Strategies For Building Safe Communities

Injury Prevention Works

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Shelli Stephens-Stidham
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Dedication

In February 2004, Sue Mallonee, R.N., M.P.H., was named Director of Scientific Affairs at the Oklahoma State Department of Health following 16 ½ years with the Injury Prevention Service. The Injury Prevention Service was created in 1987, and Sue was selected to lead the program.

Under her leadership, the Injury Prevention Service developed into a comprehensive injury prevention program and emerged as a leader in the field, gaining national and international recognition across the country.

It has been our privilege to stand shoulder-to-shoulder with her and share her vision. It is with pleasure that we dedicate this publication to Sue as an opportunity to acknowledge her contributions to injury prevention.

Shelli Stephens-Stidham Pam Archer

"What pleasure — to march in a parade which shall always be remembered as you."

Reprinted from A Parade Named Leadership by Mary Anne Macy Bryce Lewis Radmacher 1999

Foreword

The faces of public health have been changing dramatically in the past 100 years. At the beginning of the 20th Century, the life expectancy for the average person was 46 years; today life expectancy has increased to 78 years. Improvements in sanitation, development of antibiotics and immunizations, and other public health measures made it possible to drastically reduce deaths and disability due to infectious disease. Unfortunately, not all children and young adults can be expected to live well into their 70s. These people will die from an injury.

Injury is the single leading killer and disabler of Americans and Oklahomans between the ages of 1 and 44 years. Every year, nonfatal injuries cause one in three of us to seek medical attention and render us unable to perform normal activities.

"Accidents" are no longer a part of our terminology, because we know injuries are not random, uncontrollable acts of fate. Instead, they are understandable, predictable, and preventable. Oklahoma has established itself as a leader in the country in implementing and testing specific, community-based injury prevention measures. It is truly a promising and exciting challenge for all of us in public health as we strive to make an impact in reducing the burden of the injury problem.

Many local organizations and individuals can play a role in community-based injury prevention programs. *Injury Prevention Works: Strategies For Building Safe Communities* was developed to assist communities and local health practitioners in meeting the challenge of the injury problem in Oklahoma. It is our hope that it will be a useful tool, and that every community will join us in responding to the need to reduce this problem.

Shelli Stephens-Stidham
Injury Prevention Service

Safety and security don't just happen; they are
the result of collective consensus and public investment.

Nelson Mandela

►What You Should Know

National Statistics

According to the Centers for Disease Control, 18 people in the U.S. die every hour due to injuries.[1] Unintentional injuries are the fifth leading cause of death in the U.S. and responsible for sending one of every three people to the emergency room for treatment.[1] In 2000 alone, injuries resulted in more than 148,000 deaths.[2] Nearly 30 million people were treated in U.S. emergency rooms for nonfatal injuries in 2001, and 1.6 million of those were later hospitalized or transferred for specialized care as a result of their injury.[1] Injury-related medical expenditures costs reached an estimated $117 billion in 2000, approximately 10% of total U.S. medical expenditures.[3]

For combined age groups, motor-vehicle crashes were the leading cause of fatal injuries and unintentional falls were the leading cause of nonfatal injuries treated in emergency rooms in 2001.[1] Distinguishing injuries by age group, the young and old appear to be affected disproportionately. Among adults over 65, fall-related injuries account for 62% of unintentional injuries treated in emergency rooms, and the death rate from falls is five times higher among adults over 75 than in any other age group. For young children aged 1-4 years, drowning is the leading cause of injury death, accounting for one in four injury-related deaths.[1] Further, when young lives are lost, it is important to consider the impact on society through what these people would have contributed.

Injuries are classified as unintentional or intentional (suicide, homicide, etc.). Although the events leading to intentional and unintentional injuries may differ widely, the mechanisms of injury and the injuries themselves are usually similar.

Oklahoma Statistics

In Oklahoma, injuries are the third leading cause of death (behind heart disease and cancer), accounting for more than 2,000 deaths each year. Injuries are the leading cause of death and lifelong disability among persons 1-44 years of age. After the first year of life, more children die

from injuries than all other causes of death combined. Almost two-thirds of injury deaths are unintentional (64%). The leading causes of injury death are traffic crashes, suicide, homicides, falls, fire/burns, and drugs/poison. Among teens, the leading causes of all deaths are traffic crashes, suicide, homicide, and drownings. From 1992 - 2000, Oklahoma's death rates due to traffic injuries, drownings, fire/burns, falls, homicide and suicide were higher than national rates.

Males are more than two and one half times as likely to die from injuries than females. Persons 15-24 and 65 years of age and older are at highest risk of dying from an injury. African Americans have the highest injury death rate among all age groups except those 65 years and older. Overall, African American males 15-24 years of age have the highest risk of injury death. Injury death rates are more than 20% higher for non-metropolitan regions of the state than metropolitan regions. More than one-third of persons who die from an injury in Oklahoma have a positive blood alcohol concentration (BAC).

►What Works

Many people think injuries are unavoidable, chance happenings. In reality, injuries, like diseases, occur in highly predictable patterns. Utilizing a public health approach, injuries can be prevented. This approach requires program planners to determine the scope of the problem through data collection, identify risk and protective factors, design and evaluate interventions based on that information, and implement programs and provide information to the public.

While the circumstances leading to an injury, such as a motor vehicle crash, may not be avoidable, the injuries sustained in that crash can often be prevented or lessened by wearing seat belts or having airbags in the vehicle. Wearing bicycle or motorcycle helmets, installing smoke alarms in residences, and constructing four-sided fences around swimming pools are examples of other proven effective injury prevention strategies.

Public Health Approach To Injury Prevention

- **Define the problem**
- **Identify risk and protective factors**
- **Develop and test prevention strategies**
- **Assure widespread adoption**

Community-based public health providers are essential in the fight against

unnecessary death and disability caused by injury. Because each community is different, with unique weaknesses and strengths, programs and projects should be developed that best fit the community's needs. Injury prevention should be strongly rooted in community involvement and input. Programs that use a variety of approaches are most likely to be successful. Public education, product distribution (bicycle helmets, smoke alarms, child safety seats, etc.), comprehensive legislation, effective enforcement, and modified environments are a few examples of a multifaceted approach to a successful injury prevention program. Begin the prevention efforts with a success and build on that success.

►What You Can Do *Reprinted from "Lifesavers II: A Guide to Smoke Alarm Projects*

***Find out who, what, where, when, and why*.**

Begin by gathering local information and statistics about injuries and deaths. Demographic and statistical information is available from a variety of sources including the U.S. Census Bureau, Oklahoma Department of Commerce, Oklahoma State Department of Health, local county health departments, Indian Health Service, as well as Appendix A and the Where You Can Go sections of this manual. Such information can be used to identify census tracts where the percentage of the high-risk populations (such as those less than five or more than 65 years of age) is higher. The Injury Prevention Service can provide data on hospitalized and fatal injuries. The information should be used to concentrate resources in areas with the greatest need, and to plan and evaluate the project.

Recruit the right people to build a coalition.

A coalition is a group of people and organizations that unite to collaboratively address and impact a specific problem. Coalitions lend themselves to resource and information sharing; greater community credibility; sharing of experiences, perspectives, and theories; and broader objectives (beyond the limited objectives of a single organization). Coalition members should represent a wide and diverse cross-section of the community, including members of the audience you plan to reach, representatives from organizations which already serve the intended audience, and people with personal interest in the prevention effort. Interested and resourceful persons from groups such as media, schools,

civic clubs, hospitals, intended population leaders, public safety, health department, and volunteer groups can make a "good" project a GREAT project. Coalition members need to bring with them different perspectives, enthusiasm, and resources like time, people, money, effort, ideas, and commitment.

Make a road map.

Have a plan for where the project is, where it is going, how you are going to get there, and how to measure your progress. Devise a set of preliminary goals and objectives. What are you trying to accomplish (e.g., the prevention of residential fire-related injuries, increase the number of children in car seats)? Who is your intended audience (e.g., a certain neighborhood, older adults, young children)? Identify what others have done and find out what made it successful or what made it unsuccessful. Be able to determine if the project is reaching those who are in need. Be ready to modify the plan if it is ineffective.

Know the audience.

Statistics and demographics can tell a lot about a high-risk population, but data cannot tell the whole story. Different audiences receive a safety message differently. Focus group interviews and involving representatives from the intended population in the planning process can help identify cultural factors (cooking habits), attitudes (mistrust of the system), and environmental conditions (burglar bars on all exits) that could affect the effectiveness of the project. Present relevant and practical prevention messages and experiences to the intended audience. For example, if home burglary is perceived as a greater risk than residential fire, a project to remove unsafe burglar bars from windows will not be successful without first addressing the crime issues in the area.

***The hard-to-reach are hard to reach*.**

A variety of methods are needed to reach different sections of the community and bring about change. Utilize different ways of providing information, education, and products. The use of radio, television, newspapers, public speaking engagements, schools, and civic groups are all useful, but other ways to reach the hardest to reach are needed. Tap into groups who are already reaching that audience. Examples of some established programs which already reach and serve the high-risk groups

are: community action agencies, meals-on-wheels, immunization clinics, flu clinics, WIC programs, senior nutritional centers, neighborhood associations, ethnic churches, and the Department of Human Services. Go to the audience—do not wait for them to come to you.

Never buy what you can get for free.

It is important to have a clear understanding of the needs of your injury prevention project, as well as the resources available within the community to supply those needs. Both financial and human resources will be crucial in determining your success. Use volunteers from organizations such as the Girl and Boy Scouts, 4-H clubs, honor societies, service clubs, utilities, churches, or businesses. Individuals, businesses, or organizations can donate materials such as reams of paper, copying services, money, or other in-kind donations. Trained volunteers from the intended audience can also be effective peer educators.

***Let the community know about the great things you are doing*.**

Display posters or flyers with information about how to obtain injury prevention services in grocery stores, laundromats, schools, child care centers, health clinics, fast food restaurants, banks, convenience stores, etc. Advertise the project, reach new audiences, and reinforce messages and behaviors through the use of multiple outlets. Use outlets such as billboards, newspaper articles, radio messages, local public service announcements, church bulletins, or display booths. The more ways a message is presented, the more effective it will be. Tell anyone and everyone about what is being done to make your community a safer place to live.

***Be flexible - change to meet the needs*.**

When planning your project, keep in mind competing community events. Either delay your plans or move your project to join the other event. Plan for when the audience will be there. For example, if distributing smoke alarms door-to-door, go on the weekend or in the early evening when more people are at home. It is important to gauge the responsiveness to the planned project. If the audience is not responding, be flexible and change the plan to reach those in need. Sometimes immediate priorities change, but be faithful to come back to the plan.

Give the responsibility for prevention to the community and audience.

Injuries are not accidents; most can be predicted and therefore prevented. The individuals and the community own the conditions that lead to the

injury problem. Therefore, the individuals and community have the responsibility for prevention. Respect the audience and plan projects that transfer responsibility for prevention to them. Provide the community and individuals with the awareness of the injury problem and information on how to prevent injuries. For example, the project personnel can install a smoke alarm in a home, but the occupant has to take the responsibility of keeping the alarm installed and functioning (i.e., leaving the battery in and changing the battery when needed) and practicing safety behaviors. Prevention is everybody's business.

References

1. Centers for Disease Control and Prevention. Surveillance for Fatal and Nonfatal Injuries, United States, 2001. *MMWR.* 2004;53 (SS-7):1-58.

2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. *Web-based Injury Statistics Query and Reporting System (WISQARS)*. August 2004. Available from: http://www.cdc.gov/ncipc/wisqars. Accessed October 16, 2002.

3. Centers for Disease Control and Prevention. Medical Expenditures Attributable to Injuries, United States, 2000. *MMWR.* 2004;53(1):1-4.

►Building Community Programs

Step One: Solicit Community Support

Community involvement is key to the success of any project at the local level. Commitment from the police and highway patrol, fire department, medical community, county health department, Native American tribes, ethnic organizations, schools, senior groups, churches, civic groups, and safety and community coalitions among others will provide the encouragement, helping hands, input and resources needed to build and implement the most effective injury prevention measures. Support from program participants is necessary to ensure that your efforts are effective and well received.

Step Two: Define Community Needs

Each community is unique with individualized preferences and needs. Certain injuries are a bigger problem for some communities. To best understand these differences, it is important to begin by collecting local statistics. Such data collection, also called surveillance, should serve as the foundation of community injury prevention programs. Surveillance methods may include analysis of existing data and reports, conducting telephone and on-site observation surveys, and generating input from different community groups and leaders. Data make it possible for you to identify and understand your injury problem. For assistance in finding quality sources of data, see the Where You Can Go section of this manual.

Step Three: Select the Injury

With the needs of your community in mind, focus on "who" is being affected by injuries, to "what" extent, and the best, most realistic approach for preventing these injuries. Factors to consider include:

- number of deaths
- severity of injuries or disabilities

• number of people affected
• age groups affected
• race or ethnicity affected
• community geography and environment
• high risk occupations (i.e., farming)
• circumstances of the injuries
• effectiveness of injury prevention measures
• resources available for implementing prevention measures.

Step Four: Select the Population at Risk

Demographic information (see Appendix A) is useful for getting a clearer picture of the make-up of your community. Age, race, sex and other socioeconomic factors should be considered, as well as the ability to reach those most at risk. For maximum effect, focus your efforts on a specific sub-population, such as Native American children less than 5 years of age in a given city or county, or persons 65 years and older receiving county health department services.

Step Five: Select the Intervention

The surest route to success is by being realistic about your goals and subsequent selection of the most appropriate injury prevention projects and activities. Also consider what resources, including time, people, and money, are available. The best interventions have maximum impact on the intended population in a shorter amount of time and with the most effective use of your resources.

Interventions can be one of three types: education, legislation (enforcement), or technology/devices (engineering). The ideal program would contain aspects of all three, however, an injury intervention may target just one type. The *Intervention Decision Matrix* is a simple tool designed to identify intervention options and choose between them (see Appendix B). It can also identify long-term goals and intervention options that support each other. The seven elements of the Intervention Decision Matrix can be used as decision criteria when selecting an intervention: 1) effectiveness; 2) feasibility; 3) cost feasibility; 4) sustainability; 5) ethical acceptability; 6) political will; 7) social will; 7) potential for unintended benefits and potential for unintended risks.[1]

Step Six: Determine Project Goals & Objectives

The importance of establishing goals and objectives cannot be overstated. Project goals and objectives will be used to guide and evaluate your efforts. Goals should be clearly stated in measurable terms. Objectives tell you how to accomplish your goals. Goals and objectives should focus on preventing the injury from occurring and/or changing knowledge, attitudes and behaviors related to the injury. For example:

Project Goal: Increase the use of bicycle helmets by 25% among children 5-12 years of age in the intended population.

Project Objective 1: Ensure the availability of low-cost helmets.
Project Objective 2: Educate parents about the extent of bicycle-related head injuries.
Project Objective 3: Implement an elementary school policy requiring helmet use when riding bicycles to school.

Step Seven: Determine Project Strategies

The strategies you select for your injury prevention project will help you to accomplish your goals and objectives. Your strategies should be realistic and easily implemented within your community. This is a good place to utilize new and existing programs and coalitions to develop activities and ideas. For example:

Strategy 1: Distribute free or low-cost bicycle helmets at local events.
Strategy 2: Work with law enforcement and school officials to ensure compliance of a helmet policy.

Step Eight: Develop and Organize

Clearly identifying who will do what and when from the beginning will help the project run smoothly. Establish project goals and objectives, as well as a timeline for each aspect of the course of the project. Proper training and orientation of those involved will also make sure the project is administered consistently and runs smoothly.

Step Nine: Implement the Project

This is where the real fun begins. Once your project has been outlined and participants trained, you are ready to implement the project. Be sure to stick to your timeline and strategies, although these are not set in stone. If you should encounter a problem, then plans can be adjusted even as the project is being implemented. However, keep in mind your goals, objectives, and evaluation methods before making major adjustments.

Step Ten: Evaluate

Evaluation of your efforts should occur before and after implementation of each injury prevention strategy. Evaluation measures can focus on the process of implementing the project (i.e., number of smoke alarms distributed) or the outcome of the project interventions (i.e., decrease in number of injuries, increase in smoke alarm prevalence). Even the most basic pre- and post-analysis and evaluation of your efforts can be important in acquiring funds and resources, promoting the validity of your injury prevention efforts, and helping to determine if your project was a success.

Reference

1. Fowler CJ, Dannenberg AL. *The Revised Intervention Decision Matrix* © Johns Hopkins Bloomberg School of Public Health. 2003. Baltimore, Maryland.

► Where You Can Go

Data should serve as the foundation of community injury programs and a compass to direct local injury prevention efforts. Data can be used to:

1) Identify and understand injury problems.
2) Design, implement and evaluate injury prevention projects.
3) Educate the public and policy makers.

Oklahoma Data

Oklahoma State Department of Health

- ***Injury Prevention Service***
  405/271-3430
  www.health.state.ok.us/PROGRAM/injury
  www.health.state.ok.us/stats/injury

Injury Surveillance System

The Injury Prevention Service (IPS) has Oklahoma data on hospitalized and fatal traumatic brain injuries, spinal cord injuries, burns, and drownings/near drownings, suicides and suicide attempts, and fatal occupational injuries. Data is also available on emergency department visits, hospitalized and fatal intimate partner violence injuries in the Oklahoma City metropolitan area. Injury surveillance data are collected from the Office of the Chief Medical Examiner, Vital Statistics, and from abstracting medical records at all hospitals in the state. Additional sources of data include emergency departments, emergency medical services, rehabilitation centers, local fire departments, the State Fire Marshal, the Department of Public Safety, the Oklahoma Lake Patrol, the Occupational Safety and Health Administration, and a newspaper clipping service.

Trauma Registry

All licensed hospitals with emergency departments are required to report data to the IPS regarding major trauma cases (includes serious injuries that require hospitalization of greater than or equal to 48 hours, ICU care, surgical intervention, death, trauma team activated, or transfers of major trauma from one hospital to another hospital).

- ***Health Care Information***
  405/271-6225
  www.health.state.ok.us/program/hci
  www.health.state.ok.us/stats/injury

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) monitors risk behaviors associated with the leading causes of injury and death among Americans 18 years of age and older. The survey consists of standard questions the Centers for Disease Control and Prevention (CDC) developed to facilitate state-by-state comparisons. Injury-related data in BRFSS include smoke alarm use and bicycle helmet use. BRFSS data can be analyzed by age, race and ethnicity, income level and education.

- ***Child and Adolescent Health Division***
  405/271-4471
  www.health.state.ok.us/program/yrbs/index.html

Youth Risk Behavior Survey

The Youth Risk Behavior Survey monitors health-risk behaviors among 9th through 12th grade students. The Oklahoma State Department of Health conducts this self-administered survey biennially, and CDC assists in analyzing the data. The survey includes several injury-related behaviors: seat belt use, driving after drinking alcohol, riding with a driver who has been drinking, wearing bicycle and motorcycle helmets, carrying a weapon to school, being in a physical fight, and attempting suicide or having suicidal thoughts. Data can be analyzed by sex, grade in school, and race and ethnicity.

Other Oklahoma Data Sources

- ***Oklahoma Highway Safety Office***
  405/523-1570
  www.dps.state.ok.us/ohso

The Oklahoma Highway Safety Office (OHSO) publishes *Oklahoma Crash Facts* each year, which includes data on fatal and nonfatal traffic crashes in Oklahoma. The OHSO also has statewide data on seat belt and car seat usage rates in Oklahoma.

National Data

WISQARS

WISQARS™ (pronounced "whiskers") is a powerful, interactive database that allows easy access to injury mortality data that can be used for research and policy decisions. Since its debut, WISQARS™—which stands for Web-based Injury Statistics Query and Reporting System—has provided researchers, policy makers, reporters and the public with customized reports about both unintentional and violent injuries. In October 2001, CDC expanded WISQARS™ to include national estimates of nonfatal injuries treated in hospital emergency departments. To access WISQARS, go to http://www.cdc.gov/ncipc/wisqars/

Fatality Analysis Reporting System

The Fatality Analysis Reporting System (FARS), managed by the National Highway Traffic Safety Administration (NHTSA), contains data about all fatal traffic crashes on public roadways within the 50 states, the District of Columbia, and Puerto Rico. FARS provides descriptions of each fatal crash reported, with more than 100 coded data elements that characterize the crash, the vehicles, and the people involved. For more information, go to http://www-fars.nhtsa.dot.gov.

National Electronic Injury Surveillance System

The National Electronic Injury Surveillance System (NEISS), operated by the U.S. Consumer Product Safety Commission (CPSC), provides injury data from inner city, urban, suburban, rural and children's hospitals. Originally, NEISS collected data only about nonfatal injuries related to consumer products and recreational activities. In July 2000, through a cooperative effort between CPSC and CDC, NEISS began collecting data about all nonfatal injuries treated in hospital emergency departments. For more information, go to http://www.cpsc.gov/library/library.html.

National Hospital Discharge Survey

The National Hospital Discharge Survey, administered by CDC's National Center for Health Statistics (NCHS), provides annual information about persons who are discharged from inpatient hospital care. NCHS gathers data annually from approximately 270,000 inpatient records acquired from a national sample of about 500 hospitals. Data include patient's age, sex, race, ethnicity, marital status and expected sources of payment; diagnosis; length of hospital stay; procedures performed; and condition at the time of discharge. For more information, go to http://www.cdc.gov/nchs/about/major/hdasd/nhds.htm.

National Crime Victimization Survey

Run by the Bureau of Justice Statistics at the Department of Justice, the National Crime Victimization Survey provides nationally representative data about the frequency, characteristics, and consequences of crime in the U.S., including violent crimes such as rape, physical and sexual assault, and homicide. Survey data include type of crime, time and location of the crime, relationship between victim and offender, characteristics of the offender, consequences of the victimization, whether the crime was reported to the police and reasons for reporting or not reporting, and offender use of weapons, drugs, or alcohol. Basic demographic information is also included. For more information, go to http://www.icpsr.umich.edu/NACJD/NCVS.

National Uniform Crime Reports

More than 17,000 city, county, and state law enforcement agencies voluntarily participate in the nationwide Uniform Crime Reports system, managed by the Federal Bureau of Investigation. Data can be broken down by geographic areas, municipalities of varying population sizes and specific cities. For more information, go to http://www.fbi.gov/ucr/ucr.htm.

National Vital Statistics System

Each state must send information about deaths that occur within its borders to CDC's National Center for Health Statistics, which manages the National Vital Statistics System. For each death—including those caused by injuries and violence—the system contains information about the decedent's age, sex, race, ethnicity and education level, as well as information about the causes of death. For more information, go to http://www.cdc.gov/nchs/nvss.htm.

What You Should Know About:

►*Motor Vehicle Injury*

National Statistics

Motor vehicle travel is the primary means of transportation in the United States. There has been much progress in reducing the number of deaths and injuries on U.S. roads and highways.[1] However, motor vehicle crashes are still the leading cause of injury death for persons 1 to 34 years of age. In 1999, more than 3 million Americans were injured and more than 42,000 were killed in motor vehicle crashes. Of those who died, approximately 5% were children, 13% teens, and 19% seniors aged 65 years and older.[2] It is estimated that an American is killed every 13 minutes in a motor vehicle crash.[3] The economic costs related to motor vehicle crashes were more than $230 billion in 2000.[4]

According to the National Highway Traffic Safety Administration (NHTSA), seven risk factors have been found to be associated with motor vehicle crashes. These include alcohol, cell phones, gender, young drivers, senior drivers, speed, and location. The greatest risk factor involves the use of alcohol. An estimated three in ten Americans will be involved in an alcohol-related crash in their lifetime.[2] In 2002, 41% of the 42,815 motor vehicle deaths were alcohol-related. This translates to an average of one alcohol-related fatality every 30 minutes.[5] For more information about alcohol-related motor vehicle crashes, see the section on What You Should Know About Impaired Driving in this manual.

The Cellular Telecommunication Industry Association reports there are more than 100 million cell phone subscribers, or more than 36% of the U.S. population. Although cell phones are convenient, their use while driving has been found to be dangerous. An evaluation by the Harvard Center for Risk Analysis estimates that the use of cell phones by drivers may result in 2,600 deaths, 330,000 moderate to critical injuries, and 1.5 million instances of property damage in the U.S. each year.[6] Cell phone users are four to five times more likely to have crashes than nonusers. The primary factor is driver

Risk Factors for Operating A Motor Vehicle

1. **Alcohol**
2. **Cell Phones**
3. **Gender**
4. **Young Drivers**
5. **Senior Drivers**
6. **Speed**
7. **Location**

inattentiveness. Cell phone units that allow the hands to be "free" offer no safety advantage.[7]

The gender and age of the driver is also an important risk factor. Male drivers are nearly three times more likely to be involved in a fatal vehicle crash than female drivers.[8] Teens represented 10% of the US population in 2002, but accounted for 14% of all motor vehicle-related deaths.[9] Per mile driven, teen drivers 16-19 years of age are 4 times more likely than older drivers to crash. About two out of every three teenagers killed in motor vehicle crashes in 2002 were males.[9] Teens are more likely than older drivers to speed, run red lights, make illegal turns, ride with intoxicated drivers, and drive after using alcohol or drugs.[10] Teens also have the lowest seat belt use, reporting only 14% use among high school students in 2001, with males and African Americans most likely to report *rarely or never wearing a seat belt.*[11] In 2000, *29*% of drivers aged 15-20 years killed in motor vehicle crashes had been drinking, 77% were unrestrained, and 43% of crashes occurred between 9 p.m. and 6 a.m.[12] The mere presence of teen passengers has been found to increase the crash risk for unsupervised teen drivers.[8]

According to the U.S. Census Bureau, seniors aged 65 years and older are one of the fastest growing segments of our population. However, increasingly these older drivers are keeping their licenses longer and driving more miles than ever before. Older people have higher rates of fatal crashes than all but the youngest drivers per mile driven. This is largely due to their increased susceptibility to injury, particularly chest injuries and medical complications, rather than an increased tendency to get into crashes.[13]

Fast cars may sell movies, but the reality is that speeding is dangerous. According to NHTSA, speeding is one of the main causes of motor vehicle crashes. Speeding was a factor in 31% of all fatal crashes, and 13,380 lives were lost in speeding-related crashes in 2003 alone.[14] Speeding reduces a driver's ability to steer safely around curves or objects in the roadway. High speed extends the distance necessary to stop a vehicle and increases the distance a vehicle travels while the driver reacts to a dangerous situation. Also, speed increases the force of impact in a crash, increasing the likely severity of the collision. For drivers involved in fatal crashes, young males are the most likely to speed.[14]

The number and type of motor vehicle crash deaths differ widely among the 50 states and the District of Columbia.[15] Western states with large rural areas typically have high fatality rates because of such factors as higher speed traffic. Reasons for state variations include differing degrees of urbanization, amounts of travel, types of travel, types of vehicles, state

laws, emergency care capabilities, weather, topography, and a variety of other factors.[15]

Oklahoma Statistics

According to Oklahoma Vital Statistics data, from 1992 to 2001, 5,990 motor vehicle occupants were killed in traffic-related events. From 1992-2000, the Oklahoma motor vehicle fatality rate was 32% higher than the U.S. rate (11.7 and 8.8 per 100,000 population, respectively).[1] In Oklahoma, traffic death rates among rural populations were 74% higher than death rates for urban populations (27.7 and 15.9, respectively). Sixty-four percent of persons who died in traffic crashes were not wearing a seat belt. From 1992 to 2001, 157 children 0-9 years of age died as a result of a motor vehicle crash; 91 deaths were among children 0-4 years of age.

The traffic fatality rate for males was almost twice that for females (27.5 and 14.2 per 100,000 population, respectively). Fatality rates were highest among teenagers, young adults, and males 75 years of age and older.

►What Works

Seat Belt Use

Seat belts are estimated to reduce the risk of death among front seat car occupants by 45% and the risk of moderate to critical injury by 50%.[16,17] Among occupants of light trucks, seat belts are estimated to reduce fatal injury by 60% and moderate to critical injury by 65%. In addition, the data suggests that seat belts may reduce hospital admissions by 65% and hospital charges by 67%. To be most effective, seat belts should be worn over the shoulder, across the chest, and low across the hips. Data also confirms the importance of all pregnant women correctly wearing seat belts.[18,19]

Car Seat Use

Motor vehicle injuries are a prominent cause of death and disability for children of all ages. The trauma causing most deaths and disabilities occurs a fraction of a second after a crash, when an unrestrained child strikes the vehicle interior. In addition to injuries in crashes, many children are injured during non-crash incidents such as striking the vehicle interior during a sudden stop, turn, or swerve. These incidents are most common among unrestrained children 1-4 years of age. Research has found that the correct use of car safety seats may reduce fatal injury by 70% among

infants less than one year of age, and 47% for toddlers (1-4 years of age) in passenger cars.[20,21] Among infants and toddlers in light trucks, car safety seats are found to reduce fatal injury by 58% for infants and 59% for toddlers.[21]

Booster Seats

Once a child outgrows a convertible car seat that fits children up to 40 pounds and 40 inches (approximately 3 years of age), parents often use a seat belt to restrain the child. However, seat belts are designed for persons 4'9" tall and weighing approximately 80 pounds (approximately 9 years of age). Belt positioning booster seats lower the risk of injuries in crashes by 59% compared to the use of vehicle seat belts.[22]

Car Seat Inspection Clinics

Studies have indicated that as many as four out of five car seats may be installed incorrectly.[23] Children may be severely injured or killed if they are improperly restrained. Common errors include facing the seat the wrong direction, using the wrong car seat for a child's height and weight, not buckling the car seat in tightly enough with the vehicle seat belt, and putting a rear-facing infant seat in front of an air bag. Car seat inspections are available through several Oklahoma organizations including the Oklahoma SAFE KIDS Coalition, Oklahoma State Department of Health, and Emergency Medical Services Authority (EMSA).

Car Seats for Children with Special Needs

Children with disabilities who are not able to sit in an approved car seat should also be properly secured. There are protective restraints available for children with special needs such as premature or low birth weight infants, small children in hip spica casts, larger children who have full body casts, and children with poor trunk and head control.

Occupant Protection Counseling Through Health Care Providers

Pediatricians and public health nurses are likely to have several opportunities to provide occupant protection counseling. During counseling, parents and caregivers should be informed about the risks associated with children not being restrained while traveling in a motor vehicle.

Physician Evaluation of Senior Drivers

Medical conditions and poor vision are commonly cited as reasons for seniors to stop driving. Physicians are respected members of a community and often considered a trusted, extended member of the family. To assist doctors in evaluation, the American Medical Association (AMA) has a guide available with a checklist for doctors to test patients' vision and motor skills. The guide also offers strategies for best persuading impaired older drivers to retire from the road. Alternatives for senior drivers, such as larger mirrors, hand gears and a steering wheel knob for arthritic patients, are also given. For more information on the Physician's Guide to Assessing and Counseling Older Drivers go to http://www.ama-assn.org/ama/pub/category/10791.html.

Graduated Driver Licensing

Graduated driver licensing (GDL) systems are designed to phase in beginning drivers to full driving privileges through a three-stage process as they mature and develop their driving skills, instead of the traditional approach in which a young driver gets unrestricted driving privileges after passing a test.[24-26] Evaluations of these systems have demonstrated crash reduction impacts of up to 16% among Oregon males,[27] 5-9% in Maryland and California,[25] 9% in Canada,[27] and 8% in New Zealand.[28] In North Carolina, the number of fatal crashes among 16 year-old drivers dropped by 57% from 1996 - 1999, and the number of nonfatal injury crashes dropped by 27%.[29] In Michigan, overall crash risk for 16 year-olds was reduced by 25%.[30] Model GDL systems have a minimum age of entry (usually 15 1/2) and require one to two full years to complete a 3-tiered licensing program: learning stage, intermediate stage, and full licensure. Graduated licensing ensures that the initial driving experience is accumulated under lower-risk conditions, usually imposing a nighttime driving restriction and passenger limits for young novice drivers. In a 1994 report to Congress, NHTSA showed that driver's education alone did not significantly reduce crashes among teenagers.[31]

Limiting Cellular Phone Use While Driving

Based on a broad range of estimates for cell phone-related crashes, further scientific study is needed to determine the actual extent of such injuries. Limiting cell phone use to hands-free devices may not be enough. Current data suggests that legislative initiatives restricting handheld devices but permitting hands-free devices are not likely to reduce interference from the cognitive processes involved with maintaining a cell phone conversation.

►What You Can Do

Distribute Free Car Seats and Educate Parents

Communities should make available free car seats and booster seats for families with children less than 6 years of age. Car seats can be distributed at county health departments, hospitals, Indian Health Services and tribal health clinics, and other agencies and organizations. Persons distributing car seats should attend either a one-day training class or the NHTSA four-day certification workshop. The car seat program should include parental education about how to install and use the car seats and booster seats. Providers should give up-to-date information about the availability of special needs car seats to families who have children with disabilities.

Provide Car Seat Inspection Clinics

Communities should partner with other organizations (e.g., SAFE KIDS, etc.), car dealerships, or media to offer car seat inspection clinics.

Encourage Graduated Driver Licensing Programs

Communities should encourage graduated driver licensing programs that have a minimum age of entry and require one to two full years to complete a 3-tiered licensing program.

Consider Cellular Phone Use Legislation

The precise effects of cell phone use on public safety are unknown. However, because of the possible increase in risks associated with the use of cell phones while driving, several states have proposed or enacted legislation to limit cell phone use while operating a motor vehicle. Communities should consider enacting legislation restricting cellular phone use while driving.

►Where You Can Go

The following organizations can provide information about motor vehicle crashes and injuries as well as links to other organizations and web sites.

State

● Oklahoma Highway Safety Office
405/523-1570
www.dps.state.ok.us/ohso

● Injury Prevention Service
Oklahoma State Department of Health
405/271-3430
www.health.state.ok.us/PROGRAMS/injury

● Oklahoma SAFE KIDS Coalition
405/271-5695
www.oksafekids.org

National

● National Highway Traffic Safety Administration
www.nhtsa.dot.gov

● National Center for Injury Prevention and Control
www.cdc.gov/injury

● National SAFE KIDS Campaign
www.safekids.org

● Safe Ride News
www.saferidenews.com

● Safe USA
www.safeusa.org

● Safety Belt Safe USA
www.carseat.org

● Boost America
www.boostamerica.org

● Children's Safety Network
www.childrenssafetynetwork.org

● Insurance Institute for Highway Safety
www.iihs.org

● Indian Health Service
www.ihs.gov/MedicalPrograms/InjuryPrevention/index.cfm

Local

Highway Patrol
Police Departments

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What You Should Know About:

►*Impaired Driving*

National Statistics

Drunk driving is known in some states as DUI (driving under the influence), DWI (driving while intoxicated) and OWI (operating while intoxicated). Regardless of what you choose to call it, impaired driving continues to be a major public health problem. In 2002, NHTSA estimated that 35% of all traffic deaths occurred in crashes in which at least one driver or nonoccupant had a blood alcohol concentration (BAC) of 0.08 percent or more and that any alcohol was present in 41% of all fatal crashes in 2002.[1] Nearly two-thirds of children under 15 who died in alcohol-related crashes between 1985 and 1996 were riding with a drinking driver. More than two-thirds of the drinking drivers were old enough to be the parent of the child who was killed, and fewer than 20% of the children killed were properly restrained at the time of the crash.[2]

Blood alcohol concentration is the standard measure of intoxication. A BAC of 0.10% means a level of 0.10 grams of pure alcohol per 100 milliliters of the person's blood. As BAC increases, coordination, reasoning, and balance decrease. On average, alcohol is metabolized by the liver at the rate of one drink per hour. A BAC as low as 0.02% has been shown to affect driving ability.[3] The probability of a crash begins to increase significantly at 0.05% BAC and climbs rapidly after about 0.08%.[3] For most people, a BAC of 0.05% requires only three or more drinks in an hour.

The economic costs of alcohol-related crashes in 2000 alone were more than $51 billion. Included in these costs are lost productivity, medical costs, legal and court costs, emergency service costs, insurance administration costs, travel delay, property damage, and workplace losses.[4]

Drunk driving is not just an adult problem. It is involved in one-fifth of motor vehicle-related child fatalities and serious injuries. [5,6] Alcohol involvement in crashes peaks at night and is higher on weekends.[3,7]

From 1991-2001, intoxication rates decreased for drivers in all age groups involved in fatal crashes,[7] however, that progress has stalled in recent years.[8] Alcohol involvement continues to contribute to a significant number of motor vehicle crashes among teenagers.[6,9]

Did You Know?

One 12-ounce can of most beers,
One 4-ounce service of most wines, and
One cocktail made with 1.2-ounce of 80-proof spirits contain identical amounts of alcohol.

Oklahoma Statistics

From 1992 through 2001, the Oklahoma Office of the Chief Medical Examiner performed BACs on 79% of the traffic fatalities among persons older than 14 years of age; 38% of those tested had positive BACs. Forty-seven percent of males tested had a positive BAC compared to 22% of females. Sixty-one percent of Native Americans tested had a positive BAC compared to 38% of African Americans and 36% of whites. Alcohol is a factor in 24% of Oklahoma crash costs.[10] Alcohol-related crashes in Oklahoma cost the public more than $1.4 billion in 1999, including more than $0.6 billion in monetary costs and almost $0.8 billion in quality of life losses. People other than the drinking driver paid $0.9 billion of the alcohol-related crash bill. Alcohol-related crashes account for an estimated 18% of Oklahoma's auto insurance payments. Reducing alcohol-related crashes by 10% would save $28 million in claims payments and loss adjustment expenses.[10]

►What Works

Lowering the Legal BAC Limit

Scientific evidence shows that driving skills begin to deteriorate markedly at 0.05 BAC.[3] In Oklahoma, the legal BAC limit is 0.08. Lowering the legal BAC limit to between 0.05 and 0.08 has proven successful in reducing alcohol-related MVC injuries in many states.[11,12] The American Medical Association and many experts have called for lowering the legal definition of impaired driving to 0.05.

Administrative License Revocation Law (ALR)

Prompt suspension of the driver's licenses of people who drive while intoxicated is an effective measure for preventing impaired driving. Oklahoma currently has a law that requires the immediate surrender of a driver's license if the driver refuses to submit to a chemical test or if the

test records a BAC greater than 0.08. Refusal to be tested results in a 6-month license suspension; a BAC greater than 0.10 results in a 90-day suspension. Studies have shown that ALR laws have been associated with a statistically significant decrease in fatal crashes.[13]

Enforcement of Minimum Legal Drinking Age Laws

In Oklahoma, a person must be 21 years of age to purchase alcohol. Increasing the minimum age for alcohol purchase to 21 has been shown to decrease the number of fatal alcohol-related motor vehicle crashes among teenagers.[11] However, injury prevention specialists across the country agree that for the law to be effective, it must be enforced.

Implementation of "Zero Tolerance" Laws for Persons Under 21

Oklahoma currently has a "zero tolerance" law, which prohibits drivers less than 21 years of age from driving with any measurable amount of alcohol (usually above 0.02) in their system. A zero tolerance law allows a law enforcement official to require a breath test from a driver less than 21 years if the officer has probable cause to believe the driver has been drinking. If the driver refuses the test or the test reveals any measurable alcohol level, then the driver is subject to sanctions, including loss of his or her driver's license.[11]

Sobriety Checkpoints

Sobriety checkpoints are designed to systematically stop drivers to assess their level of alcohol impairment. The goal is to deter alcohol-impaired driving by increasing the perceived risk of arrest. Sobriety checkpoints have been effective in reducing alcohol-impaired driving, alcohol-related crashes, and associated fatal and nonfatal injuries in a variety of settings and among various populations.[11]

Dram Shop Laws

Dram shop laws make liable persons who serve alcoholic beverages to minors or to persons already "obviously" or "visibly" intoxicated. Using undercover police officers to enforce Oklahoma's law against serving alcohol to intoxicated bar and restaurant patrons would reduce alcohol-related crash fatalities and save an estimated $20 per licensed driver.[4]

Server Training and Designated Driver Programs

Server training programs teach waiters, waitresses, and bartenders how to identify customers who are already intoxicated so they can avoid serving intoxicated customers. High-quality, face-to-face training, when accompanied by strong management support, is effective in reducing the level of intoxication among patrons.[11]

►What You Can Do

Actively Enforce Laws Related to Impaired Driving

Local law enforcement agencies should actively enforce all laws associated with impaired driving, including: a) the Administrative License Revocation Law; b) minimum legal drinking age law; c) zero tolerance law; and d) dram shop laws.

Conduct Workshops

Communities should conduct workshops for judges and prosecutors to help familiarize them with the current Oklahoma laws and problems associated with impaired driving.

Increase Community Awareness of Costs

Communities should educate residents about the costs of drunk driving and the benefits of a lower BAC law.

►Where You Can Go

The following organizations can provide information about reducing alcohol-related crashes as well as links to other organizations and web sites.

State

- Oklahoma Highway Safety Office
  405/523-1570
  www.dps.state.ok.us/ohso

- Injury Prevention Service
  Oklahoma State Department of Health
  405/271-3430
  www.health.state.ok.us/PROGRAM/injury

National

- National Highway Traffic Safety Administration
  www.nhtsa.dot.gov

- National Center for Injury Prevention and Control
  www.cdc.gov/ncipc

- Insurance Institute for Highway Safety
  www.iihs.org

Local

Highway Patrol
Police Department

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What You Should Know About:

►*Pedestrian Injury*

National Statistics

According to the Insurance Institute for Highway Safety, pedestrians are the second largest category of motor vehicle deaths after occupants, accounting for 11% of motor vehicle deaths. According to NHTSA, 4,808 pedestrians were killed in traffic crashes in the United States in 2002 and 71,000 were injured. Almost one-fourth of those fatalities were children between the ages of 5 and 9.[1] On average, a pedestrian is killed every 109 minutes and injured every 7 minutes.

The physical vulnerability of pedestrians is a major factor in their injury. The most serious pedestrian injuries often result from pedestrians being thrown onto hoods, windshields, or tops of vehicles.[2]

Injuries and fatalities involving pedestrians occur most frequently in three distinct groups of people: young children (between the ages of 5-9), older adults (age 70+), and persons impaired by alcohol.[3] Pedestrian deaths constitute a third of traffic deaths among children 3-9 years of age.[2] Children 10-15 years of age have the highest nonfatal injury rates.[2]

Seventy percent of pedestrian deaths in 2002 occurred in urban areas.[2] However, the ratio of deaths to injuries is higher in rural areas because of higher impact speeds on rural roads.[4] Fatal pedestrian motor vehicle collisions occur most often between 6 p.m. and midnight.[2] Pedestrian deaths are more likely to occur on Friday, Saturday or Saturday than on other days.[2] In 2002, alcohol involvement was reported in 46% of traffic crashes that resulted in pedestrian deaths.[1]

Oklahoma Statistics

According to Oklahoma State Department of Health Vital Statistics data, from 1992 through 2001, there were a total of 568 pedestrian deaths. Pedestrian death rates were highest for Native Americans 25-44 years of age. Time of death varied among age groups. Among children 0-4 years of age, 61% of deaths occurred between 2 p.m. and 9 p.m., while nearly

half of deaths among persons 25 and older occurred between 6 p.m. and 2 a.m.

According to State Medical Examiner data, 78% of pedestrians who died were tested for BAC; 42% had positive levels. More than 50% of persons 15-54 years of age had positive BAC levels. Fifty-three percent of all persons tested for BAC who died between 7 p.m. and 2 a.m. had positive levels.

►What Works

Roadway countermeasures

Roadway countermeasures such as: 1) converting two-way streets to one-way streets; 2) installing adequate roadway lighting; 3) requiring sidewalks be constructed in new rural and suburban housing subdivisions; 4) installing barriers to physically separate pedestrians from vehicles; 5) installing pedestrian crossing signs in unusually hazardous locations; and 6) utilizing crossing guards in school zones have shown promise in reducing the number of pedestrian injuries.[4]

►What You Can Do

Implement Roadway Countermeasures

Communities should consider implementing roadway countermeasures such as the ones listed above

Collaborate With Cardiovascular Programs

Work with cardiovascular programs to encourage walking as a form of exercise. Sponsor events/campaigns such as "Walk Your Child to School Day." Use the opportunity to make note of hazards (e.g., sidewalks cracked, unsafe neighborhoods, etc.) and present to city leaders with recommendations for improvements.

Increase Signal Time

Communities should consider resetting traffic signals to allow more time for street crossing.

Work With City Planners

Encourage local officials, designers, and planners to enhance pedestrian accessibility and safety when building or remodeling schools, recreational sites, and businesses.

Utilize Walkability Checklists

Sponsored by NHTSA, the Walkability Checklist is a tool with insightful questions that allow communities to evaluate a neighborhood's walkability. In addition to the questions, the Checklist provides both immediate answers and long-term solutions to your neighborhood's potential problems. The checklist is available for download at http://www.walkinginfo.org/cps/checklist.htm.

►Where You Can Go

The following organizations can provide information about reducing pedestrian deaths and injuries as well as links to other organizations and web sites.

State

- Injury Prevention Service
  Oklahoma State Department of Health
  405/271-3430
  www.health.state.ok.us/PROGRAM/injury

- Oklahoma SAFE KIDS Coalition
  405/271-5695
  www.oksafekids.org

- Oklahoma Highway Safety Office
  405/523-1570
  www.dps.state.ok.us/ohso

National

- National SAFE KIDS Campaign
  www.safekids.org

- National Highway Traffic Safety Administration
  www.nhtsa.dot.gov

- National Center for Injury Prevention and Control
  www.cdc.gov/ncipc

- Pedestrian and Bicycle Information Center
  www.bicyclinginfo.org

- National Center for Bicycling and Walking
  www.bikewalk.org

- Insurance Institute for Highway Safety
  www.iihs.org

- Indian Health Service
  www.ihs.gov/MedicalPrograms/InjuryPrevention/index.cfm

Local

Police Department
County Health Department

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What You Should Know About:

►*Bicycle Injury*

National Statistics

Soon after a blacksmith by the name of Kirkpatrick MacMillan invented the bicycle, it became apparent that a bicyclist needed something to protect his or her head during a crash. Head injury is the primary cause of death and serious disability among victims of bicycle crashes.[1,2] Additionally, one-half to two-thirds of persons hospitalized following a bicycle crash have injuries to the head, accounting for 12,000 hospitalizations per year;[1,3,4] approximately 181,000 persons are treated in emergency departments for bicycle-related head injuries each year,[3] or, one emergency department-treated head injury occurs every 3 minutes. Approximately 85% of bicycle-related deaths are caused by head injury;[1] accounting for 600 bicycle-related head injury deaths each year.[3] This translates to one head injury death every 15 hours.

Bicycle-related deaths rise rapidly at 5 years of age and are highest among children 12 years of age.[5] Almost one-fourth (22%) of bicyclists killed in traffic crashes in 2002 were between 5 and 15 years of age.[6] Deaths of older bicyclists are an increasing problem. Seventy-six percent of bicycle deaths in 2002 were to riders 16 years and older. This compares with 32% in 1975.[7] Sixty-eight percent of bicyclists were killed in urban areas as compared to 32% in rural areas in 2002.[7] Eighty-five percent of bicyclists killed in 2002 were not wearing helmets.[7]

Oklahoma Statistics

In Oklahoma, bicycle-related brain injuries occur most commonly among children 5-12 years of age, accounting for 56% of injuries from 1992-2002. During that time, bicycle-related injuries were the third leading cause of brain injuries among children 5-9 years of age and the leading cause among children 10-12 years. Among the 5-12 age group, males (rate 13.3 per 100,000 population) were more than twice

as likely than females (rate 6.1 per 100,000 population) to suffer a bicycle-related brain injury. Whites had the highest rates followed by African Americans and Native Americans (rates 9.6, 9.4, and 7.0 per 100,000 population, respectively). Thirty-three percent of injuries were known to be the result of the bicyclist being hit by a motor vehicle or the bicyclist hitting a parked vehicle. Seventy-nine percent of injuries occurred from March through September. Sixty-three percent of the injuries were known to have occurred from 3 p.m. to 8 p.m.

Reported bicycle helmet use among children continues to increase in Oklahoma. In 2001, helmet use among children was reported to be 28% compared to 6% in 1992.

►What Works

Bicycle Helmet Campaigns

Bicycle helmets have been found to be 85% to 88% effective in reducing or preventing brain injuries.[8] If every person wore a helmet while riding, one life would be saved every day, and one brain injury would be prevented every 4 minutes.[3] Organized, community-wide bicycle injury prevention programs focusing on increasing bicycle helmet use have shown promise. In 1987, a community-wide bicycle helmet program was implemented in Seattle. Helmet use among children was 5% at the time and increased to 62% in 1993.[9]

In Oklahoma, community-based bicycle helmet programs have been implemented since 1993. Reported bicycle helmet use between 1992 and 2000 more than quadrupled among children statewide. There was a 32% decrease in bicycle-related traumatic brain injuries among children 5-12 years of age from 1992-2000. While all of the factors that contributed to this decline are not known, increasing education and helmet use in program communities across the state likely contributed to the decline in injuries.

Bicycle Safety Education

Interventions based on increasing helmet use through education have been successful when done properly.[10] Often, children are taught how to ride a bicycle, but not taught basic traffic safety rules.

The OSDH Injury Prevention Service has developed *Breaking Away* and the *Oklahoma PTA Guide to Bicycle Safety* to assist teachers and school personnel in teaching bicycle safety. Additionally,

the Injury Prevention Service has developed the *Oklahoma Elementary School Injury Prevention Education: The Subject-Integrated Safety Curriculum for Teachers* that contains lessons on bicycle safety for grades K-5. The Oklahoma SAFE KIDS Coalition has information available about how to conduct bicycle rodeos.

Bicycle Paths and Lanes

Because the majority of bicycle-related deaths occur on roadways, many communities have constructed bicycle paths and lanes in an attempt to separate motor vehicle and bicycle traffic and to provide bicyclists with a road surface free from obstruction and potholes. Establishing clearly designated bicycle facilities may provide safer travel for cyclists. Studies reveal that the presence of a striped bike lane or paved shoulder dramatically increases the feeling of comfort and safety of riders, as well as increasing the number of riders. The Department of Transportation has funding available to communities to assist in constructing bicycle and pedestrian lanes/paths.

Bicycle Safety Counseling Through Health Care Providers

Physicians and other health care providers are often viewed as the most credible source of health information. Pediatricians and public health nurses are likely to have several opportunities to provide bicycle safety counseling. During counseling, parents should be informed about the need for bicycle helmets when riding and the risks associated with children riding bicycles which are inappropriately equipped or too large. The child should be able to place the balls of both feet on the ground when sitting on the seat with the hands on the handlebars. Additionally, young children's bicycles should be equipped with coaster brakes because young children do not have the strength and coordination to use hand brakes.

Bikeability Checklist

Sponsored by NHTSA, the Bikeability Checklist is a tool utilizing seven simple questions to help in rating how friendly communities are for bicycling, identify problem areas, and find short- and long-term solutions to improve bikeability scores. The checklist is available for download at http://www.bicyclinginfo.org/cps/checklist.htm.

►What You Can Do

Make Bicycle Helmets Available Free or at Reduced Cost

Helmets can be distributed at county health departments, Indian Health Service clinics, schools, community events, etc. Potential funding sources

to purchase helmets may include grant funds (Oklahoma Highway Safety Office), injury prevention programs (Oklahoma SAFE KIDS Coalition), local civic groups (Lions, Kiwanis, etc.), local professional organizations (American Academy of Pediatrics, business leaders' associations), and local businesses or foundations. The helmets can be given away or sold at substantially reduced cost; monies collected can be used to purchase more helmets. Communities can also encourage local retailers to distribute coupons offering a discount on helmets.

Implement Bicycle Safety Education Programs in Schools

Work with schools and Parent Teacher Associations to implement an injury prevention curriculum that includes lessons on bicycle safety, as well as information about bicycle helmets, bicycle selection, and traffic safety rules.

Encourage Bicycle Safety Education by Health Care Providers

Local health departments, Indian Health Service clinics, physicians, and other health care providers should utilize opportunities during existing clinics/visits (e.g., WIC, well-child, immunization, guidance, etc.) to educate clients about the risk of bicycle-related brain injuries and bicycle safety. Clients should be provided information about where helmets are available in the community.

Promote Bicycle Paths and Lanes

Communities should work with city and residential planners in developing plans for constructing and maintaining bicycle paths and lanes.

Promote Local Bicycle Helmet Legislation

Local school boards should consider requiring helmet use for all children riding bicycles to school. Communities should consider enacting local ordinances requiring bicycle helmet use.

Increase Awareness of Bicycle Traffic Rules

Communities should work with local law enforcement to educate residents about bicycle traffic rules.

Sponsor Local Events & Campaigns

Sponsor events/campaigns such as "Bike With Your Child to School Day." Use the opportunity to make note of hazards (e.g., sidewalks cracked, unsafe neighborhoods, etc.) and present to the city leaders with recommendations for improvements.

►Where You Can Go

The following organizations can provide information about reducing bicycle-related crashes as well as links to other organizations and web sites.

State

- State Injury Prevention Service
  Oklahoma State Department of Health
  405/271-3430
  www.health.state.ok.us/PROGRAM/injury

- Oklahoma SAFE KIDS Coalition
  405/271-5695
  www.oksafekids.org

- Oklahoma Highway Safety Office
  405/523-1570
  www.dps.state.ok.us/ohso

- Indian Health Service, Oklahoma City Area
  405/951-3800
  www.ihs.gov/FacilitiesServices/AreaOffices/oklahoma/index.asp

- Oklahoma Bicycle Coalition
  www.oklahomabicyclecoalition.com

National

- National SAFE KIDS Campaign
  www.safekids.org

- National Highway Traffic Safety Administration
  www.nhtsa.dot.gov

- National Center for Injury Prevention and Control
  www.cdc.gov/ncipc

- Safe USA
  www.safeusa.org

- Pedestrian and Bicycle Information Center
  www.bicyclinginfo.org

- National Center for Bicycling and Walking
  www.bikewalk.org

- Safe Ride News
  www.saferidenews.com

- Children's Safety Network
  www.childrenssafetynetwork.org

- Insurance Institute for Highway Safety
  www.iihs.org

- Indian Health Service
  www.ihs.gov/MedicalPrograms/InjuryPrevention/index.cfm

Local

Police Department
County Health Department
Bike Dealers
Civic Organizations

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What You Should Know About:

►Unintentional Poisoning Injury

National Statistics

A poisoning exposure can be defined as the ingestion, injection, inhalation, absorption or contact with a substance that produces a toxic effect or bodily harm. Unintentional drug/poison exposures are the third leading cause of unintentional injury deaths, following motor vehicle crashes and falls.

In 2000, poison control centers reported approximately 2.2 million poison exposures.[1] The majority of these exposures (90%) occur in the home and more than half (53%) involve children younger than six years of age.[1] Children, especially those under age 6, are more likely to have unintentional poisonings than older children and adults.[1]

The most common poison exposures for children were ingestion of household products such as cosmetics and personal care products, cleaning substances, pain relievers, foreign bodies, and plants.[1] Among children, more deaths are caused by carbon monoxide and adult formulations of iron than any other poisonous exposures.[2] For adults, the most common poison exposures were pain relievers, sedatives, cleaning substances, antidepressants, and bites/stings.[1]

National data show that males have nearly three times the number and rate of unintentional drug/poisoning deaths than females.[3] Individuals between the ages of 35 and 44 years experience the largest number of fatal unintentional drug/poison exposures, averaging 7.5 deaths per 100,000 population. African Americans have consistently had the highest rate of unintentional drug/poisoning deaths of any racial group until 1998 when American Indian/Alaska Natives surpassed them.[3]

Oklahoma Statistics

In Oklahoma, unintentional poisonings from all sources are the seventh leading cause of unintentional injury deaths. According to the Oklahoma Office of the Chief Medical Examiner, there were 1,087 Oklahomans who died from 1987-2001 as a result of an unintentional drug or poison exposure (excluding deaths involving illicit drugs used alone or in combination with another drug/poison). Comparing deaths from 1987-1989 and 1999-2001, the number of deaths increased nearly 195%. Medication-related deaths account for nearly 60% of all unintentional drug/poisoning deaths. The annual average number of medication-related deaths from 1999-2001 (103) was more than seven times higher than the annual average number of deaths from 1987-1989. The leading types of medications found in the decedents' bloodstream were narcotic analgesics (74%), anti-anxiety (19%), tricyclic antidepressants (TCA) (14%), muscle relaxants (10%), non-narcotic analgesics (7%), and hypnotic/sedatives (6%). The most common narcotics found in the decedents' bloodstream were methadone, propoxyphene, and hydrocodone.

Males had more deaths in all drug/poison categories than females, including a rate five times higher in deaths due to poisons and inhalants, and four times higher among alcohol poisonings.

The average annual rates among whites and Native Americans were nearly equal (2.3 and 2.4 deaths per 100,000, respectively), while African Americans had the lowest drug/poison-related death rate (1.0 deaths per 100,000). The types of drugs/poisons used by each race varied as well. Whites had the highest rates in the medication and CO categories, while Native Americans had significantly higher rates of alcohol- and inhalant-related poisoning deaths than either of the other racial groups (2.5 and five times higher, respectively).

Medications were the leading cause of all drug/poison-related deaths in every age group except for persons age 65 years and older. In this age group, more deaths occurred as a result of CO exposure than any other cause. The second leading cause of drug/poison-related deaths, for most age groups, was alcohol intoxication. Of the five major categories of unintentional drug/poison-related deaths (medication, alcohol, carbon monoxide, inhalants, and poisons), each had a different age group that led with the highest average annual rate. The 35-44 year age group had the highest rate of medication deaths (3.5 deaths per 100,000 population), while the 45-54 year age group led the alcohol category with 1.3 deaths per 100,000 population. The 65 years and over group had the highest rate of carbon monoxide deaths (0.7 deaths per 100,000); the 25-34 year age group had the most inhalant deaths (0.3 deaths per 100,000 population;

and the 15-24 year age group led the poisons category with 0.2 deaths per 100,000 population.

Among persons 14 years and older, alcohol was a contributing factor in 40% (422/1058) of unintentional drug/poison-related deaths. Among Native Americans, alcohol was a contributing factor in 60% (54/90) of unintentional drug/poison-related death cases, compared to 50% (19/38) among African Americans, and 37% (335/910) among whites.

►What Works

Poison Control Centers

Poison control centers have consistently proven to be cost-effective tools in reducing and managing poison exposures.[4-6] Poison control centers are typically staffed on a 24-hour basis, 365 days a year by toxicologists and specialists in poison information who respond to calls from the general public as well as health care providers for immediate information and treatment advice about poisonings. These specialists may provide emergency advice, parental and caregiver instructions for managing simple exposures at home, and recommend hospital evaluation for cases involving serious exposure. Every public call to a poison control center has been shown to save $175 in other medical spending.[4] In fact, treatment of poison exposures generally costs twice as much without the services of a regional poison control center as with such assistance. Maintaining funding for poison control centers is a key element in poison prevention. By maintaining appropriate funding levels and expanding services, poison control centers can increase awareness of unintentional poisonings among children and adults, as well as reduce the morbidity, mortality, and associated costs.[4-6]

Poison Prevention Counseling/Education

Effective counseling by pharmacists, physicians, nurses, or poison control specialists can reduce medication errors, dispensing errors, reduce the use of old medications, and decrease the number of childhood poisonings.[7-11]

Poison prevention counseling and education can cover a variety of issues affecting parents and caregivers, for persons taking newly prescribed medications, or when purchasing over- the- counter medicines.

Poison Prevention Instructor Training Program/Train-the-trainer Program

Community-based programs and projects are often effective means of targeting specific groups of people and efficient ways to spread important and/or detailed information. Poison prevention has based many interventions on such a community-based approach, particularly with the instructor training programs that are being adapted and supported by various poison control centers across the country. Train-the-Trainer programs are designed to instruct key community members on how to conduct successful poison prevention programs in their own communities. Using a comprehensive training manual, participants are instructed on how to discuss all aspects of poisoning risk factors and prevention measures.[12,13] These programs are designed to instruct key community members on how to conduct successful poison prevention programs in their own communities. While these programs have not been formally evaluated, they have received local support as being logistically and economically feasible options for effective poison education. For more information, contact the Oklahoma College of Pharmacy at www.oklahomapoison.org/

Quick Access to Antidotes

Unintentional poisonings can occur from a wide variety of substances and exposures, each one with its own specific ways of prevention and avoiding harm. However, there are general modifications that can be made to homes or other social environments that reduce one's risk of exposure or increase one's level of preparedness in the event of an exposure. For example, having quick access to certain antidotes is critical in minimizing the damage done by a poisonous substance. In many cases, this access simply means having activated charcoal and ipecac syrup on hand in the home. Once instructed by a health professional to administer such an agent, precious time can be saved if it is already available.[14]

Environmental Modifications

Important preventive measures include installing and maintaining carbon monoxide detectors, the storage of poisonous products and medications in locked closets or cabinets, carefully reading directions on medications and household products, keeping substances in their original containers, removing lead-based paint from homes and buildings, buying products in child-resistant packaging, cooking and preparing foods properly, and learning about dangerous plants and insects in the area.[14]

Child Resistant Packaging

The Unites States Poison Prevention Packaging Act (PPPA) of 1970 was enacted to prevent young children from accidentally ingesting hazardous substances. The law requires toxic, corrosive, or irritative substances to be packaged in such a way that it will be difficult for children less than 5 years to open them, yet not difficult for adults to open. However, because its effectiveness is limited, child resistant packaging should be considered as only one approach to comprehensive poisoning prevention and education efforts.[15]

Carbon Monoxide Detectors

Carbon monoxide detectors are as important in any living space as smoke alarms, and a proven prevention strategy for reducing the chances of a fatal poisoning.[16] Carbon monoxide detectors can also be installed in boats and recreational vehicles. Carbon monoxide detectors are designed to sound an alarm before potentially life-threatening levels of CO are reached. Experts recommend choosing a CO detector that meets the Underwriters Laboratory (UL) 2034 Standard (1998 revision), has an 85-decibel alarm, a digital display to check that the detector is continually monitoring CO levels, and a "Test/Reset" button to check that the alarm is functioning properly.

Increase Knowledge of Over-The-Counter Medications

Over-the-counter medications (OTCs) are commonly used by consumers and are often preferred over prescription medications for their cost and convenience. The public now has access to a variety of medications that were previously only available through prescription.[17] Doctors, nurses, and pharmacists must collaborate in order to provide much needed guidance to the general public. The development of such a strategy should include a shared vision between medical professions about their concerns with OTCs, accurate reporting of adverse events associated with OTCs, and development of a policy initiative to address OTCs usage.[18] The need for medical professionals to give information on proper dosage and administration of OTCs and to utilize new technologies to increase patient knowledge of drug interactions provides unique opportunities for preventing future unintentional medication-related poisonings.[19,20]

Reducing the Overuse of Medications (Polypharmacy)

The use of medications usually benefits patients, but when medications are administered unnecessarily, the effects can be detrimental. Older adults represent an intended group for medication prescription and consumption, and estimates suggest that 25 to 40 % of all medication

prescriptions are written to older adults.[21] Developing a comprehensive medication assessment that includes a thorough drug history and assessment would be a valuable tool to be used by medical professionals to reduce the number of medications taken and offer greater understanding of how prescribed medications interact. The implementation of such a strategy would help reduce adverse events and deaths associated with multiple medication consumption.

►What You Can Do

Campaigns to Increase Awareness of Poison Control Services

Due to recent efforts aimed at improving access, Americans can now use a single toll-free phone number 1-800-222-1222 to reach a poison control center anywhere in the nation. Callers dialing the number are automatically linked to the closest poison center. Advise families to post the telephone number for poison control near their phone, in a place where all family members would find it quickly in an emergency.

Campaigns to Increase Awareness of the Effectiveness of Carbon Monoxide Detectors

Public awareness campaigns should focus on the warning signs of CO poisoning, the effectiveness of carbon monoxide detectors, as well as the need to have them properly installed and maintained in every home.

Expand and Implement Poison Prevention and Medication Safety Education Programs

Comprehensive prevention measures are needed that target specific age groups and address appropriate high-risk poison exposure behaviors. Collaborate with the medical community, including physicians, nurses, and pharmacists to promote safe consumption of medications. Partner with senior citizen organizations and/or grandparents-raising-grandchildren support groups to educate about proper medication usage and storage.

Provide Training for Public Health Nurses

Make the train-the-trainer program available to public health nurses and utilize their expertise to train other county health department employees as well as educate persons who visit the clinic.

Conduct Home Inspections

Partner with other programs (e.g., home health care, head start, etc.) that make home visits to develop a home inspection checklist that identifies

and remedies possible poison exposures and adverse events associated with multiple medication usage.

Distribute Carbon Monoxide Detectors

Work in conjunction with the local fire department and other groups to distribute alarms through the fire department or by canvassing high-risk areas and distributing and/or installing detectors. Carbon monoxide detectors may be purchased in bulk amounts at reduced pricing.

►Where You Can Go

The following organizations can provide information about unintentional poisoning injuries as well as links to other organizations and web sites.

State

- Injury Prevention Service
  Oklahoma State Department of Health
  405/271-3430
  www.health.state.ok.us/PROGRAM/injury

- Oklahoma SAFE KIDS Coalition
  405/271-5695
  www.oksafekids.org

- Oklahoma Poison Control Center
  800/ 222-1222
  405/ 271-1122 TDD/TTY

National

- American Academy of Pediatrics
  www.aap.org/family/poisonwk.htm

- American Association of Poison Control Centers
  www.aapcc.org

- National SAFE KIDS Campaign
  www.safekids.org

- U.S. Consumer Product Safety Commission
  www.cpsc.gov/cpscpub/pubs/466.html

- National Lead Information Center
  800/LEAD-FYI

Local

Pharmacies
Physicians
Hospitals

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What You Should Know About:

►*Fire and Burn Injury*

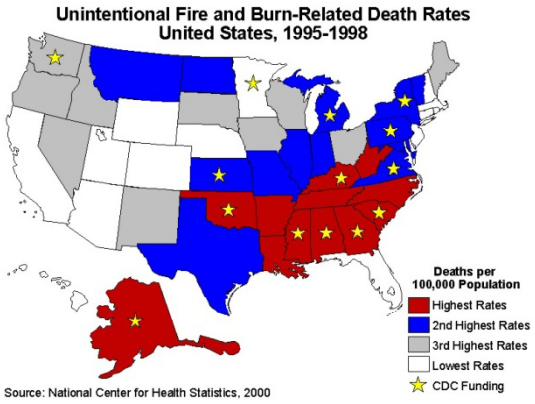
National

Fire and burn injuries were the sixth leading cause of unintentional injury death in the United States from 1996 to 1998, accounting for more than 3,500 deaths per year.[1,2] Data collected on fire and burn injuries have shown that they follow certain risk patterns. Children under the age of 5 are at high risk for fire and burn injuries, because their development is incomplete, and therefore, they may not have the capacity to judge dangerous situations.[3-5] Persons aged 65 and older are also at higher risk for fire and burn injuries, because they are more susceptible to smoke inhalation and burns, and are less likely to recover from their injuries. In 2000, residential house fires accounted for more than 79% of all fire deaths in the United States.[5,6] Approximately 379,500 residential fires killed about 3,420 people and injured another 17,400 people in the United States in 2000,[6] resulting in someone killed or injured by a house fire every 27 minutes.[5] House fires result in approximately $5 billion of property damage each year.[5,6] For every $1 spent on smoke alarms, $69 can be saved on fire-related costs.[5]

Residential house fire and burn injury death rates are highest in southern portions of the United States and Alaska. These areas have rates that are almost two times higher than the U.S. rates.[1,6] African Americans and Native Americans are at higher risk for fire-related deaths than any other race or ethnicity.

Oklahoma

In Oklahoma, 6,803 persons were hospitalized in a burn center or died from a burn injury or smoke inhalation from 1988 to 2000. Twenty percent of those injuries were from house fires; 62% of house fire injuries were fatal.



Children under 5 and seniors 65 and older had the highest annual injury rates. African Americans had an annual burn injury rate (6.0 per 100,000) that was more than twice the rate of whites and Native Americans (2.7 and 2.3 per 100,000, respectively). Among persons over the age of 14, alcohol and drugs were associated with 37% of cases. Alcohol was used in 34% of cases, with 71% having a blood alcohol level of 0.08 g/dl or higher. The leading causes of house fires were heating devices such as wood burning stoves/heaters (21%) and cigarettes (19%). The odds of a person dying if they were asleep at the time of a fire and did not have a smoke alarm were more than 3 times greater than for persons that were asleep and did have a smoke alarm.

►What Works

Smoke Alarms

Between 1978 and 1982, residential fire-related deaths decreased much faster than the decline in residential house fires in the United States; this reduction has been at least partially attributed to the increased use of smoke alarms.[7] Smoke alarms have been proven to be an effective, inexpensive means of preventing house fire injury, although battery replacement and maintenance is essential. Smoke alarms have been shown to reduce the potential of death in 86% of fires and the potential of severe injuries in 88% of fires and are consistently shown to reduce death during a house fire by about 50%.[5] Oklahoma has legislation requiring tenant-maintained smoke alarms in all multi-family dwellings with more than 4 units, as well as legislation requiring smoke alarms in all newly constructed residential dwellings or remodeled homes that require a building permit. Some cities (i.e., Ardmore) have passed ordinances that also require smoke alarms in all one- and two-family dwellings. Smoke alarm giveaway programs, intended to increase the number of functioning smoke alarms within the community, have also proven effective.[8-12]

Sprinkler Systems

Sprinkler systems, especially when used in conjunction with a smoke alarm, have been proven effective in preventing injury and the spread of fire;[13-16] studies have shown that many people who would not be saved by smoke alarms (i.e., quadriplegics) could have been saved by residential sprinklers in conjunction with a smoke alarm.[13] It is estimated that sprinklers alone could reduce residential fire deaths by 69% and the combination of smoke alarms and sprinklers could reduce residential fire deaths by 82%.[14] Currently, less than 1% of one and two-family dwellings and less than 10% of multi-family units have residential sprinklers.[17]

Fire and Burn Safety Education

Fire safety education, normally intended for older persons and preschool or school-age children, as well as the general public appears to be a promising method of preventing fire and burn injuries. Specific messages appear to be more effective than general or multiple messages.[17] Media campaigns should include: 1) information regarding potential fire and burn dangers; 2) recognizing and eliminating environmental hazards in older, high-risk buildings; 3) proper use of flammable items; 4) available burn prevention technologies (i.e., flame resistant clothing); 5) the benefits of smoke alarm and sprinkler systems; and 6) what to do in the event of a house fire. Families with children should discuss calling 911 outside the house (cell phone) or at a neighbor's house in the event of an emergency. "Exit Drills In The Home" (E.D.I.T.H.) needs to be included in fire and burn safety education, including planning and practicing two ways out of every room as well as a family meeting point outside the home. Education also needs to include never re-entering a burning home. "Stop, Drop, and Roll" and other burn prevention messages (i.e., "Crawl Low Under Smoke") may also be useful in preventing fire and burn injuries.

The Subject-Integrated Safety Curriculum for Teachers is a comprehensive, grade-specific 25-lesson injury prevention curriculum for children in grades K-5, that includes lessons such as bicycle safety, motor vehicle safety, water safety, burn prevention, and first aid.

Another educational tool that is available is *Risk Watch*. This is a grade-specific curriculum developed by the National Fire Protection Association (NFPA) designed to teach students about injury prevention. A three-year evaluation of the curriculum was completed in 2001, which shows that Risk Watch is an effective way to increase preschool through eighth grade students' knowledge on safety issues.[18]

Flammability Standards

One method of preventing the ignition of clothing and other materials involves regulation of flammable fabrics. Such passive interventions to prevent fire and burn injuries require minimal action on the part of the user and can be very effective. Flammability standards, such as the Children's Sleepwear Standard and the 1973 Mattress Flammability Standard, requiring manufacturers to produce a fire-safe material, are examples of passive interventions that have proven effective in reducing injury risk among children.[19] After the 1971 standards were adopted, the average number of clothing-related injury burn deaths for children under 14 years of age declined from 60 deaths per year to four.[20] However, in 1997 and again in 1999, the Consumer Products Safety Commission (CPSC) voted to relax the flammability standards among children's clothing. The current

relaxed standard excludes children under the age of 9 months from the sleepwear flammability standard and allows non-flame resistant sleepwear for children to be sold if it is tight-fitting. Information needs to be distributed to the parents and caregivers of Oklahoma's children on the best way to protect their children under the new relaxed standards. Sleepwear for children must fit the child's current size and not allow growth room because this allows air to get in between the clothing and the child's skin and increase the chance of a burn from fire.

Building Codes

A number of studies found that children from low-income families have significantly higher rates of injury resulting from house fires.[21-23] A study by Istre, et al. shows that injuries rates are eight times higher for persons in the lowest median income tract (below $20,000 per year) than persons in the highest median income tract (above $80,000 per year).[22] The higher prevalence of environmental hazards, such as faulty heating and electrical systems, appears to be a contributing factor. Improper or faulty electrical and heating equipment have been shown to be nine times more common in low-rental census tracts than in high-rental census tracts.[24] Most cities have ordinances, based on model building codes that establish standards for both new and existing dwellings. Inspection and enforcement of existing building codes can be effective in eliminating fire hazards often present in these older, high-risk dwellings. Local fire departments may also assist in onsite inspections of buildings within city or county limits.

Fire-Safe Cigarettes

One of the most common ignition sources of house fires is a cigarette dropped on a flammable source such as furniture or bedding. Nationally, cigarettes are the single leading cause of residential fire deaths by a wide margin.[25-27] A fire-safe cigarette is a cigarette less likely to burn or smolder and result in fire. In 2000, New York State passed the first law in the country requiring that only fire-safe cigarettes be sold in the state.[28]

►What You Can Do

Distribute Free or Low Cost Smoke Alarms

Smoke alarm distribution programs are a successful method for increasing the number of working smoke alarms in homes. Distributing smoke alarms directly to homes, called canvassing, has been determined the most effective and cost efficient method to reach high-risk urban residents. Distribution programs can be countywide or focus on a particular area determined to be most in need. Collaborative efforts with local groups such as the fire department, police, county health department, and

American Red Cross will ensure a larger number of smoke alarms are distributed, increase community support for the program, and maximize the impact of your efforts.

Assist in Smoke Alarm Maintenance

In one-third of homes equipped with smoke alarms, the devices do not work. Most smoke alarms fail because of missing batteries. Follow-up efforts to smoke alarm distribution programs will help to ensure the continued success of the program and house fire injury. Door-to-door smoke alarm checkups by trained volunteers or fire fighters, as well as phone calls, emails, or post cards could encourage homeowners to keep smoke alarms in good working order. Also, all health care and emergency personnel should be trained to routinely check smoke alarms when in homes for other situations.

Promote Home Fire Escape Plans

Families need to develop and practice home fire escape plans so that they can get out quickly in the event of a fire. According the NFPA, a fire escape plan should include:1) working smoke alarms on each level of the home and outside all sleeping areas; 2) two ways out of each room; 3) easy-to-use exits; 4) a meeting place outside; 5) a posted emergency phone number for the fire department; and 6) practicing of the plan at least twice a year. Encourage families to develop and practice a home fire escape plan through public service announcements, news releases, billboards, school notes, and emergency and medical personnel. Conduct drawings for prizes of families that submit and practice actual escape plans.

Educate the Community About the Causes of House Fires

Clothes dryers, smoking materials, propane, candles, electricity, cooking, heating devices, gasoline, and children playing with fire are all significant causes of house fires. Fire safety education efforts should play a large role in prevention efforts for the community at large as well as groups at highest risk. Work with local firefighters and other groups already involved in fire safety education.

Educate the Community about the Need for Sprinklers

Smoke alarms will save lives by providing a warning of smoke existence, but they can do nothing to extinguish a growing fire. Alarms must be maintained in good working order to prevent injuries. The combination of smoke alarms and sprinkler systems has been shown to reduce the loss of life by 82%.

►Where You Can Go

The following organizations can provide information about reducing house fire deaths and injuries as well as links to other organizations and web sites.

State

- Injury Prevention Service
  Oklahoma State Department of Health
  405/271-3430
  www.health.state.ok.us/PROGRAM/injury

- Oklahoma SAFE KIDS Coalition
  405/271-5695
  www.oksafekids.org

- Indian Health Service, Oklahoma City Area
  405/951-3800
  www.ihs.gov/FacilitiesServices/AreaOffices/oklahoma/index.asp

National

- National SAFE KIDS Campaign
  www.safekids.org

- National Center for Injury Prevention and Control
  www.cdc.gov/ncipc

- Safe USA
  www.safeusa.org

- FEMA
  www.usfa.fema.gov

- Children's Safety Network
  www.childrenssafetynetwork.org

- Indian Health Service
  www.ihs.gov/MedicalPrograms/InjuryPrevention/index.cfm

Local

Fire Department
County Health Department

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What You Should Know About:

►*Agriculture Injury*

National Statistics

According to National Agriculture Statistics Service reports, there are more than 2 million farms in the United States. Farms vary greatly in their size and characteristics, from small, family-run farms, part-time retirement farms, to large production facilities with million dollar sales. The family farm unit remains the dominant entity in agricultural production, especially in the southern United States.[1] This diversity of farm types, as well as the unique work/residential environment, make understanding and preventing agricultural injuries a challenge.

Agriculture is consistently one of the most hazardous industries, with farmers at increased risk for both fatal and nonfatal injuries.[2,3] In 2002 alone, 730 deaths and 150,000 disabling injuries occurred on U.S. farms.[3] Each day, about 500 agricultural workers suffer lost-time injuries, 25 of which result in permanent impairment. In a 1995 survey of the agricultural production industry, nearly 200,000 nonfatal lost-time work injuries were reported to have occurred on U.S. farms. Farm operators and their family members accounted for most of the injuries reported.[4]

Leading causes of farm-related deaths include machinery, motor vehicles, electrocution, environmental hazards and falling objects.[2] Tractors are the leading cause of death in agriculture.[5] In an average year, 110 American farm workers are crushed to death by tractor rollovers.[6]

Farming is one of the few industries in which families are also at increased risk. In particular, farm surveys indicate that the injury rate is highest among children age 15 and under and adults more than 65 year of age.[7] Unlike other occupations, farmers routinely work beyond the average retirement age.[8] Data from the National Institute for Occupational Safety and Health (NIOSH) reveals that farmers aged 75 and older are more than twice as likely to die on the job than their younger counterparts. Age-related conditions, such as arthritis, vision or hearing problems make farming potentially more dangerous for senior farmers. The Kentucky

Farm Family Health and Hazard Survey found that 1 in 9 farmers older than 55 years had been involved in a tractor rollover, and accounted for about half of all farming deaths.[9]

An estimated 1.26 million children and young adults less than 20 years of age reside on farms, with an estimated 725,000 working on the farms.6 On average, 104 children die each year as a result of farm-related injury[10] and more than 22,000 additional injuries occur among children younger than 20 years of age on farms.[11]

Oklahoma Statistics

From January 1998 through December 2001, farming-related deaths were found to be the leading cause of occupational deaths in Oklahoma, accounting for nearly one-quarter of all work-related deaths. Eighty-eight fatal injuries were identified in the agriculture, forestry, and fishing industry during this period. The average annual farming death rate was 35.9 deaths per 100,000 workers. While farmers and farm workers accounted for 4% of the work force, they accounted for 20% of all work-related deaths in Oklahoma. Males accounted for 92% of deaths; only seven females died in agriculture-related incidents. Forty-seven percent of deaths occurred among males over 64 years of age.

Over half (52%) of agriculture-related deaths were related to crop production, including planting and harvesting, whereas 39% were associated with livestock farming or ranching, and 9% were others, such as landscape/horticultural services and farm labor services. The leading causes of fatal agriculture-related events were machinery, followed by traffic crashes, animal-related incidents, electrocution, and being struck and/or crushed by an object. Of the fatal farming machinery cases, tractors were the most frequently used piece of farming machinery, accounting for 87% of the machinery-related deaths. Almost half of the tractor-related fatalities (44%) occurred when the victim fell or was thrown from a moving tractor and run over either by an attached implement or the tractor.

►What Works

Data Collection

It is likely that agriculture-related injury deaths are underreported. National data sources, such as death certificates, do not sufficiently identify the

number of farm injury incidents or describe their sources, causes, severity, and effects. Further, there is no single, continuous source of national non-fatal agricultural injury data. The unique setting of business and residence also make data collection a challenge. Farms with less than 11 employees are exempt from Occupational Safety and Health Administration (OSHA) guidelines that require reporting of agricultural injuries and deaths. Additionally, migrant farm workers and children injured while working on farms may never be reported as agricultural-related deaths. Also, tractor-related injuries and deaths may occur while these vehicles are on public roadways and be reported as a motor vehicle crash, not farm or occupational related.

A major barrier to progress in the prevention of agricultural injuries has been not only a lack of knowledge about the magnitude of the problem but also a deficiency in knowledge about the specific causes or risk factors due to the lack of analytical studies.[12]

To adequately address the problem, the population at risk must be accurately identified. Injury surveillance needs to provide "time of event, place of occurrence, demographic characteristics of the injured person, characteristics of the injury, agent causing the event, source of the event, mechanism of the event, circumstances surrounding the injury event, medical health care provided to the injured person, and health outcome of the event".[12] Additionally, information on the characteristics of the farm, including the size, type, and location of the farm and the number of people who work there should be collected.

Since July 1997, the Injury Prevention Service through the Oklahoma Fatality Assessment and Control Evaluation (OKFACE) project has conducted surveillance through multiple reporting sources including the Office of the Chief Medical Examiner, OSDH Division of Vital Records, OSHA, the Oklahoma Department of Labor, Workers' Compensation Court, statewide hospital injury surveillance, and a newspaper clipping service. Supplemental information has also been obtained from the Department of Public Safety, the Oklahoma Department of Mines, the Oklahoma Lake Patrol, fire departments, police and sheriff departments, and emergency medical services. Information about the OKFACE project is available at www.health.state.ok.us/program/injury/okface/index.html.

Rollover Protective Structure (ROPS)

Tractors are common to all farm operations. In 1976, OSHA standards required rollover protective structures on all tractors used by farm employees. However, self-employed

farmers and their family members, as well as farms with 10 or fewer workers are exempt. Nearly 50% of farm tractors currently in use don't have a certified ROPS with a seatbelt.[13] A ROPS is a cab or frame that is designed to prevent death or injury by providing a protective zone for the tractor operator if the tractor overturns or rolls over. The operators of tractors equipped with ROPS must wear seat belts. Without the seat belt, the operator would not be confined to the protective zone. The National Safety Council estimates that ROPS and seat belt equipped tractors will save approximately 350 lives each year on U.S. farms.[14]

Power Take-Off (PTO)

The Master Shield power take-off (PTO) shaft is an efficient means of transferring mechanical power between farm tractors and implements. However, PTO entanglements are a serious danger, which may result in disabling injuries or even death to farmers. The spinning shaft can grab and entangle farmers if proper guards or shields for the PTO-driven machinery are not in place.[15,16] Power take-off entanglements most often occur when people try to make repairs while equipment is operating. Others have been caught while stepping over or onto rotating shafts.[17] Power take-off master shields prevent accidental contact with the machine driveline. All PTO shielding must be correctly installed and properly maintained to prevent injury in the event of accidental contact.

Sensor Systems

Sensor systems have been designed to reduce injuries or deaths from machinery. This technological advancement can be adapted to agricultural equipment. Multiple sensing technologies, such as radar, microwave, and infra-red, have been designed to detect persons entering the defined danger areas. These sensors have been evaluated to protect operators or bystanders approaching the rotating components found on farm equipment, such as PTO and other shafts, gears, and belts.[18]

Slow Moving Vehicle (SMV) proper lighting/reflectors

Many agricultural equipment/vehicles driven on public roads are not equipped with a Slow Moving Vehicle (SMV) emblem, proper lighting, and/or reflectors. A slow-moving vehicle, or SMV, emblem is a fluorescent orange triangle (for daytime viewing) bordered by red photo-reflective material (for nighttime viewing). The triangle points up. The SMV emblem is placed at the rear of tractors or other farm machine near the centerline and two to ten feet from the ground. The purpose of the SMV emblem is to identify that the tractor or machine cannot travel any

faster than 25 m.p.h. These features will alert other drivers and subsequently may reduce risks for motor vehicle crashes.[19]

Cattle Handling Safety in Working Facilities

According to the Bureau of Labor Statistics, from 1992-1997, more than 75,000 workers received injuries and 375 workers were killed from animal-related injuries. Cattle are responsible for most injuries caused by farm animals. A 1997 study conducted by Oklahoma State University (OSU), Biosystems and Agricultural Engineering Department, found 150 cases of cattle handling-related injuries among 100 Oklahoma cow-calf operations. The study also showed that more than half of the injury cases resulted from human error.[20]

Health and Safety for Kids on the Farm

The National Institute for Occupational Safety and Health has funded the National Children's Center for Agricultural Injury Prevention through a cooperative agreement with the National Farm Medicine Center in Marshfield, Wisconsin. The Center has developed "North American Guidelines for Children's Agricultural Tasks" which is used to assist adults in assigning farm tasks to children between 7 and 16 years who live or work on farms. Various organizations committed to safety, children, and agricultural workers have been working together with the National Children's Center to implement education and training in childhood agricultural health and safety. The organizations include Farm Safety 4 Just Kids, National Future Farmers of America, National SAFE KIDS Campaign, Progressive Farmer Foundation, and others. These organizations collaborate with schools, farm families, agricultural businesses, producer groups, university extension, emergency medical personnel, health professionals, civic groups, and persons who are interested in the safety of children on the farm to do local children's farm safety activities using their resources and guidance.

Farm safety day camp programs are a way to teach children how to stay safe and healthy. The purpose of the program is to teach children 8 to 13 years of age the basics of farm safety and health. Farm safety day camps are designed based on specific contents/formats and are usually determined by a planning group or committee in the designated community. Topics covered may include general farm safety, farm chemical safety, PTO devices, tractor rollovers, electrical hazards, first aid, fire safety, grain entrapment/suffocation, safety around equipment on the farm, and animal safety. Although farm safety day camp programs

focus on children, adults are encouraged to participate. Classes such as first aid, cardiopulmonary resuscitation (CPR), stages of development for children, characteristics of each stage of development, causes of most farm injuries for children, and suggestions for preventing farm injuries among children can be offered.[21,22]

►What You Can Do

Implement Farm Safety Campaigns

Work with your local county extension office, Farm Bureau officers and committees, state Cooperative Extension farm safety specialist, farm supply stores and dealerships, farm organizations, rural heath care providers and others to develop an ongoing effective farm safety promotion program.

Organize a safety field day for farmers and farm families that can be used to educate the whole family on farm safety and health issues.

Make sure any local farm event or gathering has someone on the program speaking about a farm safety topic.

Sponsor and promote a first aid and a CPR course for farm families in your community.

Create partnerships with Hispanic organizations to disseminate Spanish farm safety material among Hispanic farmers.

Participate with Farm Safety Day Camp organizations to promote farm safety among children living in farming communities.

Identify and develop working relationships with rural farm cooperatives and insurance companies.

Online Programs

The University of Minnesota offers an online farm-safety course, "*A Nurse's Guide to Children's Agricultural Safety*", (http://safety.coafes.umn.edu/nagcatcourse.html) to prepare nurses and others working with families to give better advice to adults on the proper match of children and farm chores. The course is based on the North American Guidelines for Children's Agricultural Tasks and is designed for nurses working with rural residents.

►Where You Can Go

The following organizations can provide information about reducing agriculture deaths and injuries as well as links to other organizations and web sites.

State

- Injury Prevention Service
  Oklahoma State Department of Health
  405/271-3430
  www.health.state.ok.us/PROGRAM/injury

National

- Children's Safety Network
  www.childrenssafetynetwork.org

- National Institute for Occupational Safety and Health
  www.cdc.gov/niosh/homepage.html

- National Safety Council
  www.nsc.org/necas/

- National Children's Center for Rural and Agricultural Health and Safety
  www.marshfieldclinic.org/research/children/
  888/924-7233 or 715/389-4999

- Farm Safety 4 Just Kids
  www.fs4jk.org
  800/423-5437 or 515/758-2827

- University of Minnesota Online Farm Safety Course
  612/624-7444

- National Institute for Occupational Safety and Health
  www.cdc.gov/niosh/homepage.html
  1-800-35NIOSH

- National Education Center for Agricultural Safety
  1-888-844-6322.

- Farm Family Emergency Response Program
  Pennsylvania State University
  Agricultural Emergency Management Program
  814/865-2808

Local

4-H Clubs
Future Farmers of America chapters

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What You Should Know About:

►*Unintentional Fall Injury*

National

Falls are the second leading cause of unintentional injury deaths and the most common cause of injuries and of hospital admissions for trauma.[1] In 2001, 15,764 persons died as the result of falls (10% of all injury deaths).[2] Falls are the leading cause of nonfatal injury in the United States, accounting for 783,357 hospitalizations and an estimated 11.5 million minor injury cases that are not hospitalized.[3]

One of every three adults aged 65 years old or older suffers a fall each year.[4,5] Of those who fall each year, two thirds fall again within six months.[6] The majority of falls occur in the home with the highest proportions among young children and the elderly.[7]

The Centers for Disease Control and Prevention reports that each year in the United States, more than 200,000 children 14 years of age and younger are treated in emergency departments for playground-related injuries. About 15 children age 14 and younger die from playground-related injuries each year.[1] Almost half of these deaths result from strangulation, and about one-quarter are from falls to the playground surface.[1] More than one-third of all playground-related injuries are severe—fractures, internal injuries, concussions, dislocations, and amputations.[1] Almost 70% of injuries related to playground equipment occur on public playgrounds.[1] Most injuries that occur on playgrounds are associated with climbing equipment, slides and swings.[1] In schools, most injuries to students ages 5 to 14 occur on playgrounds.[1] In 1995, costs associated with playground-related injuries among children under 15 were estimated at $1.3 billion.[1]

Oklahoma

In 1999, 224 Oklahomans died from falls (death rate 6.8 per 100,000); 82% were 65 years and older (death rate 45.0 per 100,000) and 53% were female (death rate 13.8 per 100,000). Although data on all fall injuries that

occur each year in Oklahoma are not available, a total of 3,597 people were hospitalized for falls during 1999.

Persons aged 80-99 years comprised 49% of hospitalized cases (rate 1505.7 per 100,000 population) followed by 23% for persons 70-79 years (rate 409.5 per population). Children under 10 years and adults 20-29 years each comprised 1% of fall injuries (rates 8.7 and 11.6 respectively).

►What Works

Regular Exercise

Increasing physical activity can be an effective component of fall prevention programs. Lack of exercise leads to weakness and increases a person's chances of falling. An exercise program for older adults that addresses the three major areas of strength, balance and endurance appears to lower the risk of falling.[8,9] Exercises that improve balance and coordination, like Tai Chi, are the most helpful. In some populations, when used as the only intervention, Tai Chi appears to reduce fall risk.[8] Individuals should consult with a physician before starting any type of exercise program.

Medication Review

As a person ages, the way some medicines work in the body can change. Additionally, some medicines, alone or in combination with others, may cause drowsiness or lightheadedness, which could lead to a fall. Taking more than four medications or using psychoactive medications is a frequently reported risk factor for falling.[10] A physician should review all medicines taken by a patient (prescription and nonprescription).

Medical Evaluation & Vision Testing

Studies have shown that some other important fall risk factors are Parkinson's Disease,[11,12] history of stroke,[12] chronic disease,[13] neuromuscular disease,[14] urinary incontinence,[15] postural hypotension,[16] cognitive impairment,[15] and visual impairment.[17,18] To reduce these risks, seniors should see a health care provider regularly for chronic conditions and have an eye doctor check their vision at least once a year. The wrong glasses or a condition such as glaucoma or cataracts that limits vision could increase the risk of suffering a fall-related injury. The multifaceted programs that combine exercise, medication review, vision correction and environmental changes in the

home are shown to have an impact in trials, but further study is needed to learn how best to provide these on a broad scale.[19-21]

Environmental Modifications in the Home

Because seniors spend most of their time at home, one-half to two-thirds of all falls occur in or around the home.[22,23] Most fall injuries are caused by falls on the same level (not from falling down stairs) and from a standing height (for example, by tripping while walking).[24] Therefore, it makes sense to make the home environment safer to enter and exit and to move around safely within. Installing stair railings, ramps, and grab bars (such as in the bathroom) are simple but effective modifications. However, these are most successful when combined with other fall-related interventions.

Hip Protectors

Padded hip protectors are known to reduce the incidence of hip fracture during a fall. A study in Finland found that hip fractures could be reduced by 80% with the use of a hip protector if worn at the time of fall.[25]

Approved Playground Surfacing

The Consumer Product Safety Commission recommends that playground surfaces have at least 12 inches of wood chips, mulch, sand, or safety-tested rubber mats. The protective surfacing should extend at least six feet in all directions from equipment. In addition, all platforms should have guardrails to prevent falls. According to the Centers for Disease Control and Prevention and the National Program for Playground Safety, shredded rubber performed best in a test of loose-fill playground surfacing materials. Sand, wood fibers and wood chips also performed adequately, with little difference among the three.

►What You Can Do

Conduct Home Assessments

Falls in the home may be prevented by conducting home assessments. Home assessments can be performed by individuals on behalf of a family member, or working collaboratively with community groups to canvas high risk households. The Centers for Disease Control and Prevention has provided a checklist to help locate and remove such hazards, and can be found at http://www.cdc.gov/ncipc/pub-res/toolkit/brochures.htm. The checklist suggests removing things that can be tripped over (such as papers, books, clothes, and shoes) from stairs and paths where people walk, removing small throw rugs or using double-sided tape to keep the rugs from slipping, keeping items often used in cabinets that are easily

reached and accessible without a step stool, installing grab bars next to the toilet and in the tub or shower, using non-slip mats in the bathtub and on shower floors, improving lighting in the home, installing handrails and lights on all staircases, wearing shoes that give good support and have thin non-slip soles, and avoiding wearing slippers and athletic shoes with deep treads.

Promote Exercise Programs Among Seniors

Exercise programs can be administered on-site by trained health care professionals at hospitals, nursing homes and other senior care facilities under the supervision of a physician. Walking programs to increase physical capacity could also complement the strength and balance programs.

Implement Comprehensive Fall Prevention Programs

Fall prevention programs should be multifaceted in order to address a range of fall-related causes and risk factors. Strategies to prevent falls among older adults include exercises to improve strength, balance, and flexibility; reviews of medications that may affect balance; and home modifications that reduce fall hazards such as installing grab bars, improving lighting, and removing items that may cause tripping. A complete review of comprehensive fall prevention programs can be found at www.cdc.gov/ncipc/falls/fallprev.pdf. In addition, *A Tool Kit To Prevent Senior Falls* is available http://www.cdc.gov/ncipc/pub-res/toolkit/brochures.htm. The Tool Kit has current technical information and materials about falls and fall-related injuries that can be used on an individual basis or incorporated into health promotion activities aimed at reducing falls among older adults.

Implement A Playground Action Plan

The National Program for Playground Safety (NPPS) recommends the following strategies to prevent playground injuries: 1) Improve adult supervision of children on playgrounds. 2) Educate the public about age-appropriate playground equipment. 3) Build playgrounds with surfaces—such as shredded rubber, wood chips, wood fiber, and sand—that reduce injuries related to falls.[26] 4) Improve maintenance of equipment and surfacing.

Information can be obtained through NPPS regarding safety surveys and playground design, as well as *Playground Safety School* to promote playground safety and advocacy at the community level. For more information contact NPPS at http://www.uni.edu/playground/home.html.

►Where You Can Go

State

- Injury Prevention Service
  Oklahoma State Department of Health
  405/271-3430
  www.health.state.ok.us/PROGRAM/injury

- Oklahoma SAFE KIDS Coalition
  405/271-5695
  www.oksafekids.org

- Indian Health Service, Oklahoma City Area
  405/951-3800
  www.ihs.gov/FacilitiesServices/AreaOffices/oklahoma/index.asp

National

- National Fire Protection Agency
  617/770-3000
  www.nfpa.org

- National Program for Playground Safety
  www.uni.edu/playground/home.html

- National Center for Injury Prevention and Control
  www.cdc.gov/ncipc

- Indian Health Service
  www.ihs.gov/MedicalPrograms/InjuryPrevention/index.cfm

Local

County Health Departments
Hospitals

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What You Should Know About:

►*Suicide*

National Statistics

Approximately 30,000 Americans die each year as a result of suicide.[1] Overall, suicide is the 11th leading cause of death, and the third leading cause of death among persons aged 15-24 years.[2] For every two victims of homicide in the United States, there are three deaths from suicide.[3]

Suicide rates vary by race, sex, age and method of injury. Whites and Native Americans are almost twice as likely to complete suicide than African Americans and persons of other races.[2,4] The Centers for Disease Control and Prevention reports that males are four times more likely to complete suicide than females,[5] but females attempt suicide three times more often than males.[6]

Suicide among older persons is disproportionately high. Suicide rates increase with age and are highest among persons aged 65 and older. Adults aged 65 years and over account for 13% of the U.S. population, yet nearly 20% of U.S. suicides.[2,5] White males aged 85 and over complete suicide at almost six times the national average.[2] It is estimated that one person aged 65 or over completes suicide every 90 minutes.[7]

In addition, a rapidly increasing number of suicides are being committed by adolescents and young adult males. In the last three decades, the suicide rate among young teens and young adults has increased by more than 300%. In 1999, more teenagers and young adults died from suicide than from cancer, heart disease, AIDS, birth defects, stroke, and chronic lung disease combined.[8]

Suicide risk factors vary among age groups, however, depression, death of a family member, exposure to suicide, and a previous suicide attempt are risk factors common to all age groups. Youth risk factors are unique in that youth are more impulsive and reactive, and have less communication and coping skills. Parental or family discord, divorce, substance abuse,

high-risk behavior, financial problems, and access to firearms are additional risk factors. Often the precipitating factor may be stress-related due to the breakup of a boyfriend or girlfriend, family discord, or problems at school.[9] Among older persons, risk factors include social isolation, poor communication, diminished life goals, poor physical health, disability, chronic pain, and fading recuperative power.[10]

Oklahoma Statistics

According to Oklahoma State Department of Health Vital Statistics data, 2,356 Oklahoma residents committed suicide between 1997 and 2001. Data shows there were more than 450 suicides each year. The average annual rate for males (23.3 per 100,000) in Oklahoma was more than four times greater than for females (5.1 per 100,000). Rates were highest for males 65 years and older. The rate for whites (15.4 per 100,000) was more than twice the rate for Native Americans (8.5 per 100,000) and African Americans (6.8 per 100,000). Among the white population, the age-specific incidence rate was highest for persons 25-44 years of age. While the rate for whites dropped during this 5-year time period, the rate for Native Americans increased substantially. Firearms were the leading method for completing suicide for persons older than 14 years of age; persons younger than 14 years were more likely to use hanging as a method.

Blood alcohol content levels were tested on 2,048 (87%) of persons 15 years of age and older; 32% showed positive results. Persons 35-44 years of age were most likely to have a positive BAC. More than half of Native Americans had a positive BAC (54%) compared to 31% of whites and 30% of African Americans.

►What Works

Community Support for Suicide Prevention

Because the issues surrounding suicide are complex, prevention efforts must address psychological, and social factors to be effective. Community-wide support of individuals, public, private, faith-based, and health care organizations is needed to provide the most effective, comprehensive services. Such broad-based support will increase the likelihood of success in generating support for and improving suicide prevention efforts.

Reducing the Stigma Associated with Help-Seeking Behaviors

Suicide is closely linked to mental illness and substance abuse, and both can be effectively treated. However, the stigma associated with this type

of health care prevents many people from getting the treatment they need. Family members of suicide attempters often hide the behavior from others; those who have experienced the suicide of a loved one suffer not only the grief of loss but often suicide's associated stigma. Destigmatizing mental illness and substance abuse disorders could result in improved financial reimbursement, integrations of physical and mental health care, and increasing the willingness of individuals to seek treatment.

Direct Screening of Youth

Another prevention strategy that has received attention and has yielded encouraging results is direct screening of youth. One common method used to do this is a two-stage screening process. In the first stage, students complete a brief self-report questionnaire called the Columbia Teen Screen during a health class. Based on their answers, students who may have an increased risk are advanced to the second phase and assessed further through a computerized Diagnostic Interview Schedule for Children (DISC). An advantage of the two-stage process is that it reduces the number of students who have to be seen by a clinician by screening out those students who are not at risk.[11] When the DISC interview is completed, the computer produces a diagnostic report that is reviewed by a physician who then personally interviews students in the third stage of the screening process. The physician determines whether the identified student needs to be referred for further evaluation. A case manager contacts the students' parents to assist students who are deemed to be in need of additional intervention and also to ensure treatment compliance.[11] Although this strategy appears to be quite promising, it is important to remember that among teenagers, suicidal tendencies may come and go as crises occur and are resolved. Therefore, multiple screenings may be necessary in order to minimize false negatives.[12] Considerable effort must be made to assist the families and adolescents in obtaining help if it is needed.[12]

Reducing Access to Lethal Means and Methods of Self-Harm

Evidence suggests that removing or restricting access to lethal means of suicide (i.e., firearms, poisons, medications, alcohol, bridge railings, carbon monoxide, etc.) is an effective suicide prevention strategy that can decrease suicide.[13] Further, education on the restriction of access to lethal means is seen as one of the most promising suicide interventions. Often referred to as "means restriction," this approach is based on the premise that a small, but significant number of suicidal acts are impulsive in nature making suicidal thoughts and quick access to lethal means a deadly combination. Therefore, a self-destructive act can be prevented by eliminating access to such means of self-harm.

Easy access to a firearm, especially for the young, is an important risk factor for suicide.[14] A potentially suicidal adolescent's risk of actually committing suicide increases 75-fold if there is a gun in the home.[15] Among parents whose children visited an emergency department for a mental health assessment or treatment, those who received injury prevention education from hospital staff are significantly more likely to limit access to lethal means of self-harm than families who did not receive such education.[16]

Training To Recognize Persons At-Risk

Despite a growing awareness of suicide as a serious health problem, there is a significant need for training programs for health care professionals, as well as others who frequently come into contact with persons at risk. Evidence suggests that many health professionals are not adequately trained in assessing or treating suicidal clients, identifying clients who need referral for specialized care, or recognizing risk factors often found in family suicide survivors.

Therefore, community suicide prevention efforts should address the need to provide training to health care and other professionals. It has been recommended that greater emphasis be placed in undergraduate, graduate, and continuing medical education on recognition and effective treatment of depressive disorders and suicidal states in older people.[13]

Effective Clinical and Professional Practices

Many of those who commit suicide visit a non-mental health clinician within the last month of their lives. Several studies have shown that from 43% to 76% of older people who committed suicide saw a primary care provider within 30 days of death.[7,17-19] From 19% to 49% saw a physician within one week of their suicide. These findings point to the important role primary care providers can play. Depression is a common risk factor associated with suicide in later life, yet studies have demonstrated that primary care providers have difficulty recognizing treatable depression in their patients.[20,21] Self-administered screening tools for depression have been validated for use among older primary care patients, including the Geriatric Depression Scale and the Center for Epidemiologic Studies-Depression Scale.[22,23] It has been recommended that these measures be used routinely in primary care offices.[13]

Improve Access and Links to Mental Health and Substance Abuse Services

Many individuals are at increased risk of suicide due to disparities in the health care and treatment options available to them. Lack of

transportation, conflicting schedules, stigma, cultural or language barriers, lack of health care professionals to meet the needs, and little or no insurance coverage are barriers to identifying those at risk and providing adequate health care.

To be effective, services to prevent suicide must be available when and where people need them. Ideally, a community should provide a variety of confidential services in many different places. Providing mobile services, including information, education, screening, treatment, and consultation, to the general population as well as those at highest risk is an effective way of improving access to mental health and substance abuse services. In addition, improved coordination of various community organizations is also important to ensuring that all community members receive appropriate preventive care.

►What You Can Do

Build And Strengthen Community Coalitions and Programs

Work with Turning Point coalitions or other community organizations to coordinate groups and coalitions related to suicide injury prevention, as well as organizations involved in post-suicide support of family and friends. Actively recruit individuals and organizations from all parts of the community to participate, including mental health providers, faith communities, neighborhood centers, youth groups, senior centers, substance abuse advocates and facilities, private businesses, community leaders, volunteers, emergency vehicle personnel, and health care providers among others. When possible, integrate suicide prevention into existing and ongoing programs. Train at least one member of each group to be a community advocate for suicide prevention.

Establish and Implement Screening Programs

Partner with schools, youth organizations, local mental health programs, and mental health associations to implement professionally designed mental health screening instruments to identify youth with mental illnesses associated with suicidal behaviors. Partner with schools, local physicians, and mental health providers to implement the Adopt-a-Doc/Nurse model in schools.

Implement Gatekeeper-Training Programs

Provide in-service education programs to keep school system personnel or college resident advisors trained in suicide risk identification, crisis intervention and referral. Collaborate with parent-teacher groups and schools with a common goal of implementing district wide suicide

prevention strategies, as well as student services at the college level to implement or support suicide prevention efforts. When possible, utilize existing youth programs to promote suicide prevention programs. Work with local school systems and other youth organizations to provide "gatekeeper" training for adults and staff.

Provide training for health care workers, clergy, teachers and other educational staff, correctional workers, and attorneys on how to identify and respond to persons at risk for suicide. Include training that specifically addresses needs of suicide survivors.

Implement Programs for Older Persons

Adult day care centers, home care agencies, hospices, assisted living facilities, and nursing homes are the primary caretakers of older Americans. Work with these facilities and other area aging agencies to conduct needs assessments for suicide prevention programs for their residents. Develop resource kits for service organizations that include suggestions for activities designed to strengthen feelings of connectedness. Develop and implement a training program for employees and volunteers to help identify and refer persons determined to be at risk of suicide. Increase the number of services for older people that include evidence-based suicide prevention programs designed to identify older people at risk for suicide behavior and refer them for treatment.

Support or develop outreach programs to older adults that include regularly scheduled home visits and phone calls. Grief support and counseling, as well as senior peer-counseling programs can be implemented.

Support ongoing continuing education in screening and referral for providers and the availability of licensed professionals to provide referral services.

Improve Health Care Education

Incorporate suicide risk training programs for health care professionals, including physicians, physicians' assistants, medical residents, and nursing care providers. Increase the number of clinical social work, counseling, poison control center, and psychology graduate programs that include suicide prevention training. Ensure that individuals who typically provide services to suicide survivors, including emergency medical technicians, firefighters, police, and funeral directors, have also been trained to understand and respond appropriately to their unique needs. Ensure that persons treated for trauma, sexual assault, or physical abuse in emergency departments receive mental health services.

Utilize or develop educational materials to be distributed to health care professionals and settings. Support programs to educate family members and significant others of persons receiving treatment for mental health and substance abuse disorders about the risk of suicide.

Develop guidelines for discharge planning and follow-up procedures for patients and families of those at risk to increase the number of persons who receive and maintain treatment. Train emergency room staff in the use of protocols to increase treatment adherence.

Improve Access and Coordination with Mental Health Care Services

Promote collaboration between schools and existing community providers of mental health care. Take information and services (i.e. education, screening, treatment, and consultation) to onsite locations within the community (i.e., churches, malls, schools, nursing homes, youth organizations, ball fields or county fairs).

Integrate mental health and suicide prevention into health and social services outreach programs for at-risk populations. Also, work to increase the number of school-based health centers providing mental health services.

Advocate for low- or no-cost services and more mental and substance abuse insurance coverage. Support legislation that requires health insurance plans to cover mental health and substance abuse on par with physical health care. Implement utilization management guidelines for suicidal risk in managed care and insurance plans.

►Where You Can Go

The following organizations can provide information about reducing suicide as well as links to other organizations and web sites.

State

- Injury Prevention Service Oklahoma Department of Health
  405/271-3430 or 1-800-522-0204
  www.health.state.ok.us/PROGRAM/injury

- Child and Adolescent Health Division
  405/271-4471
  www.health.state.ok.us/program/ahd/index.html

National

- National Center for Injury Prevention and Control (CDC)
  www.cdc.gov/ncipc/stateProfiles/index.htm (state injury profiles)
  www.cdc.gov/ncipc/pub-res/pubs.htm (publications and resources)
  http://www.cdc.gov/ncipc/factsheets/yvfacts.htm (fact sheets)

- American Association of Suicidology
  1-202-237-2280
  1-403-245-3900 Information Center

- American Foundation for Suicide Prevention
  www.afsp.org/index-1.htm

- Suicide Prevention Advocacy Network (SPAN USA)
  1-888-649-1366

- *National Strategy for Suicide Prevention*
  www.mentalhealth.org/suicideprevention/default.asp

Local

Local mental health associations

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Appendix A:

►*State Profile*

- *According to the 2000 U.S. Census, the population of Oklahoma constituted 1.2 % of the entire U.S. population.*
- *Oklahoma had the second highest Native American population in the U.S.*
- *The proportion of households living in poverty was 24 % higher than the U.S. average.*
- *The median household income in Oklahoma was 25 % below the U.S. median.*
- *The Oklahoma crude death rate was 19 % higher than the U.S. rate*
- *The Oklahoma infant mortality rate was 23 % higher than the national average.*
- *The college education rate in Oklahoma was slightly lower than the U.S. rate, while the high school education rate was about the same as the national rate.*
- *Oklahoma has 67 county health departments associated with the state health department, and 2 independent city-county health departments.*
- *Oklahoma ranks 46th in the U.S. in per capita public health funding.*

Total Population	3,460,654
Sex and Age	
Male	49.1 %
Female	50.9 %
<5 years	6.8 %
5-9 years	7.1 %
10-14 years	7.3 %
15-19 years	7.8 %
20-24 years	7.2 %
25-34 years	13.1 %
35-44 years	15.2 %
45-54 years	13.1 %
55-59 years	5.0 %
60-64 years	4.1 %
65-74 years	7.0 %
75-84 years	4.5 %
>85 years	1.7 %
Median Age (Years)	35.5
Households with Children < 18 Years	35.7 %
Households with Persons 65 Years and Older	23.8 %
Race	
White	76.2 %
African Americans	7.6 %
American Indian and Alaska Native	7.9 %
Asian	1.4 %
Other	6.9 %
Socioeconomic Indicators	
Median Household Income	$33,400
Households Below Poverty	14.6 %
Food Stamps	8.5 %
Medicaid	9.5 %
Medicare	15.0 %
Education	
Public School Students	623,056
Public Schools in Rural Areas	41.7 %
With High School Diploma*	80.6 %
With Bachelor's Degree*	20.3 %

Appendix B:

► *The Intervention Decision Matrix*

Fowler CJ & Dannenberg AL, 1995. Revised 1998, 2000, & 2003

Intervention	Option 1	Option 2	Option 3
Effectiveness			
Feasibility			
Cost Feasibility			
Sustainability			
Ethical Acceptability			
Political Will			
Social Will			
Potential for Unintended Benefits			
Potential for Unintended Risks (LOW risk = HIGH priority)			
Final Priority Rating			

Compare options ranking each cell as “high, medium, or low priority.”

Which option is strongest?

Is there a “fatal cell”?

Appendix C:

►*Grant Writing 101*

What is a Grant?

Grants can be an important tool in providing the resources necessary to implement a successful community level injury prevention program. Grant programs are designed to develop a new or better understanding about the identification, causes, education, and/or prevention of an injury. Funders for grants commonly begin by inviting or announcing a request for proposals, commonly called RFP or RFA. These are the primary source of information needed for writing a proposal requesting money from a granting agency.

Parts of a Grant:

Although each grant and its requirements are unique, common requirements include a project title, intended population, amount of funding requested, organization information, background and need for the grant, community partnerships, evaluation, project management, and a budget. Be sure to clearly:

• ***Select A Population*** *- Who it is that you want to serve with the proceeds of the grant.*

• ***Establish A Need*** *- Use multiple statistics to show a need in your population (see Where You Can Go* section *for assistance.)*

• ***Identify Goals & Objectives*** *- Be sure that your proposal outlines what you want to accomplish by including clearly defined objectives and measurable ways to affect the problem among the group.*

• ***Define A Plan of Action -*** *Specify measurable plans or activities intended to accomplish your goals and objectives.*

• ***Evaluate*** *- Outline how you will determine if you have met your goals and objectives.*

How Can Grant Funds Be Used?

Grant funds can be used for salaries, the purchase of products, and materials or supplies, depending on the requirements of the grant or approval by the funders.

The Secret:

The most important rule to keep in mind when grant writing is to do exactly what the funder asks. Identify the primary purpose for the request and then determine goals and objectives that will make your proposal appropriate, yet unique. Then follow all guidelines regarding the format, required information, goals and objectives, and timeline for submission. Failure to do so could result in a less competitive proposal or even disqualification.

Locating Funding & Grant-Writing Sources:

Grants are offered through public and private sources, as well as groups and individuals. A thorough review of Internet sources or groups and businesses in your community may identify many more. Sources for community injury prevention grants may include the following:

- A Pediatrician's Guide to Grant Writing
  http://www.aap.org/commpeds/resources/grant_writing.html
- The American Legion Child Welfare Foundation
  http://www.cwf-inc.org/docs/?section=grantseekers
- C.H.E.F.'s Grantmaking Programming
  http://www.chef.org/about/grants.php
- The David and Lucile Packard Foundation
  http://www.packard.org/
- Dynegy Inc.
  http://www.dynegy.com/about_dynegy/in_the_community.asp
- Rosie's For All Kids Foundation
  http://www.forallkids.org/
- Foundation For Child Development
  http://www.fcd-us.org/
- Goodrich Corporation Foundation
  http://www.goodrich.com/CDA/GeneralContent/0,1136,59,00.html

- The Hagen Family Foundation
  http://www.hagenfamilyfoundation.org/
- The Janus Foundation
  http://ww3.janus.com/Janus/Retail/StaticPage?jsp=Janushome/JanusFoundation.jsp
- Kimberly Clark
  http://www.kimberly-clark.com/aboutus/kc_foundation.aspx
- The Kresge Foundation
  http://www.kresge.org/
- Lucky Brand Foundation
  http://www.luckybrandjeans.com/Foundation/LBF_home.htm
- A.L. Mailman Family Foundation
  http://mailman.org/index.htm
- Milagro Foundation
  http://www.milagrofoundation.org/
- National Association of Nurse Practitioners
  http://www.napnap.org/index.cfm?page=13&sec=102
- RGK Foundation
  http://www.rgkfoundation.org/
- The Robert Wood Johnson Foundation
  http://www.rwjf.org/index.jsp
- Office Depot
  http://www.community.officedepot.com/local.asp
- National Patient Safety Foundation
  http://www.npsf.org/
- Garth Brooks Teammates For Kids Foundation
  http://www.teammates4kids.com/
- Tiger Woods Foundation
  http://www.twfound.org/
- W.K. Kellogg Foundation
  http://www.wkkf.org
- Yahoo Directory
  http://dir.yahoo.com/Society_and_Culture/Cultures_and_Groups/Children/Organizations/Foundations/
- Fundsnet
  http://www.fundsnetservices.com/educ01.htm
- White House Faith-Based Initiative
  http://www.whitehouse.gov/government/fbci/

- DisabilityResources.org
  http://www.disabilityresources.org/GRANTS.html
- grantsalert.com
  http://www.grantsalert.com/
- Richard G. Lugar
  http://lugar.senate.gov/services/grantsinfo.cfm
- The Center for Children with Special Needs
  http://www.cshcn.org/resources/grantresources.cfm
- Grants Information Center
  http://grants.library.wisc.edu/
- GrantProposal.com
  http://www.grantproposal.com/
- GrantsNet
  http://www.hhs.gov/grantsnet/
- Schoolgrants Biweekly Newsletter
  http://www.schoolgrants.org/newsletter2.htm
- U.S. Department of Labor
  http://www.doleta.gov/grants/
- The Catalog of Federal Domestic Assistance
  http://12.46.245.173/cfda/cfda.html
- GRANTS.GOV
  http://www.grants.gov/GetStarted
- The Foundation Center
  http://foundationcenter.org/
- Network For Good
  http://www.networkforgood.org/Npo/default.aspx
- CDC National Center for Injury Prevention and Control
  http://www.cdc.gov/ncipc/erpo/default.htm