate sales and subsequent distribution from manufacturers to hospitals and pharmacies. From 1997-2005, the approximate number of methadone doses increased 1,042% from 918,004 to 10,481,780 and the approximate number of oxycodone doses increased 500% from 1,941,270 to 11,650,127.⁵ Because methadone distributed through pharmacies and hospitals is only for pain management, this data does not reflect methadone dispensed in methadone maintenance treatment programs.

Besides an increase in distributed prescription opiates, there appears to be a trend toward using more potent opiates and/or a higher dose per prescription. In the Washington Workers' Compensation System, prescriptions for the most potent opiates (Schedule II) as a percentage of all scheduled opiate prescriptions (Schedules II, III & IV) increased from 19.3% in 1996 to 37.2% in 2002.⁶

Among long-acting opiates, the average daily morphine equivalent dose increased by 50% to 132 milligrams (mg) per day. As of 2005, the average daily morphine equivalent dose had further increased to 150 Mg per day. From May-July, 2006, the Washington State Medicaid Program reviewed prescription data. Of the 3,591 Medicaid clients treated for chronic, non-

cancer pain with at least 90 Mg of morphine equivalent dosage per day, 2,739 (76%) received more than 180 Mg of morphine equivalent dosage per day.

Causes of Unintentional Opiate-related Poisoning Deaths

Legitimate medical treatment with opiates

Pain is very common. About 24% of U. S. adults reported moderate to extreme pain in the past month.⁷ In 2005, about 19% of the 50 million United States adults who used Express Scripts, a large commercial pharmacy benefit program, received a prescription for opiates.⁸

Chronic opiate use is linked to the development of tolerance to its analgesic or pain relieving effect.⁹ Tolerance is defined as a decrease in a drug's effect over time so that larger doses are required to achieve the same effect. Chronic opiate use also may be associated with hyperalgesia, an increase in abnormal pain sensitivity.⁹ In an attempt to maintain pain relief, the combination of tolerance and hyperalgesia may lead to rampant dose escalation.⁹

Respiratory depression, a decrease in the rate or depth of a patient's breathing, is one of the side effects or risks of opiate use. Opiate poisoning deaths are often due to respiratory failure from respiratory depression. As with pain relief, tolerance to respiratory depression develops with chronic opiate use. However, research suggests that tolerance to respiratory depression is incomplete and may develop more slowly than tolerance to the pain relieving effect.¹⁰

Other risk factors for unintentional opiate-related poisoning include:

- Concurrent use of other central nervous system depressants like benzodiazepines and sedative-hypnotics.
- The existence of other medical conditions associated with compromised respiratory function such as chronic obstructive pulmonary disease, congestive heart failure, and sleep apnea.

Misuse of Prescription Opiates

In addition to legitimately prescribed opiates, prescription opiates can be obtained in various other ways:

- From a friend or relative with a prescription.
- Obtained from emergency rooms through fraudulent drug-seeking means.
- Purchased on the street or from the Internet.
- Stolen from pharmacies.

During treatment for chronic pain, prescription opiates can be misused by taking more than the prescribed dose or by combining opiates with illicit drugs or alcohol.

Nationally, the U. S. Substance Abuse and Mental Health Services Administration's Drug Abuse Warning Network tracks drug-related emergency department visits. These visits relate to both misuse and abuse of drugs. For prescription drugs, the definition of 'non-medical' use includes:

- Taking more than the prescribed dose of a prescription drug.
- Taking a drug prescribed for another individual.
- Deliberate poisoning with a drug by another person.
- Documented misuse or abuse of a prescription drug.

Opiates accounted for about one-third of all non-medical prescription drug use visits, making them the most frequently reported drugs. In 2006 in King and Snohomish counties, there were 3,529 reports of prescription opiate emergency department visits. The visits were identified as:

- Drug abuse (54%).
- Adverse reaction (18%).
- Accidental overmedication (18%).

From 1999-2006 in Washington State, addiction treatment admissions where prescription opiates were the primary drug of abuse increased from 1.0% to 4.6%. Treatment admissions included public pay clients in inpatient, outpatient, and methadone maintenance treatment. Admissions also included private pay clients entering methadone maintenance treatment.

Trends in Non-medical Use of Prescription Pain Killers

From the 2005 National Survey on Drug Use and Health data, the illicit drug category with the highest number of new users was 'non-medical,' prescription pain medication.¹¹ The survey defined 'non-medical' use as taking medication not prescribed or taking medication for the experience or for the feeling that it caused.

In 2005, there were 2.2 million people, ages 12 years old or older, who took prescription pain medication non-medically for the first time and about 4.7 million who were current users of prescription pain medication. The average age for first time non-medical use was 23 years. About 55% of first time, non-medical users were female. About 12% of current

users met the abuse or dependence criteria. The 2005 survey estimated there were 306,000 non-medical, prescription pain medication users in Washington State.¹¹

Among non-medical users of prescription pain medications, the most prevalent source for drugs (about 60%) was "from a friend, or relative, or for free." Other sources for obtaining prescription pain medications include:

- About 17% from a doctor.
- 4% from a drug dealer.
- 1% purchased from the Internet.¹¹

Youth Drug Use

The 2006 Healthy Youth Survey estimated the following percentage of youth who reported using a painkiller such as oxycontin or percocet to get high in the past 30 days:

- 4% of 8th graders (about 3,600 students).
- 10% of 10th graders (about 9,300 students).
- 12% of 12th graders (about 10,900 students).

Native American students reported less abuse of painkillers compared to those in other race groups. Students who lived in rural, urban and suburban areas of the state had similar levels of painkiller abuse. The students who reported painkiller abuse tended to have lower socioeconomic status, lower quality of life, lower grades and did not enjoy school as much as their peers. They were also students who participated in other risky behaviors such as other substance abuse and drinking and driving.

There are no national surveys that ask the same question. However, according to the 2005 National Survey on Drug Use and Health, 10% of youth ages 12-17 reported using prescription pain relievers in their lifetime.¹¹

Teens have access to prescription pain relievers. Nationally, according to the 2005 Partnership Attitude Tracking Study, nearly one-in-five teens (7th-12th graders) in their lifetime reported having used prescription medications that were not prescribed for them.¹²

- More than three out of five teens reported prescription pain relievers are easy to get from parents' medicine cabinets.
- Half of teens say it is easy to get prescription medications through other people's prescriptions.
- About 35% of teens believe prescription pain relievers are safer to use than illegal drugs.

- Parents are less likely to discuss the risks of prescription medicine abuse than they are to discuss the risks of marijuana abuse.

Childhood Poisoning

While the highest death rates occur among adults, the majority of reports to the Washington Poison Center (WAPC) are for non-fatal poison exposures to children under six years. In 2004, the WAPC received 69,000 calls for advice about a possible poisonous exposure to a human. The WAPC also handles possible exposures to animals.

- About 90% of the incidents occurred in a home.

- 52% of the incidents occurred to a child under six years.
- The majority of all exposure calls (83%) were handled without transfer to a health care facility.
- 94% percent of exposure calls to children ages six or under were handled without transfer to a health care facility.

The most common substances involved in possible exposures are medications. For example, the top three includes analgesics, topical preparations, and cold and cough preparations. Other common exposures include personal care products, and cosmetics.

Recommended Strategies

At present, the primary cause of the increased unintentional poisoning death rate is unclear. It is likely due to a combination of factors such as:

- Prescription drug misuse and abuse.
- The increase in use of prescription opiates with an increase in average daily dose.
- The development of tolerance.

Because no single cause has been identified, a variety of prevention strategies is recommended.

To date, no one has systematically evaluated interventions to change behaviors and risk factors associated with the epidemic of poisoning deaths among adults. However, the following promising prevention strategies are provided to address the increased unintentional poisoning death rate. These strategies are based on recommendations from the North Carolina Task Force to Prevent Deaths from Unintentional Drug Overdoses¹³ and from the Centers for Disease Control and Prevention (CDC).¹⁴

Evidence-Based Strategies

Despite the lack of evidence-based interventions for unintentional death from prescription opiates, several prevention strategies show some impact on poisoning in a broader sense.

Increase awareness of the Washington Poison Center (WAPC)

Use of poison control centers has significantly reduced medical costs. Every call to a poison control center saves \$175 in other medical spending.¹⁵ By providing effective home management of poisoning emergencies, poison centers:

- Reduce the number of 911 calls.
- Prevent undue ambulance dispatches.
- Avoid costly hospital visits.

It is not clear how aware the public is of the WAPC's services. Efforts to increase awareness in the WAPC's services will benefit Washington State citizens.

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

The WASBIRT program screens trauma, general medical, and other patients for alcohol or drug misuse, abuse, or addiction. The majority of the screening occurs in emergency departments. Also, as appropriate, the WASBIRT program provides brief interventions or referrals for higher levels of care.

Hospitals in six counties with some of the largest emergency room patient loads are participating in the WASBIRT Project. These include: Harborview Medical Center in King County; Southwest Washington Medical Center in Clark County; Providence Everett Medical Center in Snohomish County; Tacoma General and Allenmore Hospitals in Pierce County; Toppenish Community Hospital, Yakima Regional Medical and Heart Center, and Yakima Valley Memorial Hospital in Yakima County; and Providence St. Peter Hospital in Thurston County.

Up to 50% of trauma patients seen in an emergency department (ED) had been using alcohol and other drugs prior to admission.¹⁶ As a means to prevent unintended poisoning, EDs are ideal settings to identify and intervene in drug-seeking behaviors.

Also, studies show that psychosocial interventions delivered to ED and to trauma center patients can:

- Reduce alcohol and drug consumption.
- Prevent future injury, including overdoses.
- Help patients with more severe problems.
- Help patients access intensive, community-based chemical dependency treatment.

Of those who receive a WASBIRT screen, approximately 50% need a brief intervention and 16% need higher levels of care. The need for brief intervention and higher levels of care in this population is about four and a half times higher than in the general population. Data from the WASBIRT Evaluation Project shows a significant reduction in alcohol and other drug use and a significant increase in abstinence across all interventions.¹⁷

Promising or Experimental Strategies

Strategies Underway in Washington State

Implement a statewide Pharmacy Take Back Program

Pharmacy Take Back Programs allow citizens to bring back unwanted or outdated medications to the pharmacy for proper disposal. The goals of this program are to reduce water pollution, diversion to other users and unintentional poisoning. The drugs collected through the programs are incinerated.

Clark County runs a pilot program in which pharmacies can take non-controlled substances and the Sheriff's Department can take controlled substances (e.g., prescription pain relievers). Group Health Cooperative has a similar program for non-controlled substances; this program is not yet statewide.

A waiver from the U. S. Drug Enforcement Agency is required before these types of programs can accept controlled substances. Department of Health has applied for a waiver. The Governor wrote a letter to Drug Enforcement Agency in support of the waiver.

Education for health care professionals

Educational interventions are needed to raise professional awareness of the:

- Magnitude.
- Risks.
- Signs of significant tolerance.
- Signs of unintentional overdose.

In Washington State, the Interagency Workgroup on Practice Guidelines (including representatives from the Department of Corrections, Department of Health, Department of Labor and Industries, Department of Social and Health Services, and Health Care Authority) in collaboration with actively practicing physicians who specialize in pain management has released a guideline on opioid dosing for chronic non-cancer pain. These clinical and practice guidelines are part of a yearlong educational campaign to improve care and safety when treating chronic non-cancer pain with opioids.

The guidelines recommend monitoring pain and function in the medical record. If opioid doses are substantially increasing with no clear improvement in pain and function, then rampant tolerance may be developing. These guidelines recommend when to seek a specialty consultation. The guidelines specifically recommend a pain management consultation before increasing the daily dose of opiates above 120 Mg of oral morphine equivalents, if pain and function have not improved.

Since the release of these guidelines, there has been concern expressed by the American Pain Society and other pain advocates that these guidelines may add unnecessary restrictions and additional barriers to patients who experience pain.

Screening for high abuse risk patients

The Washington State Medicaid Program identifies clients who have received ten or more narcotic prescriptions per month from multiple providers. A 12-month prescription history is provided to prescribing providers. This is done to develop a comprehensive intervention strategy to improve the quality of life, reduce misuse of narcotics, and to assist providers in complex clinical decision-making. Also, to improve medical care, encourage providers to use the Medicaid-developed "toolkit" that links the medical community to resources and information. The "toolkit" gives the medical provider a comprehensive medical picture to:

- Improve care coordination.
- Review the medical treatment plan.
- Refer the patient, when appropriate, for chemical dependency screening and treatment.

For the "toolkit" Web site, see "For More Information" at the end of the chapter

The Department of Social and Health Services Patient Review and Coordination (PRC) Program

The PRC Program is a health and safety program for Medicaid clients. The PRC Program conducts utilization reviews to determine if there is inappropriate or medically unnecessary use of medical services. This includes the inappropriate use of opiates. For better coordination of medical care, PRC Program clients are restricted to one Primary Care Provider, one opiate prescriber, one pharmacy, or one hospital. The PRC Program clients have shown a:

- 33% decrease in Emergency Department use.
- 37% decrease in physician visits.
- 24% decrease in the number of prescriptions.

Increase use of case management in emergency departments for patients who frequently visit seeking pain medication

For patients who frequently visit emergency departments seeking pain medication, case management might reduce misuse of narcotics. Case management creates professional collaboration and exchange of medical information between emergency room personnel, primary care doctors, and pharmacists. Hospitals in Olympia, Spokane, and Tacoma have started such programs. Providence St. Peters, in Olympia, has seen a 50% reduction in emergency department visits and a 40% decrease in total hospital charges for patients enrolled in its program.

Strategies Underway in Other States

Electronic prescription monitoring system for controlled substances

The goals of electronic prescription monitoring systems are to:

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

Prescription-monitoring programs reduce per capita supply of prescription pain relievers and stimulants, potentially reducing their abuse. In addition, states that proactively identified patients who filled multiple prescriptions from different health care providers and investigated providers whose prescribing practices were outside the standards of accepted medical practice were more effective in reducing the per capita supply than states that were reactive in their regulatory approach.¹⁸ Researchers have not determined the effectiveness of these systems in reducing poisoning-related deaths or their impact on treating pain prevalence.

The U. S. Government Accountability Office conducted a study on state monitoring programs of prescription drugs.¹⁹ They concluded that state monitoring programs provide a useful tool to reduce diversion. In 2005, a federal law entitled the National All Schedules Prescription Electronic Reporting, provided for the establishment of a controlled substance monitoring program in each state. The funding and implementation of this law never occurred.

The CDC recommends that states with prescription monitoring programs proactively identify and investigate patients and providers.¹⁴ There are currently three states – Kentucky, Nevada and Utah – that have monitoring systems that provide access to prescription information to physicians to help reduce unwarranted prescribing and subsequent diversion of abused drugs in their states.

In Washington State, the Governor's Blue Ribbon Commission bill, which passed in 2007, gave the Department of Health the authority to implement an electronic prescription monitoring system. In 2008, the Legislature gave DOH partial funding for the system. DOH also applied for federal funding.

Other Promising or Experimental Strategies

Conduct research to identify the underlying cause of increased prescription opiate-related poisoning deaths

To effectively tailor prevention strategies, there is a need to determine the relative contributions of legitimate opiate medical treatment versus individual prescription opiate misuse and abuse. To further clarify the underlying causes of poisoning deaths, medical examiners need to collect information such as the opiate's source, the prescribed dose, and an estimated amount taken.

Provide educational interventions for the public

Provide broad-based educational interventions to raise awareness about:

- The magnitude and risks of unintentional overdose.
- Preventive behaviors and precautions.
- Available emergency and treatment resources.
- How to prevent substance abuse.

Target families with young children to raise awareness to:

- Eliminate potential hazards such as assure that medicines, vitamins, and household cleaners are either locked with a child safety latch or out of reach.
- Call the national poison hotline at 1-800-222-1222 if a child may have consumed a poisonous substance.

Target families with teenage children to raise awareness to:

- Lock up all prescription medicines, especially pain relievers in a lock box.
- Encourage parents to talk with their teens about the dangers of abusing prescription drugs.
- Dispose of unused prescription drugs by mixing unused drugs with coffee grounds, kitty litter, or

another undesirable substance and place in a sealed container before disposing in the trash. Prescription drugs should not be flushed down the toilet unless specifically instructed to do so. Where a community prescription drug take-back program exists, they are a good way to dispose of unused pharmaceuticals.

For existing drug prevention efforts, especially directed at teens, incorporate specific education about the risks of unintentional overdose of prescription narcotics.

Increase drug abuse prevention

The single most effective way of dealing with chemical dependency is preventing it. School-based programs focusing on social influences prevent or reduce drug use among young people, including both marijuana and hard drugs such as heroin.²⁰ The programs are most effective with youth who are not heavy drug users. These programs include training in how to resist peer pressure and improve decision-making skills.

Increase the number and use of drug courts
'Drug Courts' integrate drug treatment services with judicial system case processing, monitoring, supervision, mandatory drug testing, sanctions and other administrative services. The primary purpose of these programs is to use the court's authority to reduce crime by changing defendants' substance abuse behavior. In exchange for the possibility of dismissed charges or reduced sentencing, eligible defendants agree to participate in the program, which includes substance abuse treatment.

The available evidence suggests that drug courts reduce drug use and re-arrest rates, at least during treatment. However, we need additional evidence to determine whether drug courts are effective.²¹

Implementation Plan

The four priority areas have a DOH Implementation Plan. These specific plans provide an outline of DOH's Injury and Violence Prevention efforts through 2010.

Goal: Increase awareness of the increasing number of opiate overdose deaths among state, local, and non-profit partners.

Objectives	Implementing Organizations	Timeline
Publish data and possible prevention strategies in the Health of Washington State.	Washington State Department of Health	Ongoing
To educate partners about the increase in opiate overdose deaths and possible prevention strategies by giving presentations.	Washington State Department of Health	Ongoing

Goal: Develop recommendations for prevention strategies collaboratively with partner agencies.

Objectives	Implementing Organizations	Timeline
Convene a DOH-led workgroup to discuss the problem of unintentional drug overdoses as a group and possible actions to reduce and ultimately prevent unintentional poisoning deaths.	Washington State Department of Health	By June, 2008 then ongoing
Develop DOH prevention strategies in collaboration with other agency partners.	Washington State Department of Health	By December 2008

Goal: Continue poisoning mortality and morbidity surveillance to continue to describe the problem and help tailor prevention strategies.

Objectives	Implementing Organizations	Timeline
To analyze annual death data to identify unintentional poisoning deaths and individual drugs involved in overdoses.	Washington State Department of Health	Ongoing
To analyze annual hospitalization data to identify unintentional poisonings and individual drugs involved in overdoses.	Washington State Department of Health	Ongoing

For More Information

Washington State

Department of Social and Health Services (DSHS) has developed a Web site and toolkit to help with resources regarding drug and alcohol issues

<https://fortress.wa.gov/dshs/maa/pharmacy/ToolKit.htm>

Interagency Guideline on Opioid Dosing for Chronic Non-cancer Pain

www.lni.wa.gov/news/2006/pr061003a.asp

Health of Washington State, Chapters Alcohol Abuse and Dependence and Drug Abuse and Dependence in the Major Risk and Protective Factors section, and Poisoning in Injury and Violence section

www.doh.wa.gov/HWS

Medical Quality Assurance Commission, Guidelines for Pain Management

<https://fortress.wa.gov/doh/hpqa1/hps5/Medical/painmgmt.htm>

Northwest Product Stewardship Council, Medicine Take Back Program

www.medicinereturn.com/coordination

Patient Review and Coordination Program

<https://fortress.wa.gov/dshs/maa/PRR>

Washington State Alcohol and Drug 24 Hour Help Hotline

1-800-562-1240

www.adhl.org

Washington State Attorney General's Operation Against Meth

www.atg.wa.gov/AlliedAgainstMeth/default.aspx

Washington State Board of Pharmacy

<https://fortress.wa.gov/doh/hpqa1/HPS4/Pharmacy/default.htm>

Washington State Childhood Injury Report

www.doh.wa.gov/hsqa/emstrauma/injury/pubs/wscir/default.htm

Washington State Division of Alcohol and Substance Abuse

www.dshs.wa.gov/dasa/

Washington State Juvenile Justice Advisory Committee

www.juvenilejustice.dshs.wa.gov/

Washington State Medical Association

www.wsma.org/index.html

Washington State Board of Osteopathic Medicine and Surgery, Guidelines for Pain Management

<https://fortress.wa.gov/doh/hpqa1/hps7/Osteopath/Documents/GuidelinesForPainManagement.pdf>

Washington State Podiatric Medical Board

<https://fortress.wa.gov/doh/hpqa1/hps7/Podiatry/default.htm>

Washington State Poison Center

www.wapc.org/

Washington State Screening, Brief Intervention, Referral and Treatment (WASBIRT)

www.dshs.wa.gov/rda/projects/wasbirt.shtm

Washington State Toxicology Laboratory

www.wsp.wa.gov/about/flsbhome.htm

National

Big Brothers Big Sisters of America

www.bbbsa.org

Communities That Care Community Planning System

<http://ncadi.samhsa.gov/features/ctc/>

Drug Policy Alliance, New Mexico's 911 Good Samaritan law

www.drugpolicy.org/about/stateoffices/newmexico/911/

Life Skills Training Program

www.lifeskillstraining.com/

National Center for Injury Prevention and Control, Poisoning fact sheet

www.cdc.gov/ncipc/factsheets/poisoning.htm

National Youth Violence Prevention Center, Substance Abuse Prevention - Program Evaluations, Best Practices and Model Programs

www.safeyouth.org/scripts/faq/substabaseprev.asp

Preventing Prescription Drug Abuse

www.samhsa.gov/rxsafety/

Project Alert

www.projectalert.best.org

Signs and symptoms of drug addiction

www.mayoclinic.com/health/drug-addiction/DS00183/DSECTION=2

Strengthening Families Program

www.strengtheningfamilies.org

Substance Abuse in Brief Fact Sheet – Pain Management without Psychological Dependence: A Guide for Healthcare Providers

<http://ncadistore.samhsa.gov/catalog/productDetails.aspx?ProductID=17500>

Western Center for the Application of Prevention Technologies

<http://captus.samhsa.gov/western/western.cfm>

Endnotes

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SUFFOCATION

DESCRIPTION:

Suffocation occurs when the stoppage or disturbance of respiration, as by strangulation, choking on food, or other exclusion of oxygenated air occurs.



Washington State Goal Statement

To decrease deaths and hospitalizations due to suffocation

National Healthy People 2010 Objectives

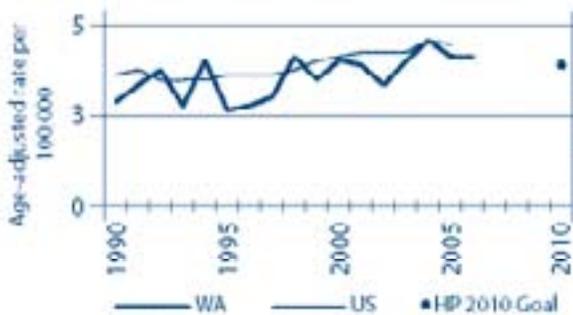
- Reduce suffocation deaths from 4.1 deaths in 1998 to 3.0 deaths per 100,000

Statement of the Problem in Washington State

Washington State Data

Suffocation rates have increased over the past 17 years in Washington State and nationally. Rates in the state are quite variable. In 2006, the latest data available, the suffocation rate in Washington was 4 per 100,000.

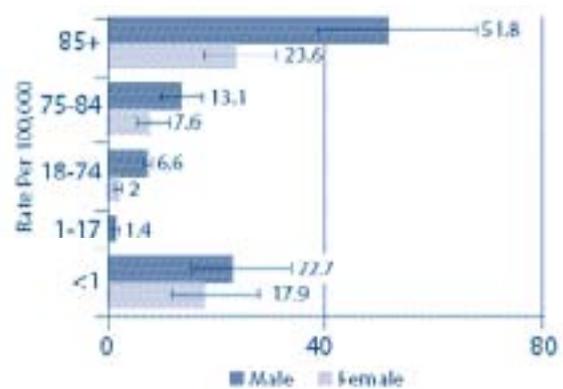
Suffocation Deaths
Washington State & United States Death Certificates, 1990-2006



Age and Gender

From 2004-2006, in Washington State, both children under the age of one and adults ages 85 and older have the highest risk of death from suffocation. For ages 15-64, suicides are about 77% of suffocation deaths. For those over 65, suicides represent about 17% of suffocation deaths. Females 1-17 years old had fewer than 20 deaths; the chart does not include them.

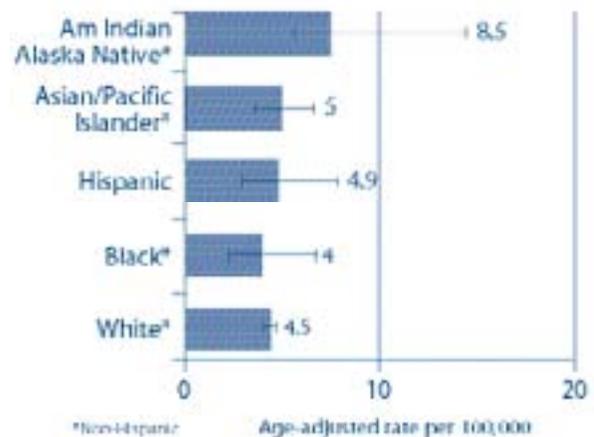
Suffocation Deaths
Age and Gender
Death Certificates, 2004-2006



Race and Ethnicity

In Washington State from 2004-2006, suffocation death rates were highest for American Indians and Alaska Natives, but the difference was not statistically significant.

Suffocation Deaths
Race and Ethnicity
Washington State Death Certificates, 2004-2006



Washington State Child Death Review Data

The Child Death Review (CDR) process is a tool used in local communities to identify circumstances leading to children's deaths; collect and report accurate, uniform information; and improve communication and collaboration around children's safety.

Based on 1999-2001 data from local Washington State Child Death Review teams, infants died from suffocation most often while they were sleeping. Infants suffocated by either being wedged between a bed and a wall or a pillow, or by co-sleeping with another person.

More than nine out of ten infants who died of suffocation while sleeping were co-sleeping with a parent or sibling at the time of their deaths. Adult use of alcohol and/or other drugs was involved in approximately one-third of the suffocation deaths.¹

Risk and Protective Factors

Sudden Infant Death Syndrome (SIDS)

SIDS is the sudden death of an infant, under one year of age, which remains unexplained after a thorough case investigation. This includes a complete autopsy, examination of the death scene, and review of the clinical history.² In the United States, there are over 2,000 SIDS cases a year.³ The infants are most often found in potentially suffocating environments, with their noses and mouths covered by soft bedding. SIDS may be confused with suffocation, even by the medical examiner or coroner who is classifying the death. Studies have shown that since 1999, some deaths previously classified as SIDS are now classified as due to accidental suffocation or unknown/unspecified cause. This finding suggests that changes in reporting of cause of death may account for part of the recent decrease in SIDS rates.⁴

Back to Sleep Campaign

The American Academy of Pediatrics (AAP) and others launched the Back to Sleep Campaign to help inform parents and infant caregivers that the safest position for an infant to sleep is on their back. Since the start of the Back to Sleep Campaign, the percentage of infants placed on their backs has increased dramatically. The rate of SIDS has declined by more than 50% since 1990.⁵

Bed Sharing

The suffocation deaths of infants most commonly occur while sleeping. Infants suffocated by either being wedged between the bed and a wall or pillow, or parental overlay. In Washington from 1999-2001, 91% of the infants who suffocated while sleeping were co-sleeping with a parent or sibling at the time of their death, and 75% of the deaths were due to an overlay by an adult or sibling.¹

Children

Small children have small airways that can be blocked very easily. The majority of childhood choking injuries are associated with food. Children choke on such items as candies, nuts, grapes, or hot dogs. Airway obstruction injuries can also result from entanglement or entrapment.

Children have been strangled on window covering cords. The majorities of deaths involve outer blind cords, and occur when the cord is hanging near the floor, crib, or when furniture is too close to the cord. Children have also died from entanglement of clothing drawstrings, most often hood or neck drawstrings. Entanglement most often occurs when children are playing on playground slides.

Children can strangle in openings big enough for parts of their bodies, but too small for their heads. These include spaces such as cribs, bunk beds, strollers, and high chairs.⁶

Two agencies have passed safety laws and regulations that protect children from airway obstruction. The Child Safety Protection Act bans any toy intended for use by children under age 3 that may pose a choking, aspiration or ingestion hazard. It requires choking-hazard warning levels on packaging for those items intended for use by children age's three to six.

The US Consumer Product Safety Commission has established a voluntary guideline for children's clothing to prevent them from strangling in the neck and waist drawstring of upper outerwear such as jackets and sweatshirts. The commission also issues mandatory standards for bunk beds and cribs to address entrapment hazards. The standard restricts opening sizes, requires guardrails and specifies company identification and age-specific warning labels to be present.⁷

Older Adults

Older adults are also at high risk for asphyxiation through food and non-food items. This is usually a result of under-chewed food, use of sedative drugs, or diseases affecting coordination or mental function.⁸ Swallowing is an important and complex task. Normal aging and diseases that are common in older adults can affect swallowing. Other eating alterations are associated with normal aging. With advanced age, an older adult may have a reduced taste sensation and not a reduced taste preference. For example, an older adult may be able to distinguish sweet from salty, but may need more salt to taste the difference.

Salivary function is also important. Salivary function is not clearly reduced with aging, but the adverse effects of medication often cause older adults to complain about a lack of saliva. When older adults lose their teeth, they are not able to chew as efficiently. In order to achieve the same level of food softening, many older adults may need to chew longer and use more chewing strokes. If older adults don't properly chew their food, they may be at risk of choking.

Recommended Strategies

Promote SIDS reduction strategies

Babies who sleep on their backs have a much lower risk of dying from SIDS or suffocation. Promote SIDS reduction strategies throughout communities. The Back to Sleep Campaign recommends the following strategies:

- Always place your baby on his or her back to sleep, for naps and at night.
- Place your baby on a firm sleep surface, such as on a safety-approved crib mattress, covered by a fitted sheet.
- Keep soft objects, toys, and loose bedding out of a baby's sleep area.
- Do not allow smoking around your baby.
- Keep a baby's sleep area close to, but separate from, where others sleep.
- Think about using a clean, dry pacifier when placing the infant down to sleep, but don't force the baby to take it.
- Do not let your baby overheat during sleep.
- Avoid products that claim to reduce the risk of SIDS.

Promising or Experimental Strategies

Promote federal legislation that supports removal of recalled products that may cause choking and asphyxiation injuries.

Educate families on how to reduce suffocation and choking risks

Education can include learning about:

- Suffocation hazards.
- Recalled products.
- Instructions on how to perform the Heimlich Maneuver.
- How to administer cardiopulmonary resuscitation (CPR) to a child or adult who has stopped breathing.

Promote strategies for older adults

To eliminate or minimize choking risks, encourage older adults to consult health care providers for diet and medication modifications. Encourage or require adult caregivers to learn adult CPR and the Heimlich maneuver.

(For intentional suffocation deaths, see the Suicide Chapter.)

For More Information

Washington State

Harborview Injury Prevention and Research Center. Best Practices: Choking, Aspiration and Suffocation web site:

<http://depts.washington.edu/hiprc/practices/topic/suffocation/index.html>

Washington State Childhood Injury Report web site:

www.doh.wa.gov/hsqa/emstrauma/injury/pubs/wscir/WSCIR_Suffocation.pdf

National

The American Academy of Pediatrics

www.aap.org/healthtopics/Sleep.cfm

American Academy of Pediatrics, Parents Guide to Safe Sleep

www.healthychildcare.org/pdf/SIDSparentsafesleep.pdf

American SIDS Institute

www.sids.org

Manitoba Health. A review of best practices. Preventing suffocation and choking injuries in Manitoba, Canada

www.gov.mb.ca/healthyliving/docs/injuries_suffocation.pdf

National Institute Child Health Development

www.nichd.nih.gov/news/releases/infant_sids.cfm, and

www.nichd.nih.gov/news/releases/sidsRisk.cfm.

Safe Kids Worldwide

www.usa.safekids.org/content_documents/AOI_facts.pdf

Safe Infant Bedding Practices

www.firstcandle.org/expectantparents/exp_safeinfant.html

State Medical Society of Wisconsin

www.medem.com/search/article_display.cfm?path=n:&mstr=/ZZZDYWB1JJC.html&soc=SMS%20of%20WI&srch_typ=NAV_SERCH

U.S. Consumer Product Safety Commission. Recalls and Product Safety Alerts

www.cpsc.gov/cpsc/pub/prerel/prerel.html

Endnotes

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- ² Willinger M., James L.S., & Catz C. (1991). Defining the sudden infant death syndrome (SIDS): deliberations of an expert panel convened by the National Institute of Child Health and Human Development. *Pediatric Pathology*, 11(5), 677-84.
- ³ National Institutes of Health. National SIDS/Infant Death Research Center. Retrieved June 21, 2007 from www.sidscenter.org/Statistics.aspx?fromparent=parent&id=6&heading=Statistics.
- ⁴ Centers for Disease Control and Prevention, Sudden unexplained infant death initiative. Retrieved April 10, 2008 from www.cdc.gov/SIDS/SUID.htm.
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SUICIDE

DESCRIPTION:

Suicide means the intentional killing of one's self. Attempted suicide means trying to kill one's self without completing the act of suicide. Data reflects actual deaths and hospitalizations due to suicide and attempted suicide.



Washington State Goal Statement

To decrease deaths and hospitalizations due to suicide and suicide attempts

National Healthy People 2010 Objectives

- Reduce the suicide rate from 11.3 in 1998 to no more than 5.0 per 100,000 in 2010
- Reduce the rate of suicide attempts by adolescents in grades 9-12 from 2.6 in 1999 to no more than 1.0 in 2010

Statement of the Problem in Washington State

In 2006, 796 Washington State residents committed suicide or died from self-inflicted injury. Suicide is the eighth leading cause of death for all residents and the second leading cause among youth ages 15-24.

In 2006 in Washington State, the leading suicide methods were firearms (49%), poisoning (22%), and suffocation (19%).

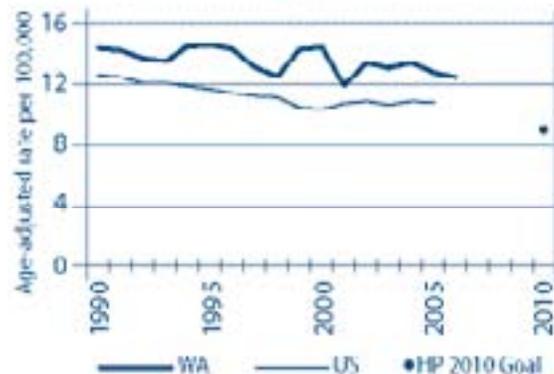
Washington State Data

Between 1980 and 2006, Washington State's age-adjusted suicide rate declined slightly from 14 per 100,000 to 12 per 100,000.

In 2005, the U.S. age-adjusted suicide rate was 11 per 100,000. Washington State's rate in the same year was 13 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

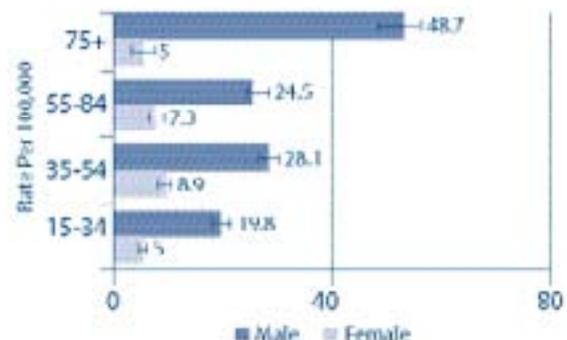
Washington State & United States Death Certificates, 1990-2006



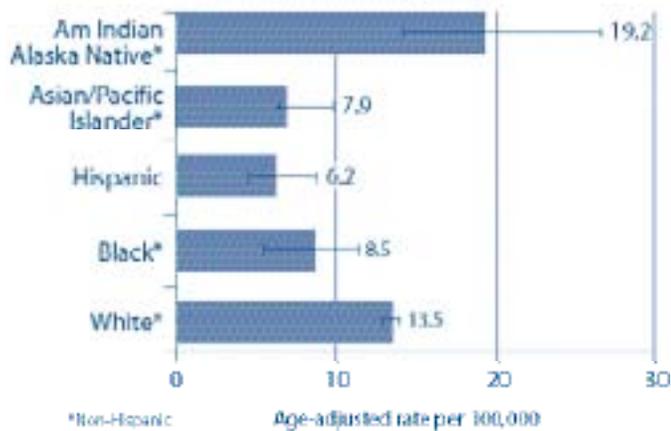
Age and Gender

From 2004-2006, men in Washington State accounted for 78% of completed suicides. Men ages 75 and older had the highest suicide rates. Although elderly men's rates are the highest, men ages 35-54 have the highest number of suicides. Residents younger than 15 had fewer than 20 deaths. The chart does not include them.

Suicide
Age and Gender
Death Certificates, 2004-2006



Suicide
Race and Hispanic Origin
Death Certificates, 2004-2006



Race and Ethnicity

In 2004-2006, 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 2006, there were 3,526 hospitalizations in Washington for nonfatal suicide attempts, for a rate of 55 per 100,000. Women had a higher rate of hospitalized suicide attempts at 65 per 100,000 than did men, 45 per 100,000. The number of patients treated but not hospitalized is much higher. Nationally, the 2006 rate for nonfatal suicide attempts treated in a hospital emergency room was 133 per 100,000.² This rate is 12 times higher than the national rate for completed suicides.

In the 2006 Healthy Youth Survey, 15% of Washington State 10th graders reported they had considered attempting suicide in the past year and 12% reported having a plan for their suicide attempts.

Economic Cost

Family members of those who have killed themselves experience significant emotional pain. Those who have attempted suicide experience both emotional and physical pain. These cannot be quantified. But financial costs can be measured.

The estimated total economic burden of suicide in the United States in 1995 was \$111 billion. This figure includes medical expenses of \$4 billion, work-related losses of \$27 billion, and quality of life costs of \$80 billion.³ These figures might underestimate the true costs because suicide deaths are not always reported.

Depression Data

Depression contributes to suicide. In 2006, about 30% of 10th graders (about 28,000 youth) reported that at some point in the past year they had been so sad or hopeless almost every day for two weeks or more in a row that they stopped doing their usual activities. About 16% of 10th graders – or around 15,000 youth – reported having no adults to turn to when they were depressed. About 43% of these youth reported it would be very unlikely for them to seek help if they were feeling depressed or suicidal. This translates to about 6,400 youth who would not seek help for themselves.

In a 2006 survey of Washington adults, about 16% of adults ages 18 and over – or around 750,000 adults – reported mild depression. Almost 7%, about 318,000 adults, reported either moderate or severe depression.

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 National Strategy for Suicide Prevention.⁴ Risks associated with suicide and suicidal behaviors include:

- Previous suicide attempt(s).
- History of mental disorders, particularly depression.
- History of alcohol and substance abuse.
- Family history of suicide.
- History of child maltreatment.
- Feelings of hopelessness.
- Impulsive or aggressive tendencies.
- Barriers to accessing mental health treatment.
- Personal losses (relational, social, work, or financial).
- Physical illness.
- Easy access to lethal methods.
- Unwillingness to seek help because of the stigma attached to mental health and substance abuse disorders or suicidal thoughts.
- Cultural and religious beliefs – for instance, the belief that suicide is a noble resolution of a personal dilemma.
- Local epidemics of suicide.
- Feeling cut off from other people.

Protective factors include:

- Effective clinical care for mental, physical, and substance abuse disorders.
- Easy access to a variety of clinical interventions, including mental health services, and support for help seeking.

- Family and community support.
- Support from ongoing medical and mental health care 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 Call to Action To Prevent Suicide*⁵ says the most promising way to prevent suicide and

suicidal behavior is a multifaceted approach. This would include prevention, early recognition and treatment of depression and other psychiatric illnesses, and other strategies, including limiting access to lethal means. Both the *National Strategy for Suicide Prevention*⁴ and the Institute of Medicine's (IOM) report, *Reducing Suicide: A National Imperative*⁶ were developed in response to the *Call to Action*. These documents recommend strategies to increase awareness, improve intervention, and new research to reduce suicide.

Recommended Strategies

Evidence-Based Strategies

Treat and care for depressed older adults

Primary care providers can use PROSPECT^{7,8} which provides guidelines for treatment and care management for community-dwelling adults ages 60 and older who have been diagnosed with depression.

Reduce future risk among suicide attempters in emergency rooms

For health care providers working in an emergency room setting, evidence-based programs include lethal means restriction education for parents of youth who are seen in emergency rooms for mental health assessment or treatment⁹ and an intervention for female adolescent suicide attempters and their mothers.¹⁰

Train gatekeepers who work with youth

School personnel and other adults who work with youth should receive training to recognize the warning signs, and to intervene. Counselors Care and Coping and Support Training (C-care/Cast)^{11,12} is recognized as an effective school-based intervention to decrease suicide risk factors and increase protective factors.

Promising or Experimental Strategies

Raise awareness that suicide is a preventable

Work with local media to increase public awareness by developing and disseminating public service announcements.

Establish local coalitions to promote suicide prevention and to maximize the effectiveness of key public service announcement messages in communities.

Use information technology to expand public and professional awareness of the facts behind suicide and suicide prevention. Use existing web sites,

host webinars, and use other means to share information widely.

Health care providers can play an important role in the early identification and treatment of people who are suicidal. Health care providers need to be aware of community resources for treating substance abuse, depression, and other mental illness.

Promote education and training

Provide training to recognize both at-risk behavior and effective treatment. Conduct suicide prevention educational presentations for anyone who either works with or knows people at risk of suicide. Also include those who work with specific populations at risk.

Presentations are designed to:

- Enhance awareness about suicide.
- Teach the warning signs of suicidal thinking and behavior (www.yspp.org/warningSigns/warningSigns.htm).
- Teach three basic intervention skills (www.yspp.org/warningSigns/whatToDo.htm) – show you care, ask the question, and get help – that can prevent a suicidal death.

Provide enhanced training for gatekeepers. This includes, for example, people who work with or lead activities with people in specific target populations. This training would cover the warning signs and how to respond. In Washington State, gatekeepers can include:

- Teachers.
- Counselors, psychologists and counselors.
- Nurses and other health care professionals.
- Law enforcement and first responders.
- Social workers.
- Clergy.
- Recreation workers.

Promote access to mental health care
For suicidal people, promote changes in the mental health system that lead to better access to care.

This includes:

- Making payment changes to support mental health care.
- Increasing the number of public and private mental health care providers who can assess and treat suicidal behavior.
- Increasing the number of practitioners who have priority openings in their practices for people in a suicidal crisis.

Establish relationships with local and statewide substance abuse prevention and provider leaders.
Develop memorandums of agreement to coordinate care and follow-up needs with emergency departments.

Reduce access to lethal means of committing suicide

Train health care and mental health care providers when working with a suicidal patient or client to screen for access to lethal means.

Promote the LOK-IT-UP Campaign, which describes the safe storage or removal of firearms in the home. This is

especially important when someone is depressed or suicidal.

Encourage packaging and distribution of prescription and non-prescription drugs in limited dosages.
Help promote a coordinated method for tracking prescription medication being dispensed across the state.

Gain broad support for suicide prevention, and enhance and support surveillance systems
Integrate suicide prevention activities into ongoing programs and activities. In Washington, establish a statewide coalition to implement the National Strategy for Suicide Prevention. Include private and public sectors, and ensure strong suicide survivor representation.

Improve and expand surveillance systems for suicide and suicidal behaviors throughout Washington State by:

- Supporting Child Death Review Teams.
- Establishing emergency department suicide attempt reporting.
- Establishing consistent coroner and medical examiner reporting requirements.

For More Information

Washington State

Washington State Healthy Youth Survey Website:
www3.doh.wa.gov/HYS/

The Washington State Department of Health, Health of Washington State

www.doh.wa.gov/HWS

Washington State Youth Suicide Prevention Program Website:

www.yspp.org

National

American Academy of Child and Adolescent Psychiatry, Go to Facts for Families, Teen Suicide, (Fact Sheet #10)

www.aacap.org

American Academy of Pediatrics, Some Things You Should Know About Preventing Teen Suicide

www.aap.org/advocacy/childhealthmonth/prevteensuicide.htm

Centers for Disease Control

www.cdc.gov/ncipc/factsheets/suicide-prevention.htm and
www.cdc.gov/ncipc/dvp/Preventing_Suicide.pdf

Kids Health, Understanding and Preventing Teen Suicide
www.kidshealth.org/parent/emotions/behavior/suicide.html

Knox, K. L., Doll, L.S., Bonzo, S. Mercy, J., & Sleet, D. (2006). Interventions for Suicide, Handbook of Injury and Violence Prevention, Springer, New Jersey

National Adolescent Health Information Center
<http://nahic.ucsf.edu/downloads/suicide.pdf>

National Institute of Mental Health
www.nimh.nih.gov/suicideprevention/suifact.cfm

National Mental Health Association
www.mentalhealth.org/suicideprevention/concerned.asp

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

National Strategy for Suicide Prevention
www.mentalhealth.samhsa.gov/suicideprevention/strategy.asp

Suicide Prevention Resource Center
www.sprc.org

Endnotes

- ¹ Division of Violence Prevention, Centers for Disease Control and Prevention. (August 1997). Regional Variations in Suicide Rates – United States, 1990-1994. *Mortality and Morbidity Weekly Report*, 46(34), 789-793.
- ² Centers for Disease Control and Prevention, National Centers for Injury Prevention and Control. (2008). Web-based injury statistics query and reporting system (WISQRAS). Retrieved February, 2008 from www.cdc.gov/ncipc/wisqars.
- ³ Miller, T., Covington, K. & Jensen, A. (1999). Costs of injury by major cause, United States, 1995: Cobbling together estimates in measuring the burden of injuries. In S. Mulder & E.F. van Beeck (Eds.), *Proceedings of a conference in Noordwijkerhout*, May 13-15, 1998 (pp. 23-40). Amsterdam: European Consumer Safety Association.
- ⁴ National Strategy for suicide prevention: Goals and objectives for action. (2001). Rockville, MD: United States Department of Health and Human Services, Public Health Service. Retrieved on January 15, 2007 from <http://mentalhealth.samhsa.gov/suicideprevention/strategy.asp>.
- ⁵ United States Public Health Service. (1999). *Surgeon General's Call to Action to Prevent Suicide*. Washington, DC.
- ⁶ Institute of Medicine of the National Academies. (2002). *Reducing Suicide: A National Imperative*. Washington, DC.
- ⁷ Schulberg, H. C., Bryce, C., Chism, K., Mulsant, B. H., Rollman, B., Bruce, M. & et al. (2001). Managing late-life depression in primary care practice: A case study of the Health Specialist's role. *International Journal of Geriatric Psychiatry*, 16, 577-584.
- ⁸ Mulsant, B. H., Alexopoulos, G. S., Reynolds, C. F. III, Katz, I. R., Abrams, R., Oslin, D. & et al. (2001). Pharmacological treatment of depression in older primary care patients: The PROSPECT algorithm. *International Journal of Geriatric Psychiatry*, 16, 585-592.
- ⁹ Kruesi, M. J. P., Grossman, J., Pennington, J. M., Woodward, P. J., Duda, D. & Hirsch, J. G. (1999). Suicide and violence prevention: Parent education in emergency department. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38(3), 250-255.
- ¹⁰ Rotheram-Borus, M. J., Piacentini, J., Cantwell, C. Beline, T. R. & Sone, J. (2000). The 18-month impact of an emergency room intervention for adolescent female suicide attempters. *Journal of Counseling and Clinical Psychology*, 68(6), 1081-1093.
- ¹¹ Eggert, L. L., Thompson, E. A. & Herting, J. R. (1994). A measure of adolescent potential for suicide (MAPS): Development and preliminary findings. *Suicide and Life-Threatening Behavior*, 24, 359-381.
- ¹² Thompson, E. A., Eggert, L. L., Randell, B. P. & Pike, K. C. (2001). Evaluation of indicated suicide risk prevention approaches for potential high school dropouts. *American Journal of Public Health*, 91(5), 742-752.

VIOLENCE AGAINST WOMEN

DESCRIPTION:

Any act of gender-based violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion, or arbitrary deprivation of liberty, whether occurring in public or in private life.¹

This section is a priority area for the Washington State Department of Health.



Washington State Goal Statement

To decrease deaths and hospitalizations due to violence against women

National Healthy People 2010 Objectives

- For people age 12 or older, reduce the rate of physical assault by current or former intimate partners² from 4.4 in 1998 to 3.3 per 1,000
- For people age 12 or older, reduce the annual rate of rapes or attempted rapes from 0.8 in 1998 to 0.7 per 1,000
- For people age 12 or older, reduce sexual assault other than rape from 0.6 in 1998 to 0.4 per 1,000
- For people age 12 or older, reduce physical assaults from 31.1 in 1998 to 13.6 per 1,000

Statement of the Problem in Washington State

Violence against women is a broad term. It includes intimate partner violence, sexual violence by anyone, and other forms of violence against women, such as stalking and assault by acquaintances or strangers.

Violence has categories:

- Physical violence.
- Sexual violence.
- Threat of physical or sexual violence.
- Psychological/emotional abuse, including coercion tactics, when there has also been prior physical or sexual violence, or prior threat of physical or sexual violence.³

Domestic Violence Fatalities

The Washington Association of Sheriffs and Police Chiefs (WASPC) gather crime data from across the state. Most law enforcement agencies report this data. According to the Crime in Washington State 2005 report published by WASPC, 50% of women murdered in Washington State were killed by a current or former husband or boyfriend.

Washington State has a domestic fatality review process that is administered by the Washington State Coalition Against Domestic Violence. Domestic violence fatalities include more than an abused current or former partner killed by the abuser. These cases also include family and friends or responding law enforcement officers killed in connection with domestic violence. They also include children killed by the abuser, and the suicides of abusers.

In Washington State between July 2004 and June 2006, 113 people died from a domestic violence-related incident. This includes 83 homicide victims, 26 abuser suicides, and four cases in which abusers were killed by law enforcement officers while threatening lethal force against the officers or a victim.

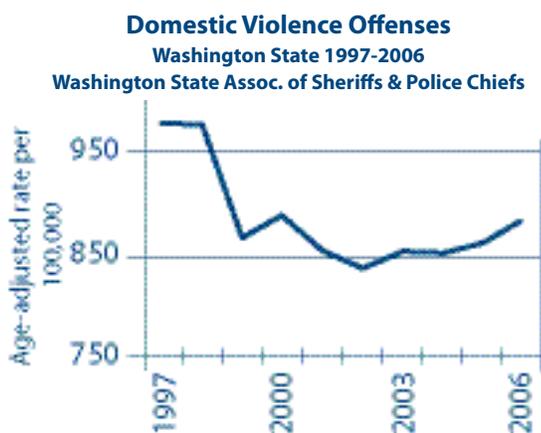
Associated Health Risks

Violence against women and girls is a widespread cause of injury and death in females. Sustained sexual assault or domestic violence and physical, sexual, and psychological abuse result in severe injuries.

Domestic violence and sexual assault are associated with increased rates of alcohol and substance abuse, sexually transmitted diseases, depression, and suicide attempts – areas of health that have stigma attached to them. For these reasons, victims of violence are more likely to appear in health care settings for conditions that seem unrelated to their history of abuse. These include complaints of pain, insomnia, gastrointestinal problems, and irritability.⁴

Women frequently do not get help for their injuries. Many providers discharge them after treating only the presenting injuries, leaving the underlying cause of those injuries unaddressed. A critical gap remains in the consistent and preventive delivery of health care to women experiencing violence. There are limited effective interventions to reduce and prevent violence against women by health care professionals.⁵

Intimate Partner Violence and Domestic Violence
According to the Centers for Disease Control's *Injury Fact Book 2001-2002*, "intimate partner violence is actual or threatened physical or sexual violence or psychological and emotional abuse directed toward a spouse, ex-spouse, current or former boyfriend or girl-friend, or current or former dating partner. Intimate partners may be heterosexual or of the same sex."



Over the last ten years, some data suggest that both domestic violence and sexual assault rates have been declining. Both the Uniform Crime Report and the National Crime Victim Survey show this decline. Progress is being made and supports the need to stay engaged in preventing violence against women. Changes in awareness and reporting rather than a reduction in actual events might be creating this downward trend.

In Washington, data includes domestic violence-related offenses reported to a police or sheriff's department involving a domestic relationship, regardless of whether an arrest takes place.

Between 1997 and 2001, reports of domestic violence-related offenses dropped. They did not change between 2001 and 2005, and then there was a drop between 2005 and 2006. Changes in awareness and reporting may be behind the downward trend. According to the National Federal Bureau of Investigation's (FBI) homicide data, for homicides where the relationship is known, intimate partners account for 33% of female homicides and 3% of male homicides. 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.

Washington State's well-developed network of programs and services for domestic violence victims provides advocacy, support, and shelter. Much has been done to support victims, but the efforts do not yet meet demand. In 2004, according to the Washington State Department of Social and Health Services, more than 30,000 people, primarily women and children were turned away from domestic violence shelters. More needs to be done to prevent domestic violence and to develop effective strategies to intervene with the perpetrators.

Stalking

Stalking is repeated harassing or threatening behavior, such as following a person, making harassing phone calls, or vandalizing a person's property. In the United States, an estimated 8% of women have been stalked sometime in their lives. Four out of five stalking victims are women. An intimate partner stalks two out of five of these women.⁶

Sexual Violence

Sexual violence is any type of sexual activity committed by one person without the consent of the other. Sexual violence involves the use of threats, force, or violence, or any other form of coercion or intimidation. 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 incapable, too young, impaired, or otherwise incapable of consent.

For 2005, according to the WASPC's Uniform Crime Reporting Statistics, there were 2,772 reports of forcible rapes. Based on data from the National Crime Victimization Survey and the National Violence Against Women Survey, about one in six women in Washington State will suffer forcible rape in her lifetime.⁷ In 2001 about 38% of women 18 and older reported being sexually assaulted at least once in their lifetime.⁸

In 1997, Washington State received a federal grant to fund prevention programs targeting sexual violence. An advisory committee was formed to direct the resources most effectively. Through a series of meetings and discussions, the committee developed an innovative approach to advancing sexual violence prevention.

The committee set a state goal to impact the underlying causes of sexual violence through the shifting of ownership of solutions from social services to the community using a community development approach.⁹

This plan continues to offer guidance for those individuals, agencies, and communities receiving funding specifically targeted toward rape prevention

efforts. In 2007-2008, the Sexual Violence Prevention Plan is scheduled for review and updating to reflect new knowledge and experiences in the field of sexual violence prevention and intervention.

Preventing Violence Against Women

Violence against women requires a broad public health approach with comprehensive prevention strategies and a coordinated response from multiple sectors. No single activity or strategy is shown to be effective in the prevention of violence against women. Literature demonstrates regularly that multi-faceted and long-term strategies must be implemented. Additionally and in support of prevention, better data collection systems are needed to accurately assess the problem and to develop effective strategies.

In every approach, there is a need to address potential barriers of access by victims to various systems and services (i.e., health care, legal interventions, culturally relevant human services, and safe childcare). Types of barriers include limited language and translation capabilities, appropriately trained service delivery for disabled persons, and inconsistent responses to violence against women across disciplines.

Recommended Strategies

To measure the scope of violence against women, enhance data collection systems that will support routine, culturally appropriate and relevant local and statewide data systems. Share results with partners and key stakeholders regularly. Data that can help measure the magnitude of violence against women is lacking. There are many reasons for this, but some of the common issues include:

- A lack of a universal definition of violence against women.
- Social and cultural norms determining what constitutes violence or actually contributing to a violent culture.
- The manner used to collect the data (such as written or telephone surveys or technology-based questionnaires) is not culturally appropriate or sensitive to the needs of victims and survivors.
- Questions being asked in a way that does not solicit the information desired.
- A lack of funding to support a well-defined data collection system.

Because of the lack of consistent information about women affected by violence, there is a limited ability to measure the effectiveness of responses to the problem. At this time, it is difficult to:

- Gauge the magnitude of violence against women in relation to other public health problems.
- Identify those groups at highest risk who might benefit from focused intervention or increased services.
- Monitor changes in the incidence and prevalence of violence against women over time.

An effective and adequate data collection system will support policymakers, researchers, public health practitioners, advocates, service providers, and media professionals by providing more timely and accurate estimates of the incidence and prevalence of violence against women.

Promising or Experimental Strategies

Review, promote and use promising strategies and programs for the prevention of violence against women.

Evaluate local and statewide strategies. Use existing violence against women networks, committees and task forces to help identify and evaluate promising interventions. Share results with community partners and stakeholders.

Use community development strategies, such as that described by William Lofquist in “The Technology of Prevention”. This model promotes communities as resources and partners that can change community norms that foster unwanted problem behaviors (i.e., substance abuse, sexual violence).

When incorporating the use of a school-based violence prevention curriculum into a comprehensive strategy, use those that are multi-faceted and shown to be effective. One such curriculum targeted to middle and high school ages is “Safe Dates” developed by Dr. Angie Foshee. Again, this should not be a stand-alone approach to the prevention of violence against women.

Support the development of programs for children who have witnessed abuse or who are in a household where abuse has taken place. This would include building access to affordable, quality counseling. Train mental health care providers to help them better understand and mitigate the impact of violence on children.

Reduce barriers for victims of violence with limited English proficiency through outreach, spoken and written translation, and services that are relevant for various cultures. This will make it easier for victims and their families to get help from the health, criminal justice, civil justice, and social service systems.

Build local relationships and coalitions that include victims, survivors, community or system-based advocates, and people working in allied fields such as drug and alcohol prevention. This helps break down barriers, strengthens communication across systems and builds community capacity.

Support training for law enforcement personnel and prosecutors to promote aggressive prosecution of perpetrators of violence against women. Deterring violence against women depends on strong laws with consistent enforcement and prosecution.

Implementation Plan for Preventing Violence Against Women

The four priority areas have a DOH Implementation Plan.

These specific plans provide an outline of DOH's Injury and Violence Prevention efforts through 2010.

Objectives	Activity	Start Date	End Date	Responsible Parties
Infrastructure – Enhancing Data Collection	Recruit and convene a data advisory group	September 2008	March 2009	<ul style="list-style-type: none"> • Department of Health • Washington Association of Sheriffs and Police Chiefs • Office of Crime Victims Advocacy • Department of Social & Health Services
Infrastructure – Supporting Culturally Appropriate Data Collection	Recommendations from Advisory Group are reviewed, revised and adopted by key stakeholders	January 2009	June 2009	<ul style="list-style-type: none"> • Department of Health • Washington Association of Sheriffs and Police Chiefs • Office of Crime Victims Advocacy • Department of Social & Health Services • Washington Coalition of Sexual Assault Programs • Washington State Coalition Against Domestic Violence
	Data Collection Systems are revised; Training of community partners takes place if needed	July 2009	December 2010	<ul style="list-style-type: none"> • Department of Health • Washington Association of Sheriffs and Police Chiefs • Office of Crime Victims Advocacy • Department of Social & Health Services
State Agency – Evaluation and Promotion of Best Practices	<ul style="list-style-type: none"> • State agencies identify and promote best practices to grantees • State agencies evaluate current practices to determine effectiveness • State agencies adjust strategy promotion as new literature identifies additional best practices 	July 2008	Ongoing	<ul style="list-style-type: none"> • Department of Health • Office of Crime Victims Advocacy • Department of Social & Health Services

For More Information

Washington State

Findings and Recommendations from the Washington State Domestic Violence Fatality Review, prepared by the Washington State Coalition Against Domestic Violence, December, 2002, www.wscadv.org and www.wscadv.org/projects/FR/index.htm#FRReports

Sexual Assault Experiences and Perceptions of Community Response to Sexual Assault: A Survey of Washington State Women, supported by the Office of Crime Victims Advocacy, Washington State Office of Community Development, November, 2001 www.cted.wa.gov/site/673/DesktopDefault.aspx?tabid=673

Washington State Coalition Against Domestic Violence
www.wscadv.org

Washington State Coalition of Sexual Assault Programs
www.wcsap.org, and *Understanding Sexual Violence Using the Public Health Model, Research & Advocacy Digest: Linking Advocates & Researchers*, Volume 5, (January 2, 2003) www.wcsap.org/pdf/RAD5-2.pdf

The Washington State Department of Health. Health of Washington State, Domestic Violence Chapter
www.doh.wa.gov/HWS

Washington State Domestic Violence Hotline: 1-800-562-6025

Web site for Health Care Providers

www.doh.wa.gov/vaw

Washington State Office of Crime Victims Advocacy

www.ocva.wa.gov

National

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention.

Home page

www.cdc.gov/ncipc/dvp/dvp.htm

Intimate partner violence fact sheet

www.cdc.gov/ncipc/dvp/dvp.htm

Rape Prevention and Education Grant Program: Preventing Sexual Violence in the United States, 2004

www.eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=ED486260&ERICExtSearch_SearchType_0=eric_accno&accno=ED486260

Sexual Violence Prevention: Beginning the Dialogue. (2004)

www.cdc.gov/ncipc/dvp/SVPrevention.pdf

Center for Health and Gender Equity. (December 1999). **SPECIAL GUIDE: What Health Care Providers Can Do About Domestic Violence. Population Reports, Ending Violence Against Women, Series L, No. 11**

www.infoforhealth.org/pr/11/111pullout.shtml

Center for Policy Research (P. Tjaden & N. Thoennes), **Stalking in America: Findings From the National Violence Against Women Survey, (April 1998)**

www.ncjrs.gov/pdffiles/169592.pdf

Family Violence Prevention Fund **The Facts on Health Care and Domestic Violence**

www.endabuse.org

www.endabuse.org/resources/facts/HealthCare.pdf, www.who.int/mediacentre/factsheets/fs239/en/

www.fvpf.org/health

Michigan Coalition Against Domestic and Sexual Violence, **A Vision for Prevention: Key Issues and Statewide Recommendations for Primary Prevention of Violence Against Women in Michigan**

www.mcadsv.org/

National Advisory Council on Violence Against Women and the Violence Against Women Office, *Chapter 2: Improving the Health and Mental Health Care Systems' Responses to Violence Against Women, Toolkit to End Violence Against Women*

<http://toolkit.ncjrs.org/>

National Domestic Violence Hotline: 1-800-799-7233

www.ndvh.org/educate/what_is_dv.html

National Network to End Domestic Violence

www.nnedv.org

National Sexual Violence Resource Center

www.nsvrc.org

National Online Resource Center on Violence Against Women

www.vawnet.org

and D. A. Wolfe & P. G. Jaffe, (January, 2003). *Prevention of Sexual Assault and Domestic Violence.*

www.vawnet.org/DomesticViolence/Research/VAWnetDocs/AR_Prevention.pdf

National Violence Against Women Resource Research Center

www.musc.edu/vawprevention

And Violence Against Women Prevention Programming: Report of What Is in Use

www.vawprevention.org

Rape, Abuse and Incest National Network – National Sexual

Violence Hotline: 1-800-656-HOPE.

Safe Dates

http://nrepp.samhsa.gov/programfulldetails.asp?PROGRAM_ID=84

The World Health Organization, **Violence against Women fact sheet**

www.who.int/mediacentre/factsheets/fs239/en/

Voices and Faces – a national sexual violence survivor network.

www.voicesandfaces.org

Endnotes

- ¹ United Nations General Assembly, (1993). Declaration on the Elimination of Violence against Women.
- ² Intimate partner(s): Refers to spouses, ex-spouses, boyfriends, girlfriends, and former boyfriends and girlfriends (includes same-sex partners). Intimate partners may or may not be cohabitating and need not be engaging in sexual activities.
- ³ U.S. Department of Health & Human Services, Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, (1999). Intimate Partner Violence Surveillance, Uniform Definitions and Recommended Data Elements, Atlanta: Georgia.
- ⁴ World Health Organization. (2002). World Report on Violence and Health, Geneva: Switzerland.
- ⁵ National Consensus Guidelines on Identifying and Responding to Domestic Violence Victimization in Health Care Settings. (2004). Family Violence Prevention Fund, San Francisco: California.
- ⁶ Tjaden, P. & Thoennes, N. (1998). Stalking in America: Findings from the National Violence Against Women Survey, National Institute of Justice & Centers for Disease Control; Washington D.C. and Atlanta, Georgia.
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YOUTH VIOLENCE

DESCRIPTION:

All death and hospitalizations due to injuries inflicted by another person with the intent to injure or kill by any means among youth ages 10-24.



Washington State Goal Statement

To decrease deaths and hospitalizations due to youth violence

National Healthy People 2010 Objectives

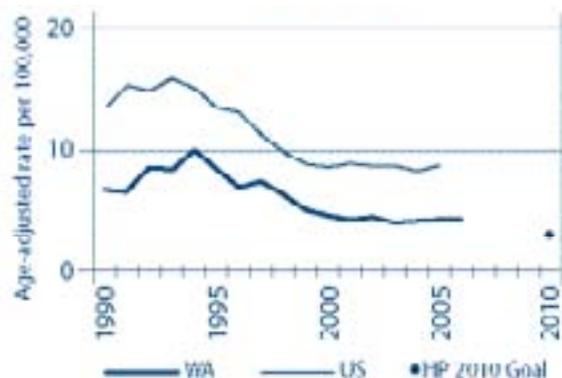
- Reduce physical fighting among adolescents in grades 9 through 12 in the past 12 months from 36% in 1999 to 32% by 2010
- Reduce weapon carrying on school property during the past 30 days among adolescents in grades 9 through 12 from 6.9% in 1999 to 4.9% by 2010

Statement of the Problem in Washington State

Washington State Data

Homicide rates among 10- to 24-year-olds are lower in Washington State than they are nationally. In 2005, the national homicide rate among 10- to 24-year-olds was 8 per 100,000 and 4 per 100,000 in Washington. Homicide rates among 10- to 24-year-olds declined from 1995 to 2000 and have remained stable since 2000. Federal

Homicides Among Youth Ages 10-24
Washington State & United States Death Certificates, 1990-2006



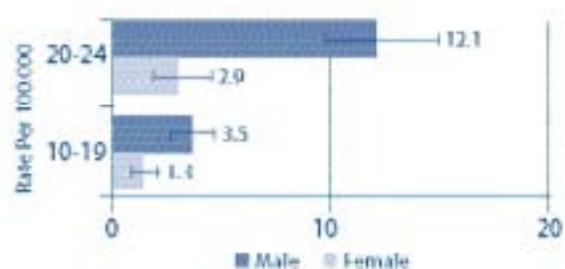
and local gun control efforts, changes in drug markets, and economic shifts from high unemployment to the stronger economy of the late 1990's may explain these declines.¹

Age and Gender

From 2004-2006 among youth ages 10-24, 79% of the state's residents who died from homicide were male. Males 20-24 years old had the highest homicide rate.

Homicides Among Youth Ages 10-24

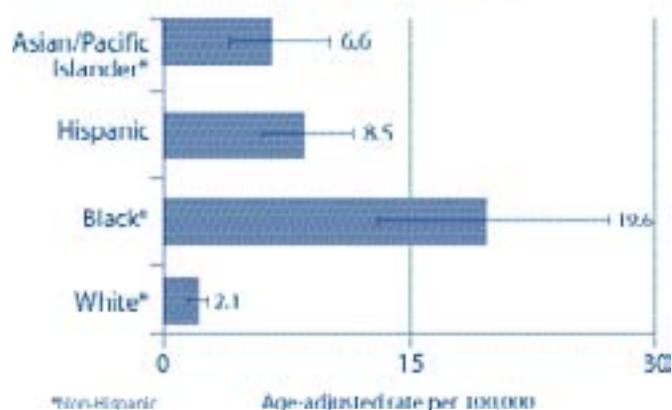
Age and Gender
Death Certificates, 2004-2006



Race and Ethnicity

From 2004-2006, homicide rates among 10- to 24-year-olds were highest for Blacks, followed by Hispanics, and Asian and Pacific Islanders. American Indians and Alaska Natives had fewer than 20 homicides. The chart does not include this group. Individual and neighborhood race and social and economic characteristics are important determinants of homicide rates.² Additionally, several studies have shown that the higher homicide rate among Blacks either disappears or is reduced after adjusting for social and economic factors.^{3,4}

Homicides Among Youth Ages 10-24
Race and Hispanic Origin
Death Certificates, 2004-2006



Healthy Youth Survey Data

Weapon carrying

In the 2006 Washington State Healthy Youth Survey, 6% of 8th grade students (about 5,400 students), 9% of 10th grade students (about 8,400 students), and 9% of 12th grade students (about 8,100 students) reported carrying a weapon on school property in the past 30 days. There was an increase in reported weapon carrying on school property among 10th graders from 2004.

Gang membership

In the 2006 Washington State Healthy Youth Survey, 9% of 8th graders (about 8,100 students), 10% of 10th graders (about 9,300 students), and 7% of 12th graders (about 6,300 students) reported being a member of a gang in the past 12 months. An increased number of 10th and 12th graders reported being a member or a gang in the past year compared to 2004.

Bullying

In the 2006 Washington State Healthy Youth Survey, 32% of 6th grade students, 28% of 8th grade students, 23% of 10th grade students, and 16% of 12th grade students reported being bullied in the last month. This is consistent with results from 2002 and 2004.

Among 10th graders in 2006, about 15% were bullied or harassed or intimidated in the past 30 days because of their race, ethnicity or national origin; about 14% because of their religion; about 21% because of gender; about 13% because of perceived sexual orientation; and about 10% because of a disability. About 12% 10th graders reported being bullied in the past 30 days via a computer or cell phone.

Based on the Healthy Youth Survey data, Washington youth who are bullied are at increased risk for using drugs and alcohol, being depressed, being suicidal,

engaging in violent or unsafe behaviors, and having a lower quality of life.

The majority of youth who are bullied report psychological consequences including a drop in grades, increased anxiety, and loss of friends or social life.⁶ The bullies themselves are also at risk of depression, and have lower academic achievement.⁶

Physical fighting on school property

In the 2006 Washington State Healthy Youth Survey, fighting on school property decreased with increasing grade level: 16% of 8th grade students (about 14,500 students), 12% of 10th grade students (about 11,200 students), and 6% of 12th grade students (about 5,500 students) reported having had this experience.

Conflict resolution

The 2004 Healthy Youth Survey data show that as grade levels increased, resolving conflicts by talking about them increased. About 44% of 8th grade students, 51% of 10th grade students, and 63% of 12th grade students reported often resolving conflicts by talking about them.

Perpetrator Data

Most homicides are committed by someone known to the victim.¹ In Washington, 76% of children were killed by someone they knew.⁷ In the majority of cases, the perpetrator is a family member, friend, or acquaintance. Based on homicide arrest statistics, homicide perpetrators as a group are similar to homicide victims with respect to age, gender, race, and ethnicity. An intimate partner, current or former spouse, or boyfriend commits one-third of female homicides.⁸

Quality of Life

Youth violent crime can seriously affect the quality of life for victims and their families. In addition, people living in communities with high crime rates often suffer from fear, anxiety, and a loss of freedom as people restrict their activities to avoid becoming victims of violence. Society also pays for violence through expenditures for police and criminal justice interventions, social services, and preventive educational activities. Exposure to community violence can be traumatic for children, and children exposed to community violence might be at risk for depression, interpersonal problems, or academic difficulty. However, exposure to community violence is associated with other risk factors such as poverty, so the causal relationships are not known.⁹

Youth who show high levels of aggression throughout childhood and adolescence are themselves at higher risk for a variety of outcomes that affect the quality of life including low educational attainment, persistent unemployment, poor physical health, alcohol and drug abuse, unintentional injury, depression, suicide attempts, relationship conflict, spouse abuse, and neglectful and abusive parenting as adults.^{10, 11}

They also are at increased risk of being killed or permanently maimed.¹²

Violence Prevention

Identifying and understanding risk and protective factors related to youth violence is a cornerstone of effective prevention. A risk factor increases the probability that a person will engage in violent behavior, and a protective factor decreases the negative impact of risk factors. Risk and protective factors that predict youth violence are developmentally specific. Interventions must take into account that different risk and protective factors are especially relevant at different ages. Risk and protective factors are typically grouped across five domains:

- Individual
- Family
- Peers
- School
- Community

There are complex relationships among the risk factors both within and across domains. As children develop, the relative importance of risk factors and domains changes. Studies have shown that risk factors have additive effects. As a youth's exposure to risk factors increases, the impact of risk factors dramatically increases. For example, if a youth is exposed to six or more risk factors at age 10, the likelihood of that youth becoming violent by age 18 is 10 times greater than if the youth is exposed to only one risk factor.¹³ Many of the known risk factors might not be causal but perhaps function as markers of groups at high risk for violent behavior.

Risk Factors for Youth Violence¹⁴

Individual factors

- Chronic physical aggression
- Hyperactivity
- Concentration problems
- Restlessness
- Early initiation of violent behavior
- Involvement in other forms of antisocial behavior,

such as stealing, destruction of property, and delinquency.

- Beliefs and attitudes favorable to deviant or antisocial behavior.

Family factors

- Parental criminality
- Living in poverty
- Child abuse and neglect
- Poor family management practices, such as harsh, lax or inconsistent discipline
- Low levels of parental involvement
- Parent-child separation

School factors

- Academic failure
- Low bonding to school

Peer-related factors

- Gang membership
- Delinquent siblings
- Delinquent peers

Community and neighborhood factors

- Community disorganization (for example, presence of crime, drug-selling, gangs and poor housing)
- Viewing large amounts of television violence
- Neighborhood adults involved in crime
- Exposure to violence and racial prejudice

Protective Factors for Youth Violence¹⁵

The research evidence identifying protective factors is not as extensive or rigorous as that for risk factors. The following protective factors have at least preliminary research support

Individual protective factors

- Intolerant attitude toward deviance
- School achievement and success
- Positive social orientation

Family protective factors

- Connectedness to family or adults outside of the family
- Ability to discuss problems with parents
- Perception that parents have high expectations for school performance
- Frequent shared activities with parents
- Consistent presence of a parent

Peer/school protective factors

- Commitment to school
- Involvement in social activities

Evidence-Based Strategies

School-level Intervention: establishing norms or expectations for behavior

This intervention consists of school wide efforts to redefine norms for behavior and to signal appropriate behavior. Two examples of this type of program are the Bullying Prevention Program and the Safe Dates Program.¹⁶

The Bullying Prevention Program targets elementary, middle, and high school students and consists of school wide, classroom and individual components to target bullying. The implementation of this program led to large reductions in bullying and victimization among students.¹⁶

The Safe Dates Program aims to change the norms around dating violence among adolescents. The program includes school activities such as a theater performance, a 10-session curriculum, and a poster contest; and community activities such as special services for adolescents in abusive relationships and community service provider training. The students in this program reported less psychological abuse and violence from their current dating partner.¹⁷

Family/parent interventions: child-parent training
Child-parent training interventions are classified into two groups: parent-focused interventions, such as home visiting programs, and child-focused with parent training components, which focus mainly on child training during school or daycare.

Home visiting programs during pregnancy and early childhood for parents at risk of abuse (such as low-income, young single mothers) try to improve parenting skills and to provide social support. Some home visiting programs have reduced violent behaviors among youth,¹⁸ but findings are inconsistent in regard to youth violence. These programs have shown positive effects of reducing child abuse.¹⁹

The Linking the Interests of Families and Teachers Program is a child-focused intervention with parent training, which is an intervention to prevent conduct problems among adolescents, including antisocial behavior and involvement with delinquent peers. The

program is designed for elementary school students in areas with high rates of juvenile delinquency. The program has classroom, playground, and parenting components. The students in this program showed less physical aggression on the playground.¹⁶

Individual intervention: instructing students using cognitive-behavioral methods

Instructional programs that use cognitive-behavioral methods try to engage the students by using strategies such as the use of cues, feedback, rehearsal, and role-playing. Two examples of this type of program are I Can Problem Solve and the FAST Track.

I Can Problem Solve uses cognitive training to help children as young as four find solutions to problems and consider consequences to their behavior. It is a school-based program in which teachers work with small groups of children to improve these skills. The children who received the training had higher scores on the skills test.¹⁶

FAST Track targets elementary school students with the goal of preventing conduct problems, poor social relations, school failure and all precursors of subsequent criminal behavior. The program involves training for parents in family management practices, frequent home visits, social skills coaching for students, academic tutoring, and a classroom instructional program. In an evaluation, the program had positive effects on child social cognitive skills, problem behavior, and other antisocial and aggressive behaviors.¹⁶

Family/parent interventions: therapeutic foster care

Therapeutic foster care programs serve youth who do not require secure institutionalization but cannot live at home because of behavioral or emotional problems. Foster parents receive special training to provide a structured environment for learning social and emotional skills. These programs reduced subsequent violent crime by about 70% for up to a year.²⁰

Promising or Experimental Strategies

Family/parent Interventions:
family-focused interventions

Family interventions, including programs such as Functional Family Therapy and Multisystemic Therapy, show promise for children and adolescents who already show relatively severe aggressive tendencies or other problem behaviors. These interventions teach parenting skills and foster improvement in relationships among family members. In a recent review, seven out of eight well-conducted studies of Multisystemic Therapy found positive effects on at least one outcome measure, such as arrests, incarceration, or self-reported delinquency. However, the largest and most rigorous study found no differences, so that more research is needed.²¹

Community Intervention:
public housing voucher programs

The goals of voucher programs for public-housing residents, in which tenants are given vouchers they can use to rent housing in the private market in any location, are to de-concentrate poverty and improve employment, education, and other opportunities for the poor by allowing them to live in more economically and socially mixed communities. Voucher programs are an effective intervention for improving household safety and reducing families' exposure to violence.¹⁶

(See the Firearms, Violence Against Women, and Child Maltreatment Chapters.)

For More Information

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

Harborview Injury Research and Prevention Center
<http://depts.washington.edu/hiprc/>

Washington State Healthy Youth Survey
www3.doh.wa.gov/HYS/

Washington State Childhood Injury Report. Homicide and Assault Chapter
www.doh.wa.gov/hsqa/emstrauma/injury/pubs/wscir/default.htm

National
The Society for Advancement of Violence and Injury Research,
SAVIR (formerly the National Association of Injury Control
Research Centers, NAICRC)
www.naicrc.org

Committee for Children
www.cfchildren.org

National Youth Violence Prevention Resource Center
www.safeyouth.org/scripts/index.asp

Preventing Violence Through Education, Networking, and
Technical Assistance
www.prevent.unc.edu

Centers for Disease Control and Prevention, National Center for
Injury Prevention and Control
www.cdc.gov/ncipc/factsheets/yvfacts.htm
and Best Practices for Youth Violence Prevention:
A Sourcebook for Community Action
www.cdc.gov/ncipc/dvp/bestpractices.htm

Injury Free Oklahoma: Strategic Plan for Injury and Violence
Prevention, February 2004
www.health.state.ok.us/program/injury/index.html

Partnership Against Violence Network (PAVNET)
www.pavnet.org

The Prevention Institute
www.preventioninstitute.org/home.html

Blueprints for Violence Prevention. Model Programs
www.colorado.edu/cspv/blueprints/model/overview.html

Mothers Against Violence in America
www.mavia.org

National Organization for Parents of Murdered Children, Inc.
www.pomc.com

Endnotes

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- ⁶ Dake, J. A., Price, J. H. & Telljohann, S. K. (2003). The Nature and Extent of Bullying at School. *Journal of School Health*, 73(5), 173-180.
- ⁷ Washington State Department of Health. Washington State Childhood Injury Report. Olympia, WA, 2004. Retrieved April 5, 2007 at www.doh.wa.gov/hsqa/emstrauma/injury/pubs/wscir/default.htm.
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- ¹³ Herrenkohl, T. I., Hawkins, J. D., Chung, I.J., Hill, K. G. & Battin-Pearson, S. R. (2000). School and community risk factors and interventions. Loeber, R., & Farrington, D. P., (Eds.), *Child delinquents: development, intervention, and service needs*. Thousand Oaks, CA: Sage, pp. 211-246.
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- ¹⁵ National Center for Injury Prevention and Control. Youth violence: Fact sheet. Retrieved February 22, 2007, from <http://www.cdc.gov/ncipc/factsheets/yvfacts.htm>.
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EVALUATION

Two approaches will be used to evaluate the Washington State Injury and Violence Prevention Guide. The first approach will measure the short-term work activities. The second approach will use surveillance systems to monitor long-term progress such as state level morbidity and mortality rates, measures from the Behavior Risk Factor Surveillance System, crime reports, and Healthy Youth Survey results.

First Approach: Short Term

Short-term success will be monitored in two ways. The first will be to assess progress in completing the activities outlined in the Prevention Guide. The implementation plans of the four priority areas outline the Department of Health's injury and violence prevention objectives through 2010. Progress on the implementation plans will be assessed annually.

Another way progress will be assessed is by completing the activities outlined in each of the chapter logic models. The term "logic model" represents the basic elements that communicate rationale behind a plan, initiative, or program. Logic models are useful for all parties involved in a planning or implementation process. Logic models can convey the fundamental purpose of the plan, what will result from the plan, and the actions and resources expected to lead to the desired results. The logic models for each section are in Appendix G.

To see the overall picture for each cause of injury, the one-page logic models in the prevention guide convey relationships among resources, activities, knowledge and capacity needed, and short and long-term outcomes. These logic models are designed to assist in planning, obtaining resources (for example, grant writing), marketing, building partnerships and coalitions, implementing activities, and in evaluation. Each chapter will have an annual progress report on activities that have taken place in the previous year.

The second way of monitoring progress will be by assessing the marketing of the Prevention Guide. Tracking will be kept of how many guides are distributed and how many web hits there are on the website. In addition, there will be an annual survey conducted of our target audience to assess whether they are using the Prevention Guide. Our goals are:

- 60% of our target audience reads at least one chapter in the Prevention Guide.
- 40% shares the Prevention Guide with at least one colleague.
- 30% uses the Prevention Guide for decision making or implementation.

The target audience will be identified through our current partners, at the launch of the Prevention Guide, and through marketing efforts. The survey will focus on measuring whether or not these goals have been met.

Second Approach: Long Term

The second approach will measure progress made in reducing deaths and hospitalizations in each chapter. Injury morbidity and mortality surveillance data will serve as our primary source to measure progress. However, other data sources such as the Healthy Youth Survey, the Behavior Risk Factor Surveillance System, and crime data will be monitored and reviewed for long-term impact of various conditions

Data will be reviewed each November after the data report is completed as a deliverable for a Centers for Disease Control and Prevention grant. The data report includes completed death and hospitalization tables categorized by sex, age group, and external cause for all-injury, traumatic brain injury, drowning, falls, fire, firearm, motor vehicle, poisoning, suicide, and homicide. The data report is available on the DOH, Injury and Violence Prevention website.

Appendix A

Data Sources

Healthy People 2010 Objectives

Healthy People 2010 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. Healthy People 2010 objectives are not always consistent with each other because coding and other conventions have changed.

The reader must be careful when assessing Washington State relative to the national goals. In some cases, no comparable data is available. 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 2010.

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 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/EHSPHL/CHS/CHS-Data/death/deatmain.htm (Washington State Department of Health death certificates Web page).

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/ehsphl/chs/chs-data/TechNote/tech_not.pdf (Washington State Department of Health, death certificates/technical notes Web page).

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 health care. For more information, visit the Washington State Department of Health Web site at www.doh.wa.gov/EHSPHL/hospdata/.

Classification and coding of CHARS data also 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).

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.

Information is gathered by a short form sent to five out of six housing units and a long form sent to the remaining addresses.

The short form asks basic questions, such as name, age, gender, and race of everyone in the household. The long form includes the questions on the short form, 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 primary purpose of intercensal interpolations is to provide a count of people in Washington between the decennial censuses. The Office of Financial Management (OFM) develops the intercensal interpolations 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.doh.wa.gov/HWS/doc/Census.

Child Death Review (CDR) Data

Description of the Data

Washington's CDR data come from reviews submitted as of June 2003 to a state database by local CDR teams operating across the state. CDR is a process by which local communities establish a multi-disciplinary team representing public health, medical providers, law enforcement, school counselors, and other agencies and professions. Each team identifies circumstances leading to such deaths; collects and reports accurate,

uniform information; improves interagency communication; and develops strategies to improve child health and safety. From 1998 through June 2003, 29 community-based CDR teams covered the entire state of Washington through contracts with 34 local health jurisdictions. Each contractor convened a multidisciplinary team (5-20 members) that reviewed unexpected deaths of children age birth to 18 years residing in that jurisdiction using a standardized data collection tool, and submitted these reviews to the Washington State Department of Health. Unless otherwise noted, CDR data in this report includes unknowns and missing data. More information is available at www.doh.wa.gov/cfh/mch/cahpc/cdr.htm

Healthy Youth Survey (HYS)

Description of the Data

The HYS is a collaborative effort between Washington State's Office of the Superintendent of Public Instruction, the Department of Health, the Department of Social and Health Service's Division of Alcohol and Substance Abuse, and the Office of Community Development. 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. In the falls of 2002, 2004, and 2006, 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: www3.doh.wa.gov/HYS/.

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/EHSPHL/CHS/CHS-Data/brfss/brfss_homepage.htm. For CDC BRFSS information, go to www.cdc.gov/brfss (CDC Behavioral Risk Factor Surveillance System Web site).

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.

Fatal Accident Reporting System (FARS)

Description of the Data

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/fars.html.

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 Injuries¹ – 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.

Bar Charts with Rates and Confidence Intervals

The following is important to note when reading the bar charts in this report. The top of the bar represents the actual value of the rate, and the numerical value on top of the bar is the rate. The black line marked with two endpoints at the top of each bar represents the 95 percent confidence interval of the rate. We expect the true rate to fall within the confidence interval 95 percent of the time. When comparing two rates with each other and the confidence intervals overlap, the rates are not considered to differ statistically from each other.

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 pedestrian, 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, business, 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.

Elder Abuse

Physical, psychological, emotional, or sexual abuse or financial exploitation of an elderly person by a caregiver.

Elder Neglect Systematic disregard for the physical, psychological, or emotional needs of an elderly person by a caregiver.

Emergency Medical Services System

A system that provides for the arrangement of personnel, facilities, and equipment for the effective and coordinated delivery of health care 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 examiners 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.

Firearm Injury

Damage to tissues caused by bullets fired from a firearm.

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 for its International Classification of Diseases 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 as a point in time of during a specified period of time.

Rate per 100,000

Using the Washington State childhood death rate as an example, this is the total number of deaths in a specified time period divided by the total population of children in Washington State in that same time period, and then multiplied by 100,000. The resulting rate is the number of deaths occurring in a group of 100,000 residents in Washington State during the specified time period.

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.

Significant Trend

For the time trend analyses in this report, the "joinpoint" methodology developed by the National Cancer Institute was used. Information on this method is available at srab.cancer.gov/joinpoint. A significant trend indicates that the change in the rate is not random and that the increase or decrease is likely to be occurring in a population. The significance level used for a significant trend is $p < 0.05$.

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.

Specific Rates

Age specific rates are rates calculated for a specific age group; the numerator and denominator refer to the same age group.

Gender specific rates are rates calculated for each gender separately; the numerator and denominator refer to the same population.

Region specific rates are rates calculated by region of the state; the numerator and denominator refer to the same population.

Age-adjusted rates are rates that have been adjusted to minimize the effects of differences in age composition when comparing rates for different populations. Age-adjustment rates were used in this report when comparing children who live in urban settings to those in rural settings. This was necessary because there are more young children (ages 0-4) and fewer teens (ages 15-17) in urban settings, and visa versa in rural settings. The age-adjustment corrects for this difference.

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, the occur closer in time and space than would normally be expected in a given community (CDC).

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 (ACS).

Trauma

A physical injury or wound caused by an external force that may cause death or permanent disability. Trauma is also used to describe severe emotional or psychological shock or distress.

Trauma Care System

A system of health care 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 (NHTSA).

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 (ACS).

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 of 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	NASS	National Accident Sampling System
ACEP	American College of Emergency Physicians	NCHS	National Center for Health Statistics
ACS	American College of Surgeons	NCS	National Crime Survey
ANSI	American National Standards Institute	NCPCA	National Committee for the Prevention of Child Abuse
APHA	American Public Health Association	NEISS	National Electronic Injury Surveillance System
ASTM	American Society of Testing Materials	NFPA	National Fire Protection Association
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)	NIOSH	National Institute for Occupational Safety and Health
CPR	Cardiopulmonary resuscitation	NSBC	National Safe Boating Council
CPS	Child Passenger Safety	NSC	National Safety Council
CPS	Child Protective Services	OSHA	Occupational Safety and Health Administration
CDR	Child Death Review	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	WISHA	Washington Industrial Safety & Health
FARS	Fatal Accident Reporting System	WPFE	Washington Public Fire Educators
FMCSA	Federal Motor Carrier Safety Administration	WSDOH	Washington State Department of Health (DOH)
GCS	Glasgow Coma Score	WSLCB	Washington State Liquor Control Board
GSW	Gunshot wound	WSP	Washington State Patrol
IPPE	Injury Prevention & Public Education	WSPR	Washington State Parks & Recreation
ISS	Injury Severity Score	WSSRC	Washington State Safety Restraint Coalition
MMWR	Morbidity and Mortality Weekly Report	WTSC	Washington Traffic Safety Commission
		YPLL	Years of Potential Life Lost

Appendix D

Haddon's 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 Device's, 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

The Injury Planning Committee

The Injury Community Planning Group developed the following vision and mission statement to guide them in their work.

Vision

Reduce death and disability associated with injury and violence in Washington State.

Mission

To provide leadership, resources, and information to broad-based partners for injury and violence prevention throughout Washington State.

To advance the work, the ICPG will engage in activities that:

- Develop a comprehensive statewide plan for injury and violence and prevention.
- Provide information on research-based best practices and promising interventions.
- Help build sustainable partnerships within Washington State's injury and violence prevention community.
- Increase awareness of injury and violence as a public health problem.
- Enhance the capacity of partners to conduct research, collect and analyze data, and provide services on injury and violence prevention and control in our communities.
- Support public health policies that to advance injury and violence prevention.

Injury Community Planning Group Members

- Elizabeth Bennett, MPH, CHES Children's Hospital & Regional Medical Center
- Luann D'Ambrosio, MS, Northwest Center for Public Health Practice
- Beth Ebel, MD, MSc, MPH, Harborview Injury Prevention and Research Center
- John Erickson, Public Health Emergency Preparedness and Response, Washington State Department of Health
- Katharine Fitzgerald, Children's Hospital & Regional Medical Center
- Malvina "Annie" Goodwin, RD, CD, Benton-Franklin Health District
- Tony Gomez, RS, Public Health: Seattle and King County
- David Grossman, MD, Group Health Cooperative
- Lydia Guy, PhD, Washington Coalition of Sexual Assault Programs
- Margaret Hobart, PhD, Washington State Coalition Against Domestic Violence
- Bill Hurley, MD, Washington Poison Center
- Karin Knopp, RS, Portland Area Indian Health Service
- Angie Ward, Washington Traffic Safety Commission
- Liz Wilhelm, MS, CADP, ICPS, Committee for Children
- Sally York MN, RNC, NorthWest Orthopaedic Institute

Appendix F

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 (available at www.preventioninstitute.org) 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

CADCA Community Anti Drug Coalitions of America-National Coalition Institute www.coalitioninstitute.org/

The Community Tool Box, a free community organization resource site owned and maintained by the University of Kansas, http://ctb.ku.edu/en/solveproblem/Troubleshooting_Guide_6.htm

"Building Coalitions" fact sheets from Ohio State University <http://ohioline.osu.edu/lines/kids.html#COALI>.

The Good Neighbor's Guide to Community Networking <http://lone-eagles.com/cnguide.htm>

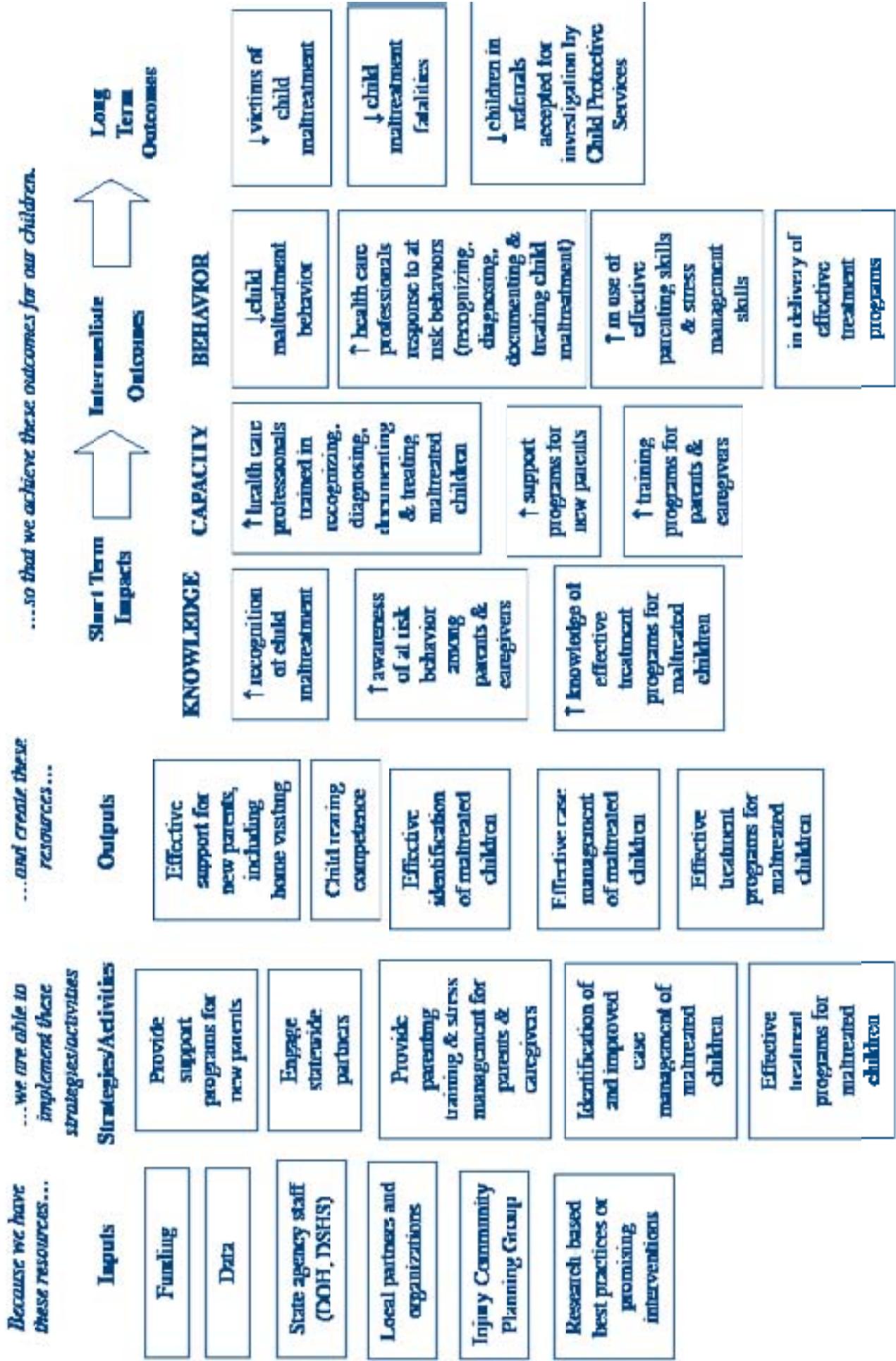
The National Network for Collaboration <http://crs.uvm.edu/ncco/>.

Center for Substance Abuse Prevention's Prevention Platform, <http://preventionplatform.samhsa.gov>. Follow the directions for signing in as a New User if you have not used the site before.

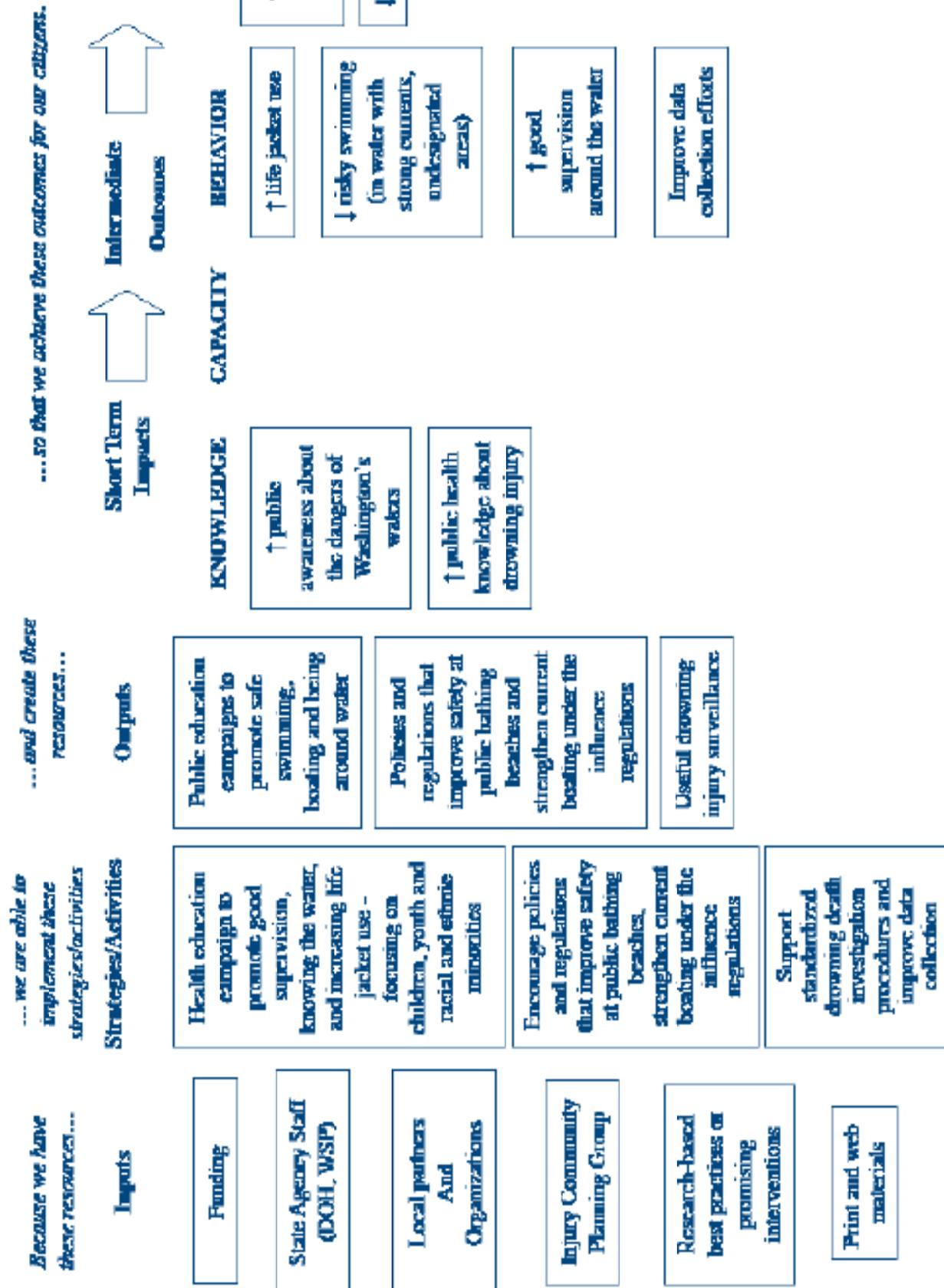
The Prevention Institute
www.PreventionInstitute.org

Together We Can Initiative
www.togetherwecan.org/

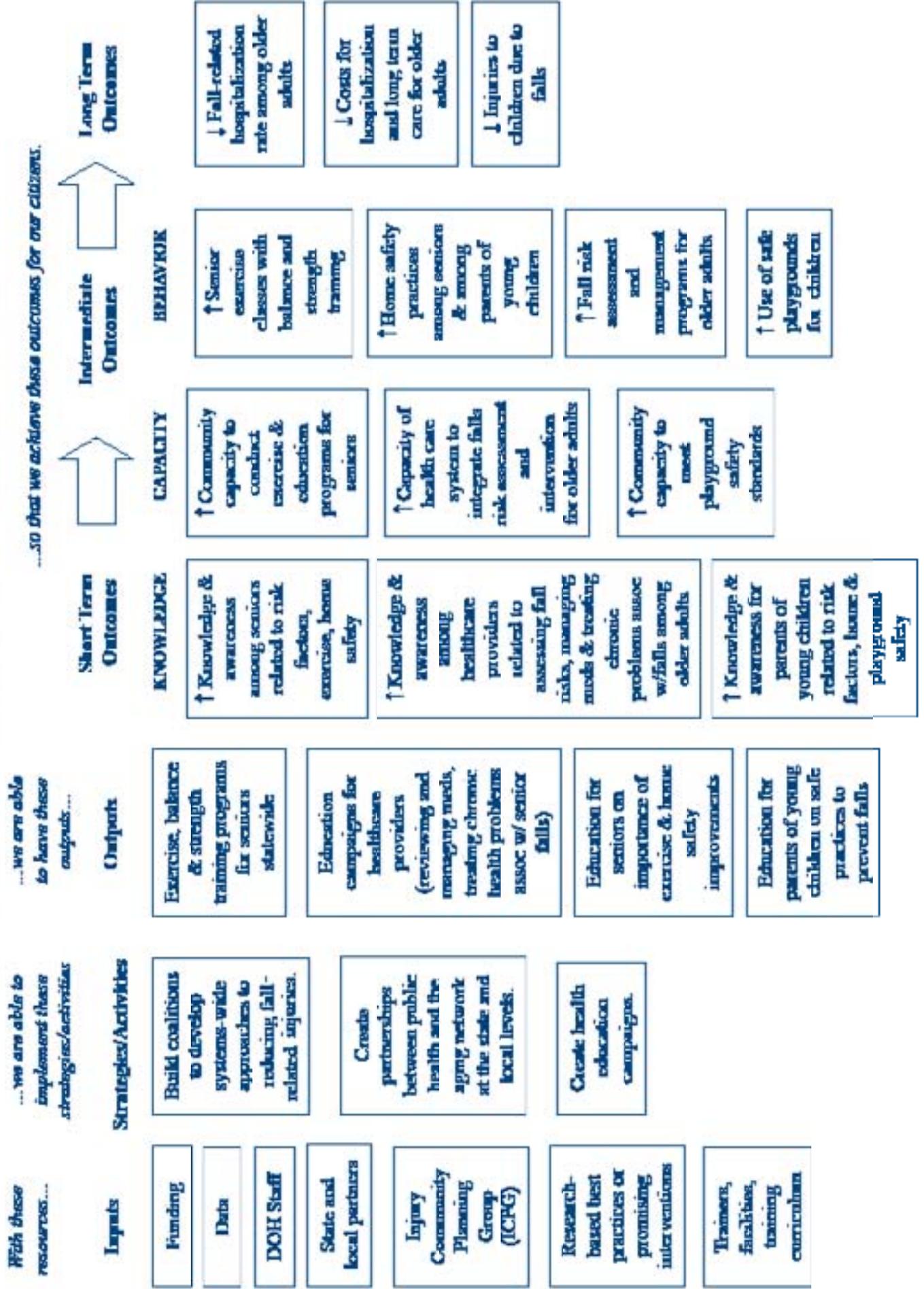
Reducing Child Maltreatment in Washington State



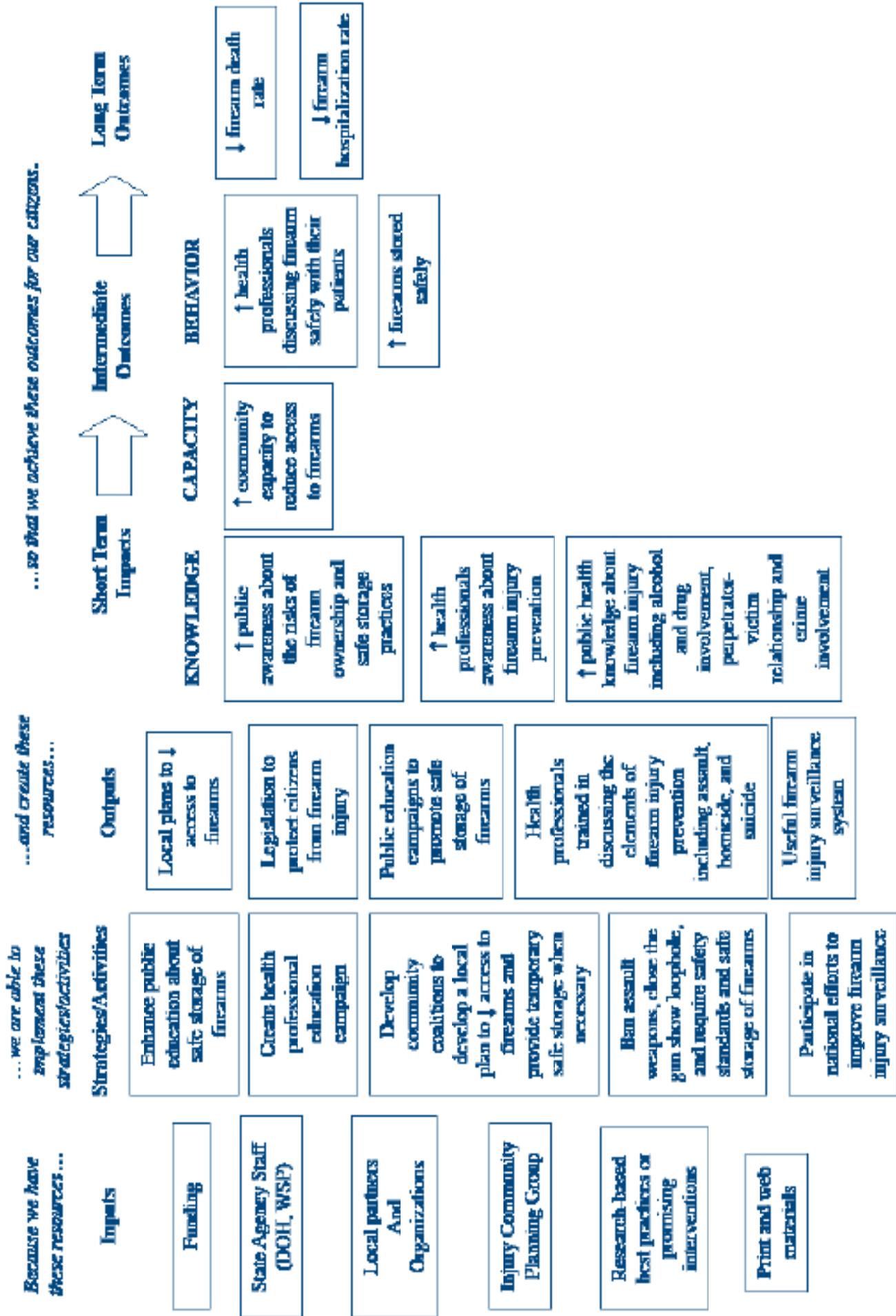
Reducing Drowning Injury in Washington State



Reducing Fall-Related Injuries in Washington State



Reducing Firearm-related Injury in Washington State



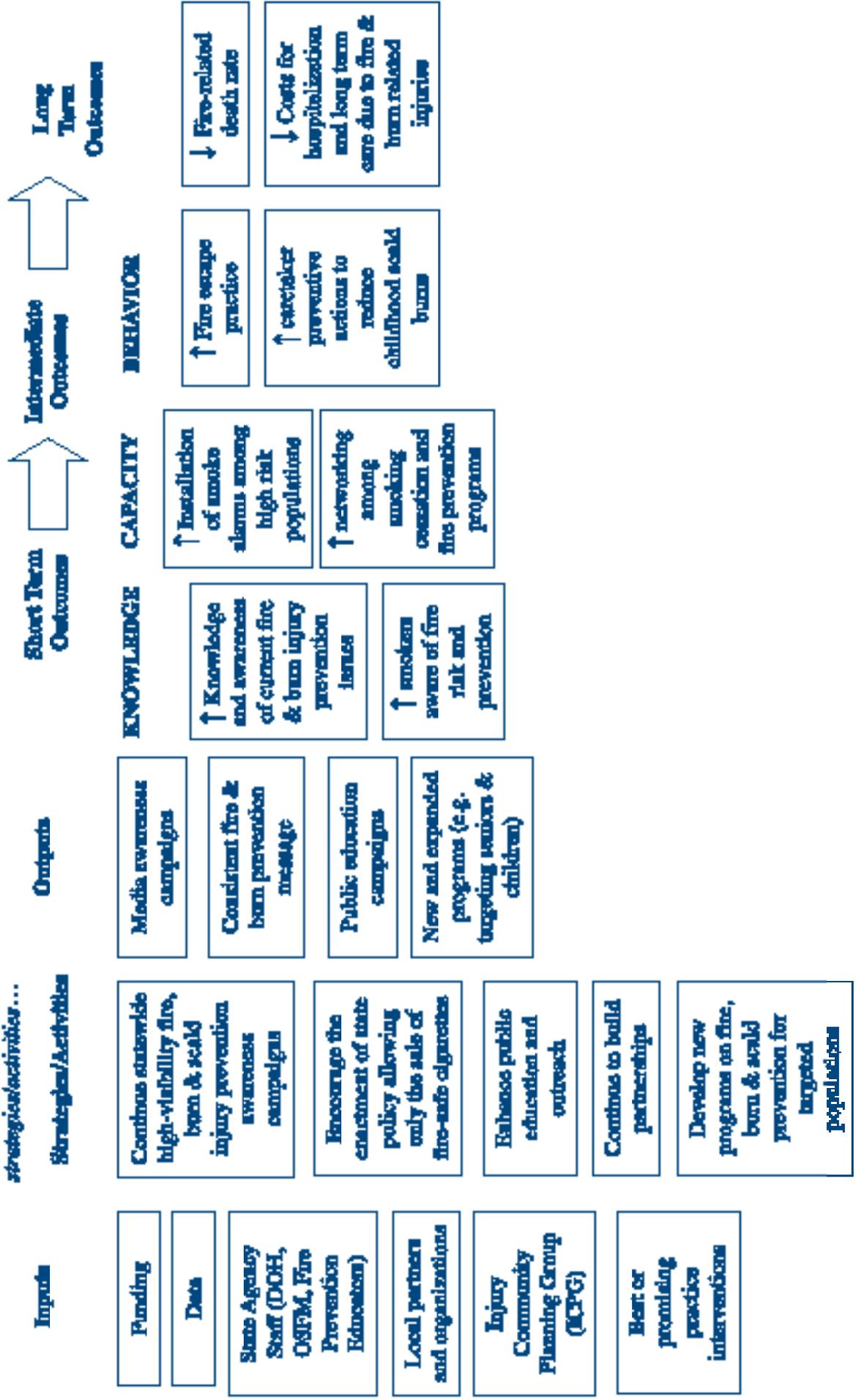
Reducing Fire & Burn Related Injuries in Washington State

Because we have these resources...

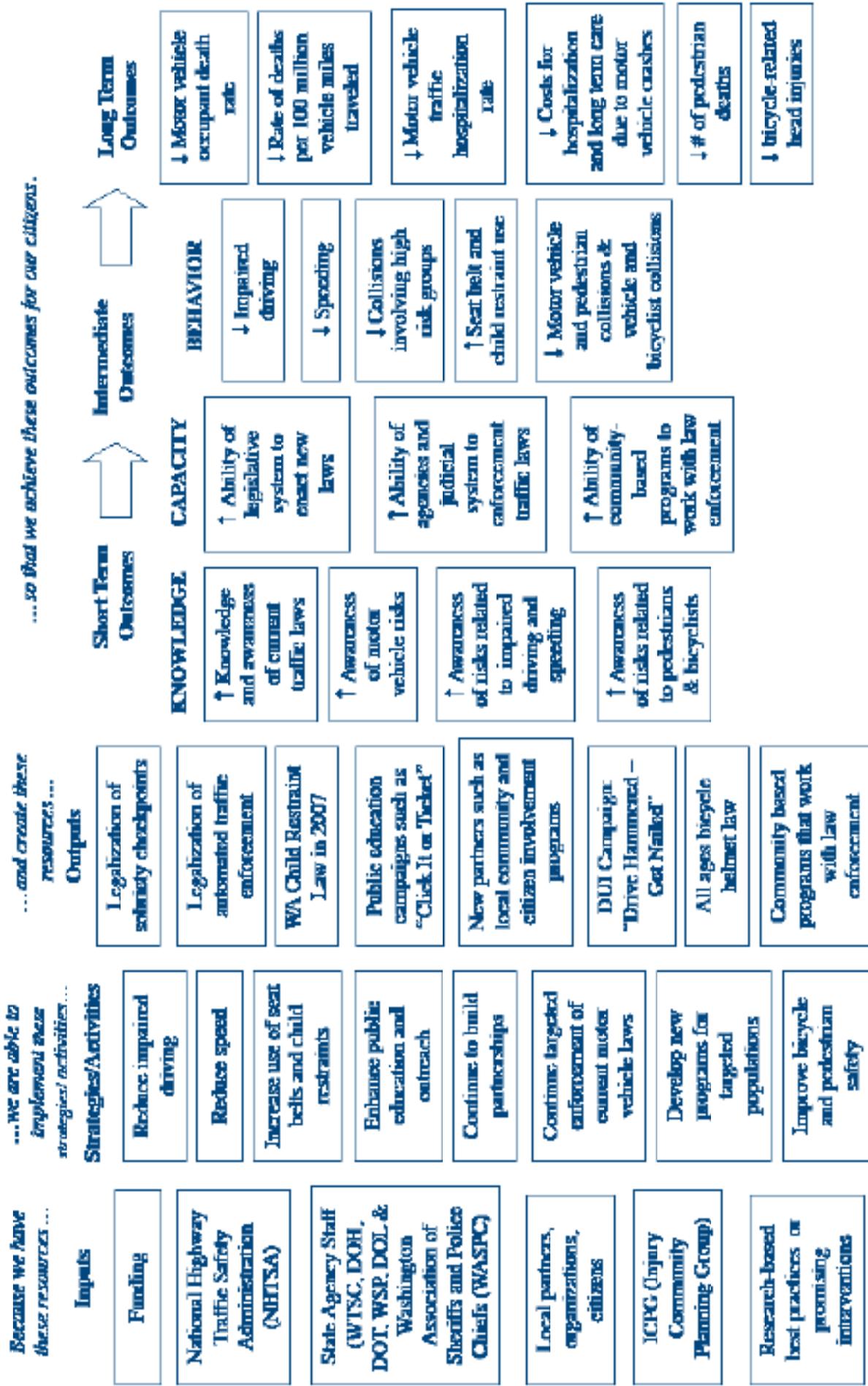
... we are able to implement these strategies/activities...

... and create these resources...

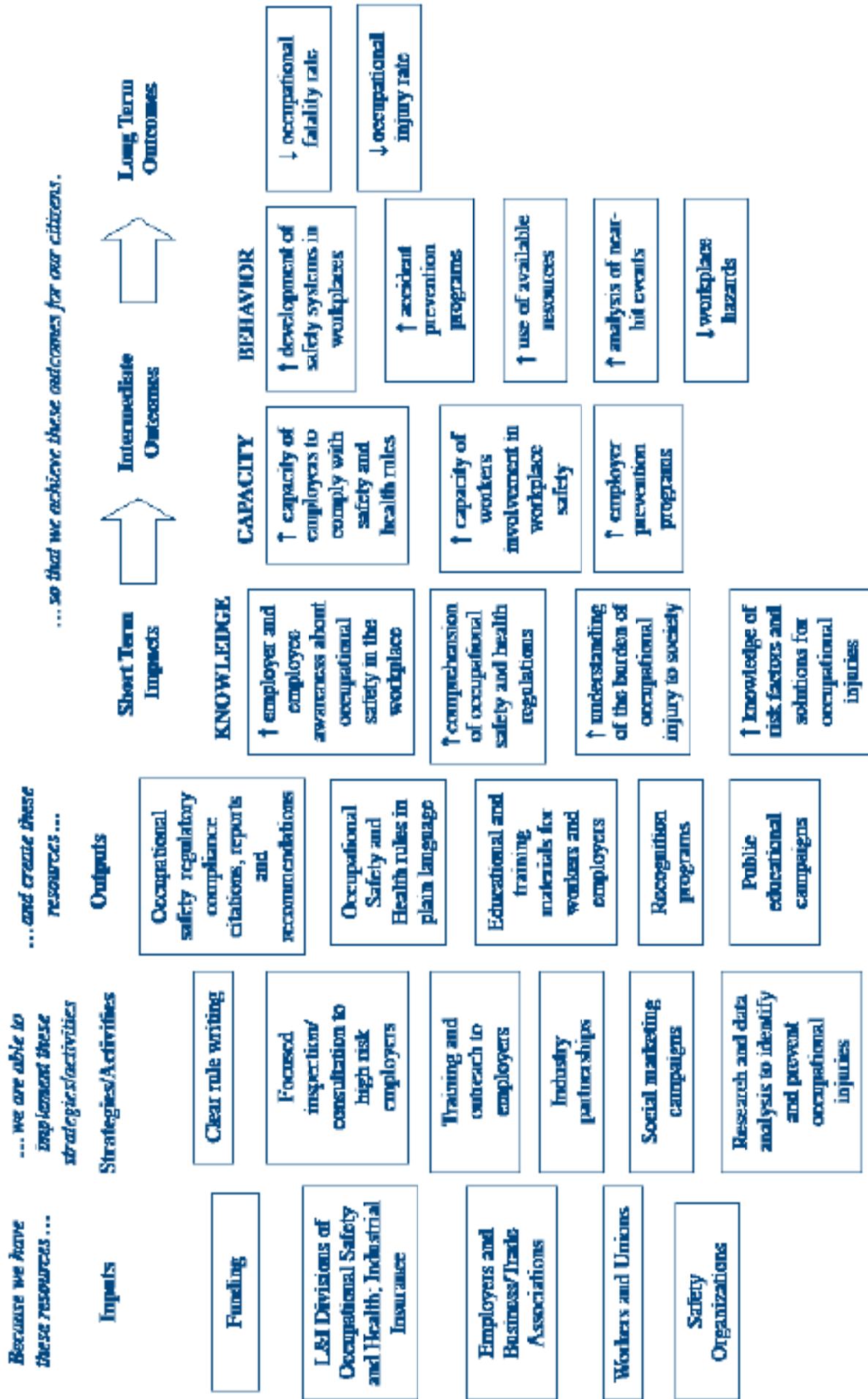
... so that we achieve these outcomes for our citizens.



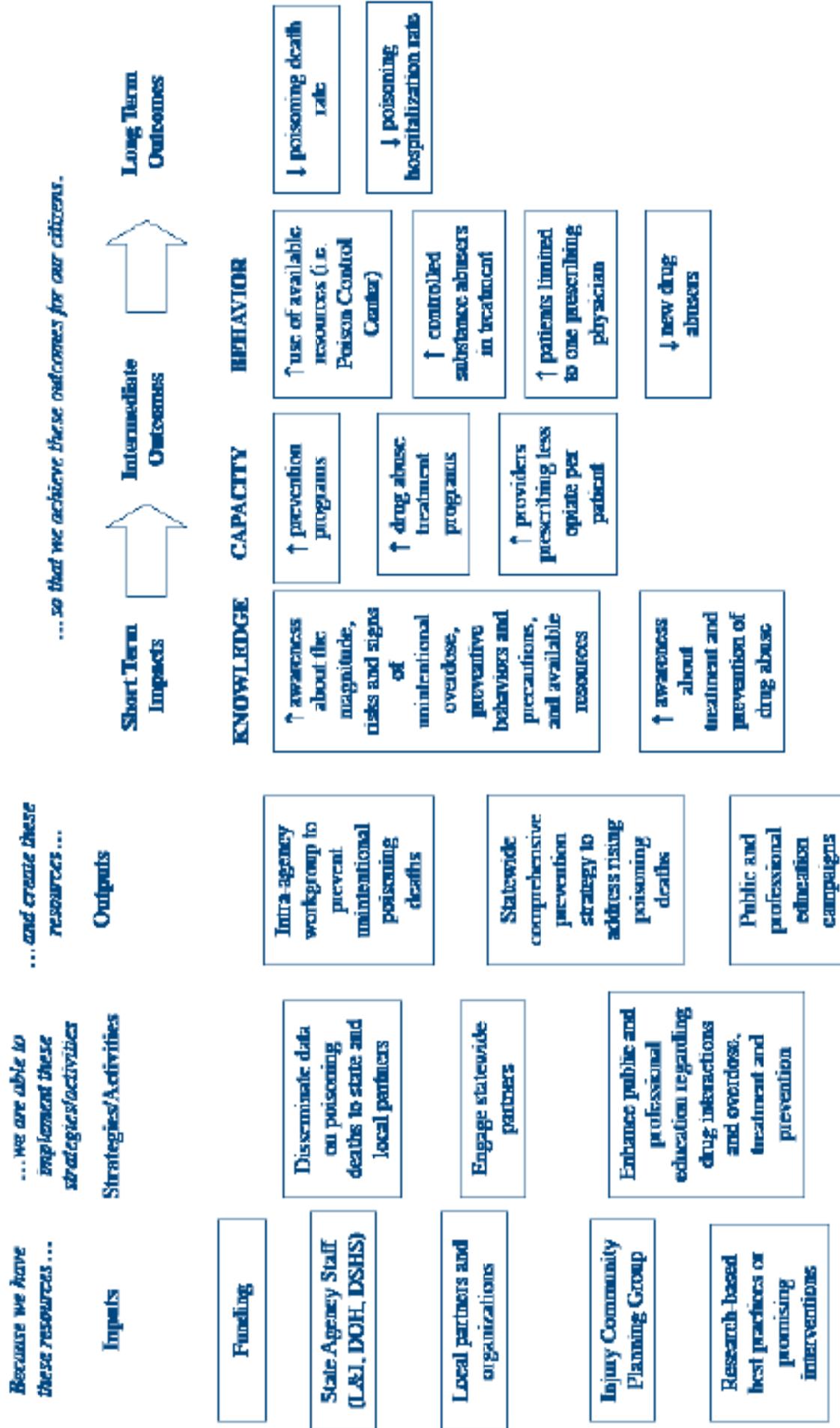
Reducing Motor Vehicle-Related Injuries in Washington State



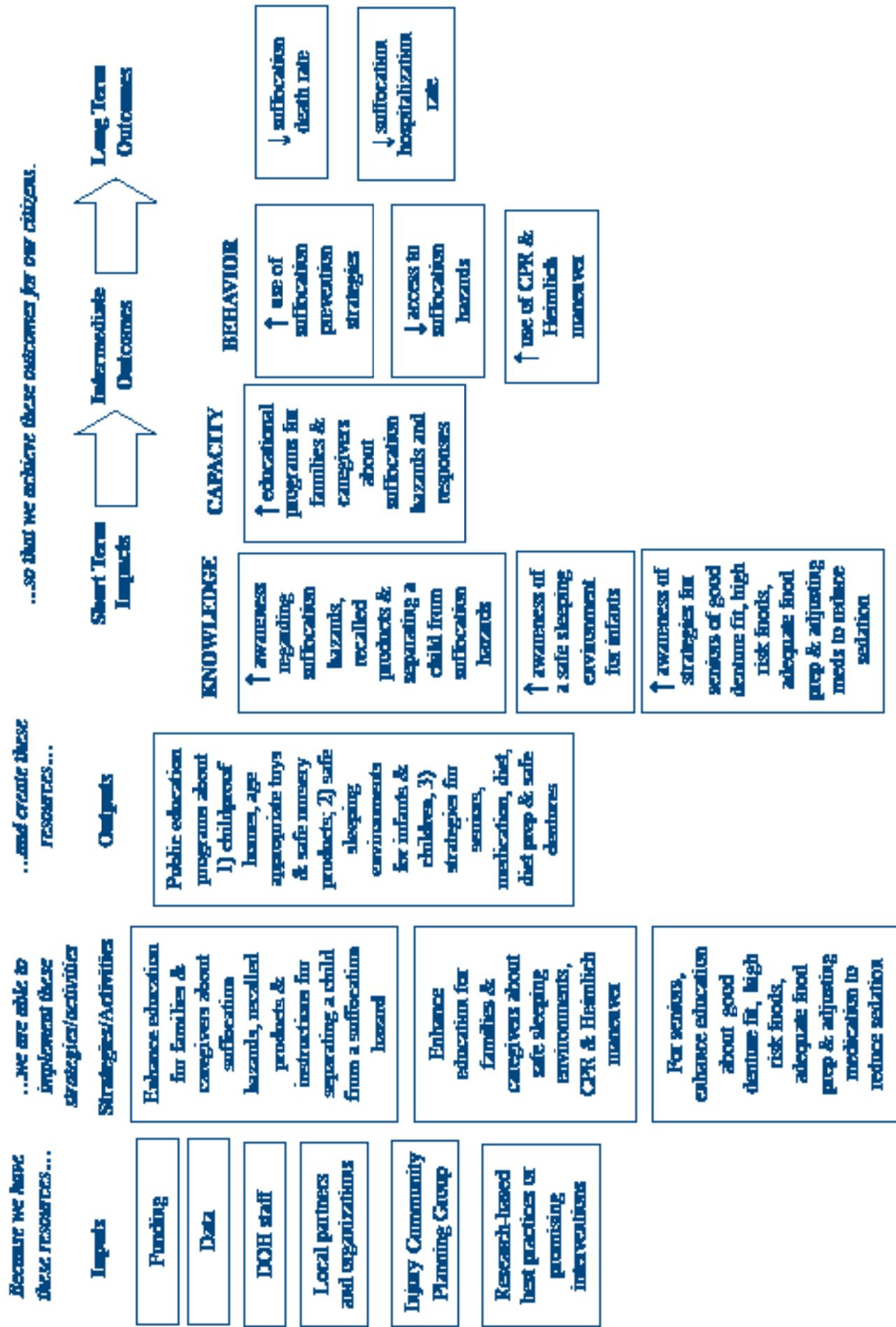
Reducing Occupational Injuries in Washington State



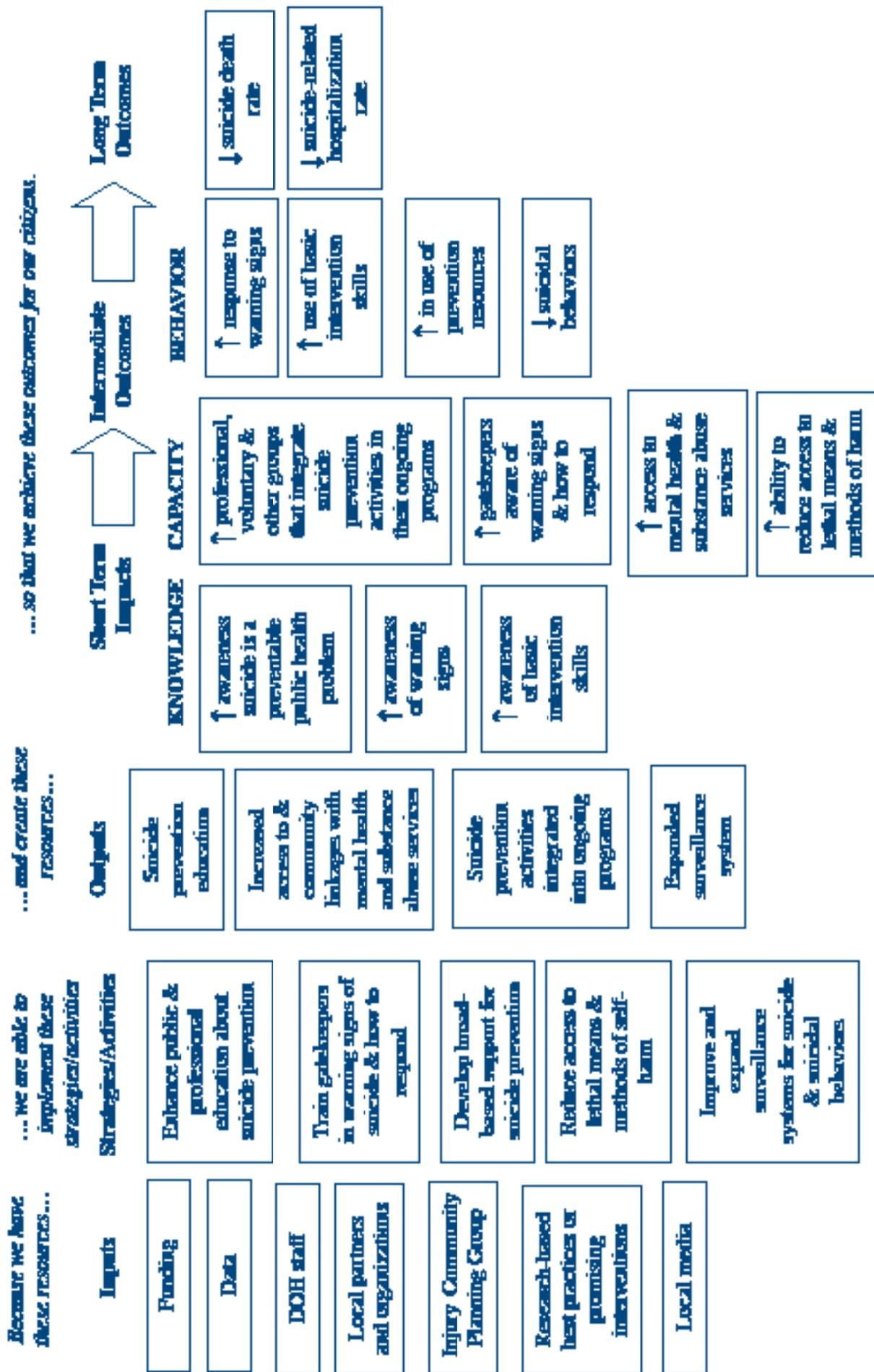
Reducing Poisonings in Washington State



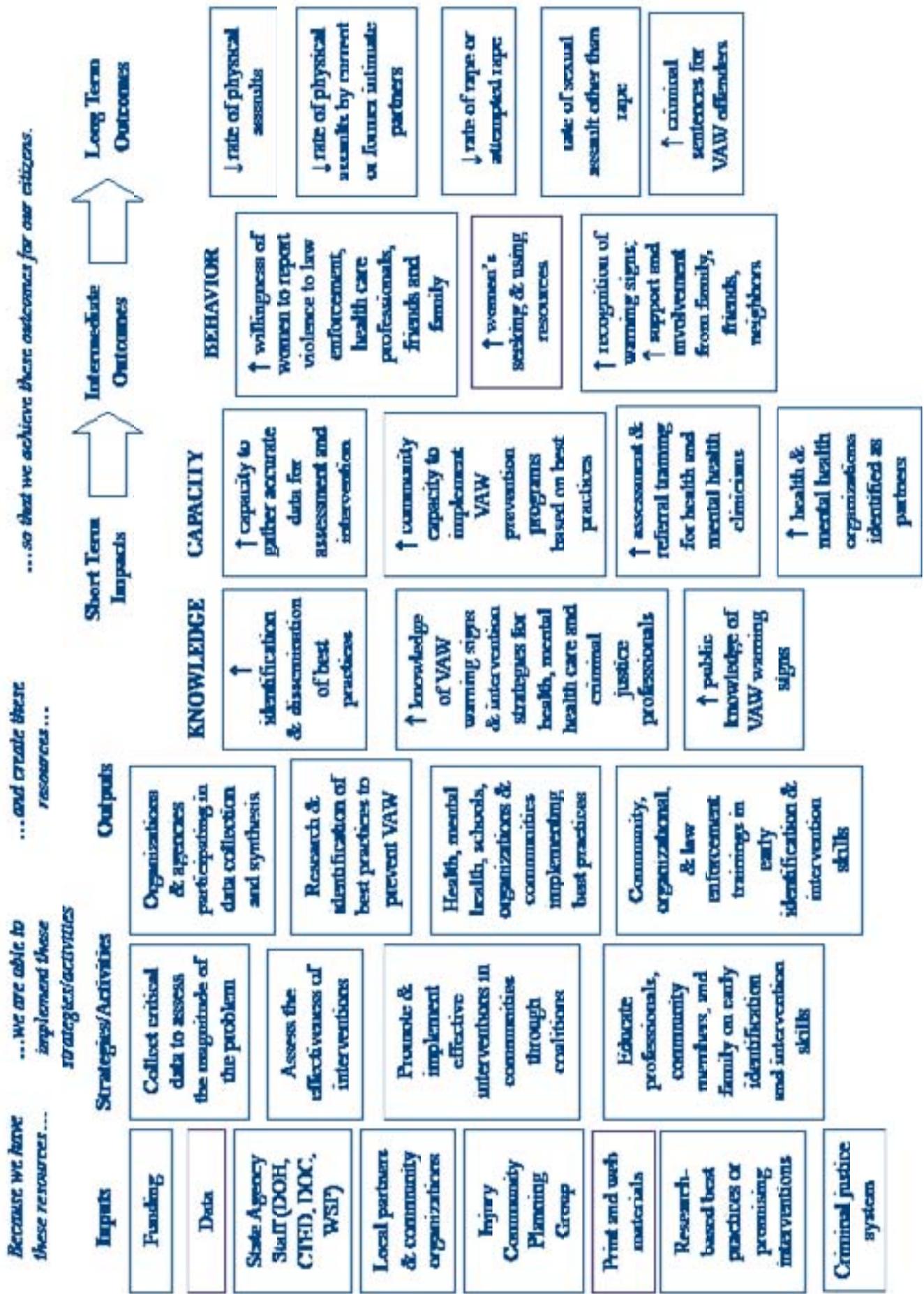
Reducing Suffocation-related Injuries and Deaths in Washington State



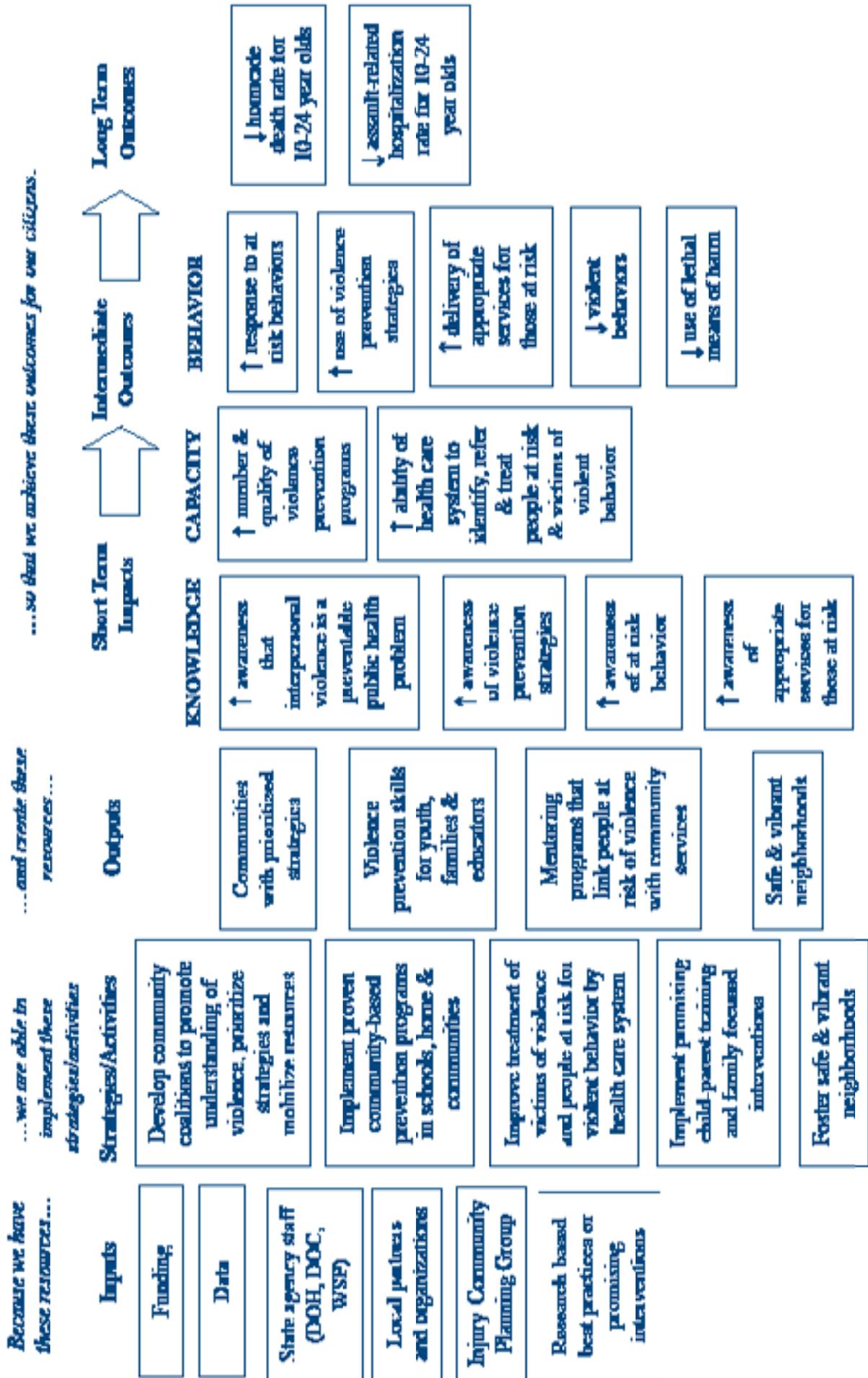
Reducing Suicides in Washington State



Preventing Violence Against Women (VAW) in Washington State



Reducing Youth Violence in Washington State





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