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Reports for individual injury areas (e.g. fire/burn, motor vehicle-related injury, etc.)
are available electronically at
www.state.oh.us/odps/division/ems/ems_local/trauma/trauma_commissions.htm

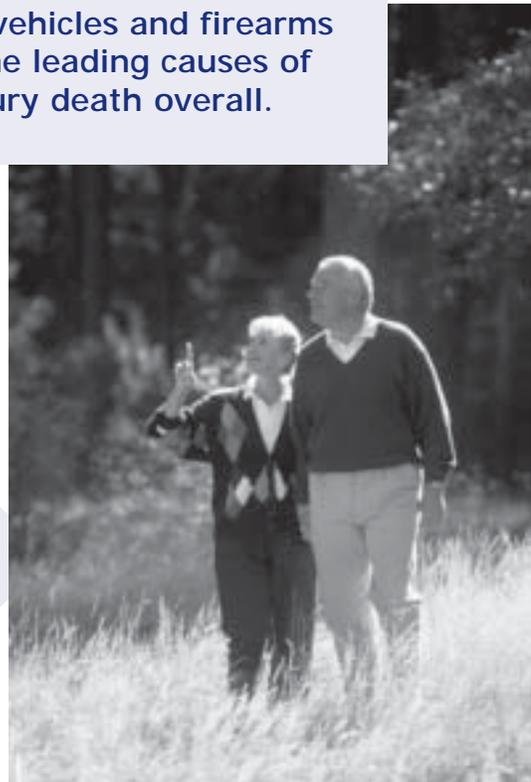


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Injury is the leading cause of death and disability for Ohioans ages 1 through 34 and the 6th leading cause of death for all age groups.

More than 5,000 Ohioans are killed each year from injury-related causes.

Motor vehicles and firearms are the leading causes of injury death overall.



EXECUTIVE SUMMARY

The Ohio Commission on the Prevention of Injury

Ohio's 123rd General Assembly passed House Bill 138 authorizing a statewide trauma system in November 2000. Section Five of this comprehensive legislation required the Ohio Department of Health to form a commission on the prevention of injury, with particular emphasis on the pediatric and geriatric populations in Ohio. The result of the commission's work is this comprehensive report examining the current status of injuries in Ohio with recommendations for future action. The report includes information on unintentional injuries, such as motor vehicle traffic crashes, falls, and drowning, and intentional injuries, including suicide, homicide and family violence. It is intended to guide subsequent statewide activities, including adoption of a state strategic plan for injury prevention, to make Ohio a safer and healthier place to live, work and play.

The Injury Problem

The consequences of injury can be far-reaching and severe. Injuries are the leading cause of death and disability for Ohioans ages 1 through 34 and the sixth leading cause of death for all age groups. More than 5,000 Ohioans are killed each year from injury-related causes. Motor vehicles and firearms are the two leading causes of injury death overall. Of the millions of Ohioans who survive injuries, many suffer long-term consequences such as permanent disability, time lost from work and family, costly medical expenses and pain and suffering. Injury leads to huge societal costs as well, amounting to billions of dollars annually in health care expenses, lost productivity, rehabilitation and criminal justice system expenses among others. The good news is that injuries largely follow predictable patterns and are therefore, preventable.

Common Themes

The consensus-based process used to develop this report led to the identification of the following overarching themes. These themes provide the foundation for core recommendations in this report. Risk factors and prevention strategies for unintentional and intentional injuries often differ, however there are factors common to both. Further examination of these common factors or intersection points will facilitate consolidating prevention efforts, and potentially reducing program-related costs. Decision makers and advocates addressing both should decide where consolidation efforts make sense.

- **Injuries are costly. Injury prevention saves lives and money.**
Injuries are associated with long-term disability, requiring in-depth and long-term health care services, reducing the participating workforce and consuming already scarce public resources. Investment in prevention programs prevents the much higher costs of dealing with injury consequences.
- **Improved injury surveillance efforts and program evaluation are needed.**
Monitoring changes in injury frequency and patterns is necessary for planning and evaluation. Deaths caused by injuries are captured statewide, however, deaths only represent the tip of the iceberg of the injury problem. Injury data in Ohio are incomplete and inadequate for nearly all injury categories.
- **Improved statewide coordination of programs is needed.**
Many statewide and local prevention efforts are underway, each targeting the injury problem from a unique perspective. Improved statewide coordination of injury prevention efforts would benefit all involved.
- **Injuries disproportionately affect those living in poverty, and the young and the old.**
Special programs targeted at these populations are important.
- **Alcohol use is an important risk factor for injury.**
Alcohol and other drug abuse is a far more complicated issue than can be addressed comprehensively in this report. There is a clear association between alcohol use and increased risk for injury.
- **Legislation can be an effective strategy for preventing injuries.**
Where appropriate, state and local legislation and policies that lead to the prevention of injuries should be enacted or strengthened, and their effects should be evaluated.

Conclusions

This report serves as a starting point. The most challenging work lies ahead in addressing the recommendations resulting from the commission's work. A coordinated statewide effort is needed to more effectively target limited resources and share information among those working to prevent injuries in Ohio. The identification of high-risk groups for injury prevention efforts is critical because resources are scarce. Improved statewide data are clearly needed to identify patterns of injury and associated risk factors. Injury prevention efforts are cost-effective and can save state dollars in health care expenses, worker compensation claims, law enforcement and criminal justice-related costs, rehabilitation expenses and lost productivity.

Common Themes and Core Recommendations to Prevent Injury in Ohio

Theme: Injuries are costly. Injury prevention saves lives and money.

A. Seek creative and collaborative solutions to funding.

1. Enhance communication and collaboration among key stakeholders.
2. Encourage insurance companies, employers and others to cover injury prevention programs and services to reduce health-care costs.

B. Provide state funding that adequately addresses injury - a leading cause of morbidity and mortality in Ohio.

Theme: Improved injury surveillance efforts and program evaluation are needed.

C. Improve injury surveillance efforts.

1. Develop and maintain injury data infrastructures as discussed below. Collect cost and payer information when possible to allow cost/benefit analyses of injury prevention interventions.
2. Form an ongoing, interagency workgroup to review and make recommendations regarding data needs and opportunities. The workgroup should consider coordination, linking and quality improvement of data-collection efforts. It should include representatives familiar with the relevant databases. This group should explore:
 - Funding opportunities to support data linkage.
 - Mechanisms to improve quality and access to data.
3. Continue to provide support for the:
 - Development and maintenance of the Ohio Emergency Medical Services Incident Reporting System (EMSIRS) and the Ohio Trauma Registry through the Ohio Department of Public Safety.
 - Implementation of the Ohio Youth Risk Behavior Survey (YRBS) and the Ohio Behavioral Risk Factor Surveillance Survey (BRFSS).
 - Collection of licensed child care center serious injury data through the Ohio Department of Job and Family Services.

4. Support new uses of injury data through:
 - The development of a Crash Outcomes Data Evaluation System (CODES) in Ohio. CODES links traffic crash reports, Emergency Medical Services Incident Reporting System (EMSIRS) data and hospital discharge data. Funding is available from the National Highway Traffic Safety Administration.
 - Ohio's participation in the Centers for Disease Control and Prevention's (CDC's) National Violent Death Reporting System (NVDRS).
 - External cause of injury coding (e-coding) of and increased access to the full set of Ohio hospital discharge data.
5. Create a permanent and stable funding mechanism for the development of:
 - A statewide emergency department surveillance system that uses the CDC's *Data Elements for Emergency Department Systems*. (www.cdc.gov/ncipc/pub-res/deedspage.htm)
 - A statewide coroners' database.
 - A statewide school injury surveillance system.
 - An occupational injury surveillance system based on the U.S. Bureau of Labor Statistics injury data collection system.
 - A statewide toxic exposure data collection system.
 - Incentives (e.g., related grant funding, etc.) to improve records completion for all statewide injury databases.

D. Promote the use of injury prevention guidelines and evaluation measures that are based upon current evidence-based research and literature.

As part of the statewide coalition (described below), create a committee with responsibility for ongoing review of the effectiveness of prevention programs.

Common Themes and Core Recommendations to Prevent Injury in Ohio

Theme: Improved statewide coordination of programs is needed.

E. Coordinate the development of leadership and infrastructure to identify, promote and respond to injury prevention needs at the state and local level.

1. Implement recommendations from the State and Territorial Injury Prevention Directors' Association's (STIPDA) report, *An Assessment of the Ohio Injury Program, March 19-22, 2001*.
2. Strengthen the structure and funding of the Ohio Department of Health's Injury Prevention Section to provide technical assistance, training and coordination of activities, and support to state and local injury prevention efforts.
3. Create a statewide, interdisciplinary injury prevention coalition and provide a permanent funding mechanism to hire a full-time coordinator.

F. Coordinate EMS, trauma care and public health agencies with other injury prevention programs at the national, state and local levels to increase collaboration.

1. Increase interagency collaboration and coordination between state agencies and organizations concerned with the prevention of injury, in particular the Ohio departments of Health and Public Safety, including the EMS Board and Trauma Committee, the Bureau of Workers' Compensation, Ohio departments of Education, Mental Health, Aging, Transportation, Natural Resources and other relevant agencies.

G. Promote the use of coordinated, community prevention programs - that are multifaceted, evidence-based, and use effective evaluation by public health agencies, trauma centers, emergency medical services and other programs.

1. As part of the statewide coalition, create a committee with responsibility for injury prevention education.

2. Increase awareness, through statewide public education programs, that injury is a preventable public health problem and promote strategies for prevention through collaborative community programs.
 - Create an injury prevention Web site, listserve and toll-free referral number.
 - Promote materials to health care, government, and other groups working with at-risk populations.
3. Provide relevant training on injury surveillance and prevention strategies for professionals including: policy makers, law enforcement, nurses, physicians, EMS, teachers, child care professionals, extended care facility and senior care workers, employers, public health professionals and others.
4. Incorporate age-appropriate education on injury prevention, life skills, conflict resolution, parenting skills, bullying and other related issues into school curricula. Provide and promote standardized training materials for classroom use by teachers and other school professionals.

Theme: Injuries disproportionately affect those living in poverty, and the young and the old.

H. Promote injury prevention programs that focus on populations most at risk based on injury surveillance. Children and older adults living in poverty should be high priority.

Theme: Alcohol use is an important risk factor for injury.

- I. Fund and support initiatives that address prevention of alcohol and other drug-related injuries. These initiatives should include education, legislation, coalition building, and screening and intervention by health care professionals.

Common Themes and Core Recommendations to Prevent Injury in Ohio

Theme: Legislation can be an effective strategy for preventing injuries.

J. Enact or strengthen state and local legislation and policies which lead to the prevention of injuries.

1. The statewide coalition should monitor and advocate for policies and legislation which enhance the safety of Ohioans.
2. Provide information and resources to relevant agencies to support injury prevention legislation.
3. Enact legislation and policy to prevent injuries. Refer to pages 31-32 for specific policy and legislative recommendations.



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INJURY IN OHIO

A Report from the
Ohio Commission on the Prevention of Injury

November 2003

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This report is dedicated to the memory of Rich Van Horn, Ohio Department of Natural Resources.

Message from the Commission Chair

November, 2003

Dear Colleagues,

Injury is the great modern plague, and Ohio's challenge is clear. We must apply to injury the same public health approaches that have been successful in combating many other diseases and public health problems. Prevention of injury is within our grasp.

The magnitude of the injury problem in Ohio is staggering. Injury claims the lives of more than 5,000 Ohioans each year and is the leading cause of death and disability among Ohio citizens from age one through 34 years. The costs and long-term consequences of injury on the healthcare system, the workplace, and among survivors and their families are enormous. By any measure, injury is the most significant public health problem facing our state's population.

The Ohio Commission on the Prevention of Injury, whose creation was authorized by House Bill 138 in the year 2000, brought together experts in multiple disciplines from across the state. This report is the product of two years of work by commission members. It is a consensus document that incorporates the best information available on existing and potential injury prevention programs in Ohio. Though there are many existing activities to prevent injuries in our state, there are also critical gaps in our efforts to address the problem. There is a lack of injury surveillance systems that would provide the information needed to focus our limited resources more effectively. Ongoing prevention efforts too often lack coordination among state and local agencies and groups in the private sector. Indeed, many other states lead Ohio in efforts to prevent injury among their citizens. While acknowledging the successes of ongoing programs, this report makes recommendations for improvement of existing programs and implementation of new injury prevention efforts.

I wish to thank the members of the commission for their hard work and dedication. I am impressed by the collective knowledge, commitment and compassion that this group has demonstrated during the development of this report. I wish to thank Director Nick Baird, MD and Dr. Virginia Haller and other members of the Ohio Department of Health for their support of the Commission's work. I also wish to recognize and thank the representatives of other Ohio governmental agencies, the state legislature, and other professional and advocacy groups from around the state for their invaluable contributions to the commission's report. Special thanks goes to Ms. Pamela Leimbach for her administrative assistance, and to Ms. Christy Beeghly for her outstanding contributions to the final report.

It is my hope, and that of the entire commission, that this report will serve as a guide for new statewide efforts to combat the leading public health problem of injury. This report provides a blueprint for a state strategic plan for the prevention of injury. Through increased collaboration of state government, professional and advocacy organizations, and the private sector, and with increased commitment of resources that are commensurate with the magnitude of this public health problem, the high financial costs of injury will be reduced, and Ohioans will enjoy safer and healthier lives.

Gary A. Smith, MD, DrPH
Director, Center for Injury Research and Policy
Columbus Children's Research Institute, Children's Hospital

The Ohio Commission on the Prevention of Injury

The Commission's Work

Ohio's 123rd General Assembly passed House Bill 138, authorizing a statewide trauma system in November 2000. Section Five of this legislation required the Ohio Department of Health to form a multi-disciplinary commission on the prevention of injury, with particular emphasis on the pediatric and geriatric populations in Ohio (*Appendix D contains the full text of Section Five of H.B. 138*).

In October 2001, commission members from across the state first gathered to discuss the current status of injuries and prevention efforts in Ohio. They developed a strategy and over the next two years, regularly convened to produce a consensus-based report.

Committees were formed to examine existing injury policies, programs and data sources, and document needs. Commission members identified chapter topics, drafted and carefully reviewed chapters, and achieved consensus in issuing recommendations. Common themes and needs emerged after assessing individual injury areas. The process resulted in core recommendations for improving injury prevention efforts in Ohio. The result of the commission's work is this comprehensive report examining the current status of injuries in Ohio with recommendations for future action. Reports for individual injury areas (e.g. fire/burn, motor vehicle-related injury, etc.) are available electronically at www.state.oh.us/odps/division/ems/ems_local/trauma/trauma_commissions.htm

Goals

The long-term goal of the Ohio Commission on the Prevention of Injury is to reduce injury and injury-related death to Ohioans. Implementation of the commission's report recommendations will facilitate achievement of this goal.

The commission largely used Healthy People 2010 (HP 2010) as a guideline for setting goals for Ohio. HP 2010 is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats. The objectives are built on scientific knowledge and are designed to measure progress over time. Thirty-nine HP 2010 objectives relate to unintentional and intentional injury. HP 2010 objectives related to injury are defined throughout this report for most of the injury topics and, where available, Ohio injury rates are compared to those of the country as a whole. Additional information about HP 2010 and the methods used to set national goals can be found at www.healthypeople.gov/default.htm.



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INJURY IN OHIO

Defining the Problem

Injury can be defined as physical damage caused by a transfer of energy to tissues of the body. This energy can come in various forms, kinetic/mechanical, thermal, chemical or electric. Injury also can be caused by a lack of needed elements such as heat or oxygen. Injury can result from unintentional (accidental) or intentional acts.

Injuries are largely classified by the:

- Events and activities that preceded them (e.g. motor vehicle-related, occupational-related).
- Outcome or result of the transfer of energy (e.g. traumatic brain injury, burns).
- Intention of the acts causing the injury (e.g. abuse, suicide, homicide).

This report will group injuries into these categories to organize a discussion of the topics. Overlap among these categories exist, for example, motor-vehicle crashes can cause traumatic brain injuries and burns can be used as a form of abuse. The report's chapters reflect this overlap as appropriate.

Throughout this report, "unintentional injuries" will be used to describe those injuries resulting from accidents. The word "accident" suggests something unpredictable, random and therefore not preventable. Most injuries are predictable and preventable. Using the word "accident" hides this fact.

Given the perspective that injuries are predictable and preventable, action can be taken to intervene. Epidemiologic studies and surveillance systems provide information to identify how, when and where injuries typically occur. We can identify who may be at the highest risk for injuries. We can also target interventions to prevent specific types of injuries.



Photo courtesy of the National SAFE KIDS Campaign

Individual Injury Area Reports

The common themes and core recommendations found in this report are based on the findings of individual injury area reports (e.g. fire/burn, motor vehicle-related injury, etc.) that are available electronically at: www.state.oh.us/odps/division/ems/ems_local/trauma/trauma_commissions.htm

CDC State of Ohio Injury Profile

The Centers for Disease Control and Prevention has created injury profiles for each state to document the injury problem and compare states against a national profile. Ohio's profile can be found at: www.cdc.gov/ncipc/StateProfiles/sip_oh.pdf

Overall Goals

Reduce injury deaths of all causes and intents.

<i>Goal</i>	<i>37.0 deaths per 100,000 (better than the best state)</i>
OH 1998	43.7
US 1998	54.4

Data Source: NCHS Vital Statistics System for numbers of deaths. Bureau of Census for population estimates.

Reduce deaths caused by unintentional injuries.

<i>HP 2010 Goal</i>	<i>17.5 deaths per 100,000</i>
OH 1998	29.5
US 1998	35.0

Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Reduce deaths caused by violence.

<i>Goal</i>	<i>10.0 deaths per 100,000 (better than the best state)</i>
OH 1988	13.8
US 1998	18.0

Data Source: NCHS Vital Statistics System for numbers of deaths. Bureau of Census for population estimates.

Reduce hospital emergency department visits caused by injuries.

<i>HP 2010 Goal</i>	<i>126 hospital emergency department visits per 1,000.</i>
OH	Identify baseline
US 1997	131

Data source: National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC, NCHS.

Increase the number of states and the District of Columbia with statewide emergency department surveillance systems that collect data on external causes of injury.

<i>HP 2010</i>	<i>All states and the District of Columbia.</i>
OH	No system in place
US 1998	12 States

Data source: External Cause of Injury Survey, American Public Health Association (APHA).

Increase the number of states and the District of Columbia that collect data on external causes of injury through hospital discharge data systems.

<i>HP 2010</i>	<i>All states and the District of Columbia.</i>
OH	System exists but data is not easily accessed
US 1998	23 States

Data source: External Cause of Injury Survey, American Public Health Association (APHA).

DATA

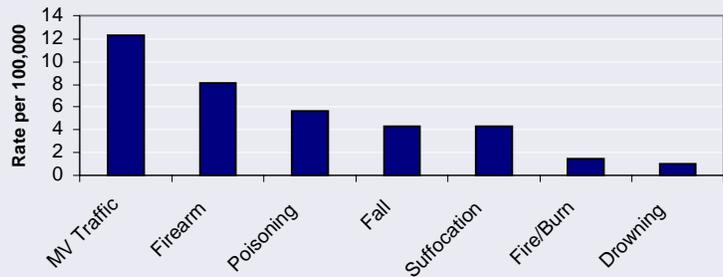
Injury is one of the great modern plagues. When ranked among other public health problems, injury is arguably the leading threat to the health and well being of the general population in the United States. In 2000, intentional and unintentional injuries caused more than 148,000 deaths, 1.4 million hospitalizations and 29.5 million emergency department (ED) visits in the United States.

Injury is the leading cause of death and disability for Ohioans ages 1 to 34 and the sixth leading cause of death for all age groups. Thousands of Ohioans are killed each year from injury-related causes. More than 5,100 Ohioans died from injuries in 2000. Motor vehicle traffic, firearms, poisoning, falls, suffocation, fire/burn and drowning are the leading causes of injury death per 100,000 Ohioans (*Figure 1*). During 1999-2000, Ohio's injury death rate was 45.8 deaths per 100,000, which was less than the national rate of 54.0 but still higher than the HP 2010 target of 37.0 deaths per 100,000.

Injury death rates have remained relatively constant in the United States during the 20th century. In contrast, disease rates have declined (*Figure 2*). By 1980, death rates from tuberculosis and gastrointestinal disorders had declined by 99 percent compared to the turn of the century. Death rates from influenza and pneumonia declined by 85 percent. The decreased rates were a result of a focused energy and application of scientific principles to disease control. Infectious disease rates have decreased due to a better understanding of disease etiology, improved treatment and sanitary conditions, and targeted prevention

Figure 1.

Leading Causes of Injury Death
per 100,000 Ohioans, 1999-2000

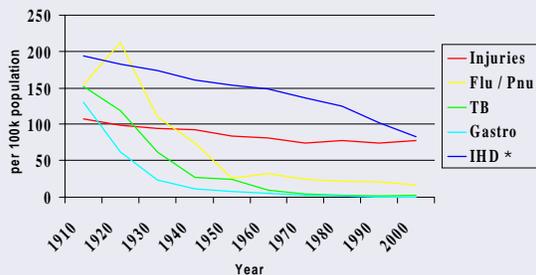


efforts. In contrast to disease, during this century, injury death rates have declined by only 30 percent. Injury is at present responsible for three times as many deaths as are influenza and pneumonia.

Unintentional causes lead to the greatest proportion of injuries and injury-related death. During one year in Ohio, unintentional injury fatalities exceed that of 12 jet crashes, each causing 260 casualties. Imagine one large jet crash every month in Ohio. This is the equivalent in fatalities to those that resulted from the 2001 terrorist attack on the World Trade Center. For the entire United States, annual injury fatalities equal more than 360 jumbo jet crashes with no survivors. That is nearly one jet crash *each day*. Such catastrophic events would merit immediate public action and attention. However, because injury deaths occur in isolation or in small clusters, they often go unnoticed except by those directly affected by the loss.

Figure 2.

Death Rates from Injuries and Other Causes, United States, 1910 - 2000



* Ischemic Heart Disease

During one year in Ohio, the number of deaths caused by unintentional injuries exceeds that of one large jet crash per month, each causing 260 casualties.



Many perceive these deaths to be accidents, unforeseen tragedies happening by chance. They are not.

The leading causes of unintentional injury death in Ohio are motor vehicle traffic, falls, poisonings, suffocations, fire/burns and drowning. Motor vehicle traffic accounted for 40 percent of unintentional injury deaths in 1999-2000.

When measured in Years of Potential Life Lost (YPLL), injuries account for almost one-third of all premature death (YPLL before age 65) in

the United States. They account for more YPLL than heart disease, cancer and stroke combined, which are the next leading causes of YPLL in the United States. Injury accounts for so many YPLL because it is the leading cause of death from ages 1 - 34 years.

In Ohio during 1999-2000, injuries accounted for the most YPLL before age 65 (*Figure 3*) and unintentional injuries alone accounted for the second most YPLL, after cancer (malignant neoplasms).

Figure 3.

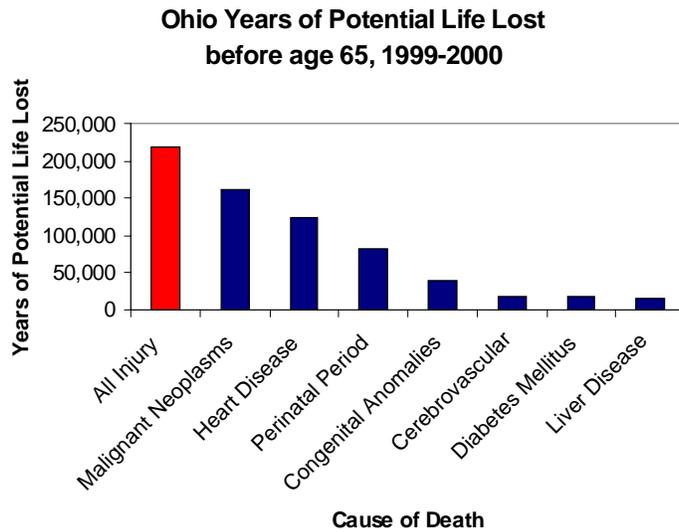


Figure 4.



Source: National Center for Health Statistics (1999)

Although fatalities are the most severe and final consequence of injuries, they represent only the tip of the iceberg when examining the burden of injury. The injury pyramid (Figure 4) depicts that for each injury death in the United States, there are approximately 18 hospitalizations and 233 emergency department visits. At this time, we do not have corresponding Ohio data for non-fatal injuries, however, estimates can be made based on the injury pyramid. Given that approximately 5,000 Ohioans die from injuries each year, the Ohio injury pyramid is presented below (Figure 5).

Of the millions of Ohioans who survive injuries, many suffer long-term consequences such as permanent disability, time lost from work and family, costly medical expenses and pain and suffering.

During 2000 in the United States, unintentional falls were the leading cause of non-fatal injury for all ages, followed by unintentional struck by/against and unintentional motor vehicle occupant as the second and third causes, respectively (Figure 6). Corresponding Ohio-specific data is not available for non-fatal injuries.

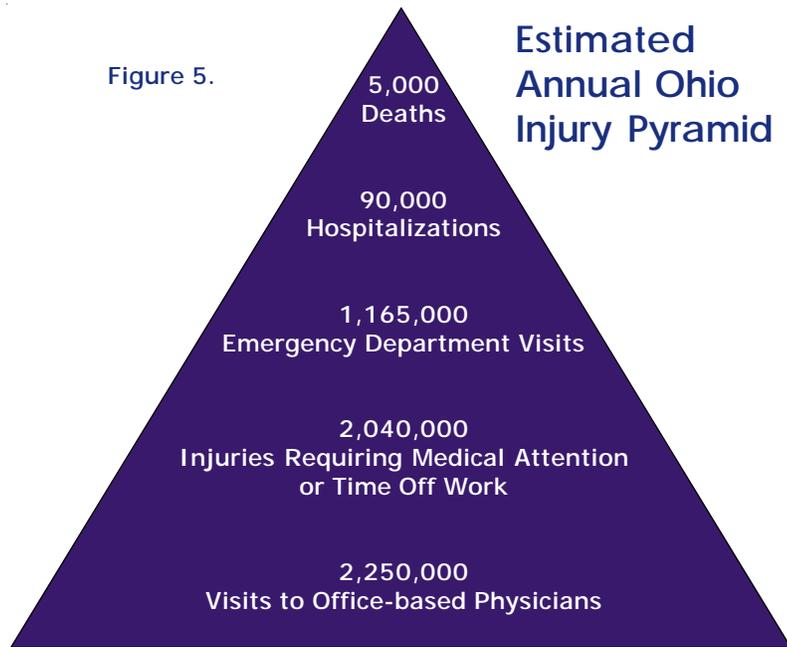
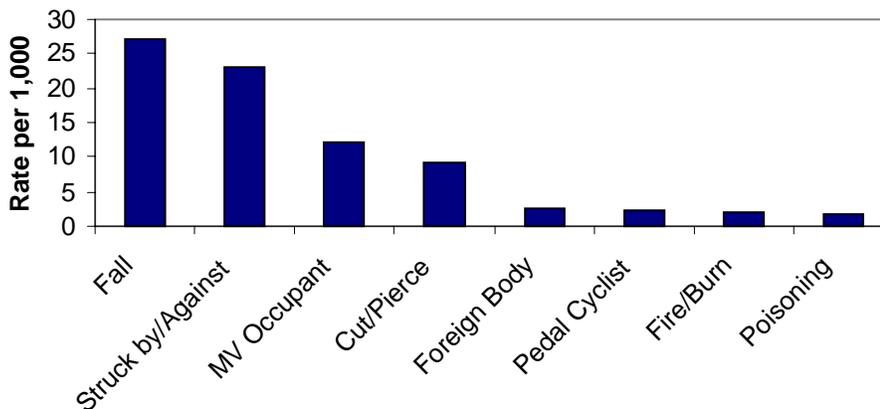


Figure 6.

**Leading Causes of Non-fatal Injury in the U.S.
per 1,000, 2000**



INTENTIONAL Vs. UNINTENTIONAL

This report discusses injuries resulting from both intentional and unintentional acts. There are clearly fundamental differences in the underlying causes of intentional and unintentional injuries. Efforts to prevent intentional injuries often involve more complex issues including mental health, family and group dynamics.

Approximately two-thirds of injuries are unintentional and one-third are intentional (Figure 7). During 1999–2000 in Ohio, the violence-related injury death rate was 13.8 per 100,000 compared to the U.S. rate of 16.9 per 100,000. These figures include suicides, homicides and legal intervention. Homicide alone was within the top eight leading causes of death in Ohio during 1999-2000 for all age groups from 1 to 44 years. The violence-related injury death rate in Ohio varies by age group and race (Figure 8). Black individuals in age groups from 15 to 39 years suffer the highest intentional injury death rates.

Nationally, nonfatal violence-related injury rates increase up to age 24 and then decrease with age. During 2000, injury rates ranged from 217.5 per 100,000 ages 0-4, to a high of 1,828.6 per 100,000 ages 20-24, to a low of 50.3 per 100,000 ages 85 and older. The leading cause of violence-related nonfatal injury for all age groups is struck by/against assault followed by self-harm poisoning, however, the leading causes vary considerably among age groups.

Although there are fundamental differences in addressing intentional and unintentional injuries, factors common to both exist. Examining these common factors or intersection points will facilitate consolidating prevention efforts, and possibly reducing program-related costs. It is critical that planners and decision makers from concern with either type of intent sit at the table and decide where consolidation makes sense. Specific examples of such approaches are outlined in the intentional injury chapters that can be found online at www.state.oh.us/odps/division/ems/ems_local/trauma/trauma_commissions.htm.

Figure 7.

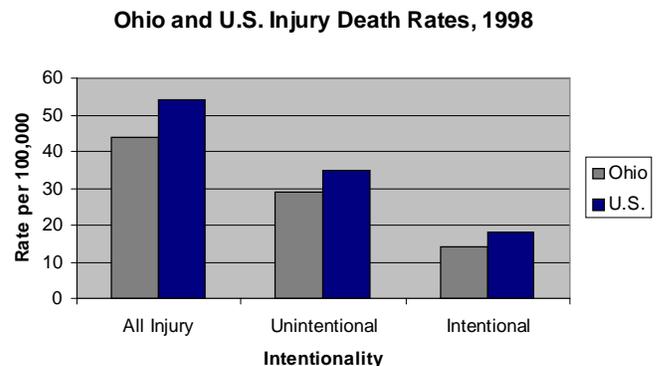
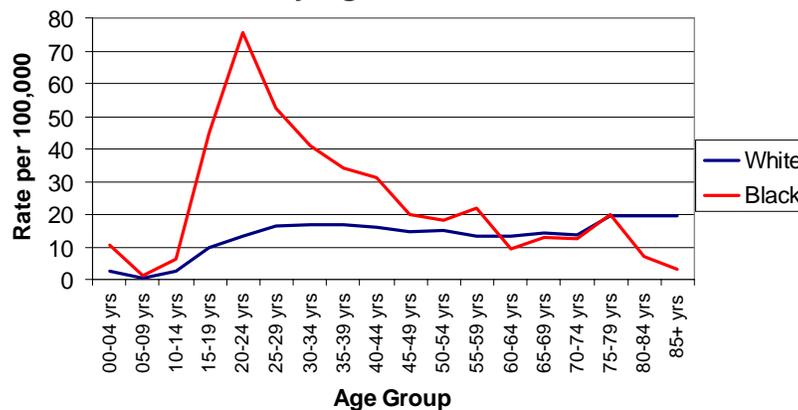


Figure 8.

Ohio Intentional Injury Death Rates per 100,000 by Age & Race, 1996-1998



COSTS & CONSEQUENCES

The greatest cost of injury is measured in human suffering and loss. At the same time, the financial repercussions are staggering. In the United States, more than \$224 billion is spent annually on medical care, rehabilitation and lost income and productivity resulting from injury. The federal government pays about \$12.6 billion each year in injury-related medical costs and about \$18.4 billion in death and disability benefits. Insurance companies and other private sources pay approximately \$161 billion (*CDC Injury Fact Book 2001-2002*). Injury-related deaths and disabilities have a profound negative effect on the productivity of the U.S. workforce.

The total monetary cost of fatal injury incidences in Ohio from 1993 to 1997 for persons aged 24 years and younger was more than \$1 billion (*Table 1*). This total includes medical, legal, administrative costs and estimated lifetime productivity loss. Motor vehicle-related deaths account for 53 percent and firearm-related deaths account for 28 percent of the costs.

In State fiscal year (SFY) 2002, Ohio Medicaid provided health care services associated with an *inpatient diagnosis* of trauma for 11,616 people. Ohio Medicaid spent more than \$201 million in state and federal funds in SFY 2002 for services directly related to their trauma. This figure

understates total trauma spending because it does *not* include prescription drug or skilled nursing facility costs for services related to their trauma, and it does not include anyone with an outpatient diagnosis of trauma.

A recent assessment of injury-related Ohio Medicaid spending over a four-year period reveals the following. In SFY 1999, 9,096 Ohio Medicaid consumers used health care services due to a trauma incident occurring during SFY 1999. These consumers spent approximately \$235 million in total health care expenditures during the first year after the injury. One-third, or at least \$78 million, of these health care expenditures was directly related to the injury. Over the four-year period following the trauma incident, Ohio Medicaid spent \$566 million in total health care expenditures for this group, of which \$92.8 million was directly tied to the trauma.

Those connected with the victim also experience the consequences of the injury. A non-injured spouse may need to provide full-time care to a disabled spouse, resulting in loss of work productivity and possibly lost income for two individuals. Children are profoundly affected when parents are injured and can no longer care for them. These significant costs are more difficult to calculate.

Table 1.

Ohio Fatal Injury Incidences, Estimated Costs for Ages 0-24, 1993-97				
Cause of Death (All Intents)	Total Monetary Cost of Injuries	Total Years Potential Life Lost	Mean Annual Frequencies	Average Rate/100,000
MV Traffic	\$545,152,173.00	27,948	456.6	11.6
Firearm	\$298,899,271.00	16,753	279.6	7.1
Fire/Burn	\$48,015,535.00	3,599	51.8	1.3
Drowning/Submersion	\$47,796,514.00	3,219	48.8	1.2
Suffocation	\$47,382,041.00	3,223	48.6	1.2
Poisoning	\$20,877,871.00	1,152	19.4	0.5
Falls	\$11,856,837.00	732	11.6	0.3
Other Transport	\$10,343,542.00	596	9.8	0.3
Non MV Pedestrian	\$9,218,230.00	593	9.2	0.2
Cut/Pierce	\$5,139,705.00	287	4.8	0.1
Machinery	\$4,409,630.00	257	4.2	0.1
Struck by/Against	\$3,451,992.00	243	3.6	0.1
Non MV Pedal Cyclist	\$1,207,458.00	77	1.2	0
Natural/Environmental	\$818,553.00	50	0.8	0
Total	\$1,054,569,352.00	58,729	1042.8	26.6

Source: Children's Safety Network National Injury Data Technical Assistance Center and Children's Safety Network Economics and Insurance Resource Center.

RISK FACTORS

Factors that place a certain group of individuals at a higher risk for injury must be identified to effectively target prevention efforts. Risk factors vary according to the type of injury, however, there are some risk factors that are common to nearly every injury category.

LOW INCOME

Poverty is a risk factor for injury. Children from low income families are twice as likely to die in a motor vehicle crash, four times more likely to drown and five times more likely to die in a fire (*NSKC, Children at Risk Fact Sheet. Washington, DC, 2003*).

Approximately one out of 10 Ohioans were defined as having poverty status in 1999. Fourteen percent of children younger than 18 years and 8 percent of elders older than 64 years were living in poverty.

For these individuals, housing may be substandard and more hazardous. They may be living in neighborhoods with busy streets and without safe recreation spaces for children. In addition, increased exposure to physical hazards and lack of access to health care are contributing factors affecting the occurrence and severity of injury. Individuals living in poverty may not have access to prevention education or the resources to obtain safety devices such as child safety seats, bicycle helmets and smoke alarms. Other factors related to low income that may increase one's risk for injury include single-parent households, lack of education and young maternal age.

Violence and poverty have been positively correlated. Stress and frustration may lead to a higher likelihood of abuse and participation in violence-related activities.

Children from low-income families are twice as likely to die in a motor vehicle crash, four times more likely to drown and five times more likely to die in a fire.



Photo courtesy of the National SAFE KIDS Campaign

AGE

As recognized by the legislators who drafted House Bill 138, age is a significant factor affecting the occurrence and severity of injury. Children and older adults are disproportionately affected by injuries. As a result, the commission was given a specific mandate to emphasize the injury prevention needs of these groups. Where relevant, the authors of the report's chapters have brought attention to these issues.

Young Ohioans

Children are not small adults. They are developmentally, anatomically and physiologically different than adults. These differences place them at greater risk for injury and affect the severity of the injury. In addition, the developmental and cognitive abilities of children play a significant role in their vulnerability to injury. Appendix A contains tables listing some of the physical differences and describing the injury risks to children by age group.

Injuries take a significant toll on the young. Former Surgeon General C. Everett Koop said on the subject of childhood injury, "If some infectious disease came along that affected one out of every four children in the United States, there would be a huge public outcry and we would be told to spare no expense to find the cure – and to be quick about it."

- During the preschool, elementary and middle school years, injury accounts for approximately as many deaths as all other causes combined.
- Every day in the United States, more than 28,000 youth ages 19 years and younger are injured seriously enough to require medical treatment in an emergency department, totaling more than 10 million annually.
- Each year in the United States, more than 17,000 youth ages 19 years and younger will die as a result of injury (22.5 per 100,000). More than 630 will die in Ohio (20.0 per 100,000).
- Injuries have been the leading cause of death in children for nearly 40 years.
- One in four children will suffer an injury during the next year that will require medical attention.
- It is estimated that as many as 90 percent of unintentional injuries can be prevented.

Regardless of how the injury problem is measured, injury rises to the top of the list of public health threats to children.



**"If some infectious disease came along that affected one out of every four children in the United States, there would be a huge public outcry and we would be told to spare no expense to find the cure – and to be quick about it."
Former Surgeon General
C. Everett Koop**



Infants and Young Children

During the first year of life, risk of death due to injury is very high. In absolute numbers, more children die due to injury during this year than during any single one-year period during the preschool and early school years.

During 1999-2000 in Ohio, the unintentional injury death rate for infants younger than 1 year of age was 33 per 100,000. This is the highest age-specific unintentional injury death rate until age 17. The leading causes of unintentional injury death for infants are suffocation, fire/burn, motor vehicle traffic and drowning. Suffocation accounted for 72 percent of the deaths in 1999-2000.

For young children aged 1 to 4 years, fire/burn, motor vehicle traffic crashes and drowning accounted for 72 percent of unintentional injury deaths in Ohio during 1999-2000. Homicide was the second leading cause of death for this age group.

Children

For children aged 5 to 14 years, motor vehicle crashes, drowning and fire/burns accounted for more than 72 percent of the unintentional injury deaths in Ohio during 1999-2000. For children ages 5 to 9 years, homicide was the fourth-leading cause of death. For children ages 10 to 14 years, suicide was the third-leading cause and homicide was the fifth-leading cause of death. Firearms are the cause of death in nearly half of the homicides for ages 5-14.

For children ages 1 to 14, the leading cause of non-fatal intentional injury is struck by/against assault, followed by sexual assault.



Teens and Young Adults

During the teenage and young adult developmental period, risk-taking behavior, use of alcohol/other drugs and peer pressure contribute to a high risk for unintentional and intentional injury.

During 1999-2000 in Ohio, unintentional injuries, suicides and homicides were the three leading causes of death, respectively for youth ages 15 to 19. Firearms were the cause of death in 67 percent of homicides and 46 percent of suicides. Suffocation was the cause of death in 40 percent of suicides in this age group.

The Ohio Youth Risk Behavior Survey (YRBS) is a biennial survey conducted among 2,000 randomly sampled Ohio high school students to assess health-related risk factors. Summary findings related to unintentional and intentional injury from the 1999 YRBS are described below.

From 1993 to 1999, fewer teens reported carrying a weapon such as a gun, knife or club both on and off school property. Fewer students were involved in physical fights. Although Ohio's teenagers are less violent than in past years, there is still room for improvement. Fourteen percent of female students have been forced to have sexual intercourse when they did not want to. One out of 10 students were hit, slapped or physically hurt by their boyfriend or girlfriend in the last 12 months. Eight percent of Ohio high school students actually attempted suicide in 1999.

More Ohio teens are buckling up. Sixteen percent of teens reported that they never or rarely wore a seatbelt when riding in a car in 1999, a 33 percent decrease over the 24 percent in 1997 but still too high. Very few teens are wearing a helmet while riding a bicycle (92 percent rarely or never wear one). Helmet use while riding a motorcycle is more frequent, with 39 percent rarely or never wearing a helmet. Unfortunately, there has been a 41 percent increase in the percentage of teens who drive a vehicle after drinking alcohol (12 percent in 1993 to 17 percent in 1999). Trend data from 1993 through 1999 indicate a steady increase in males, females, white and African-American students driving a car or other vehicle after drinking alcohol.

Nationwide, unintentional struck by/against was the leading causes of non-fatal injury followed by motor vehicle traffic as the second-leading cause for ages 15-19.

Older Ohioans

At the other end of the age continuum, elders have an elevated risk for injury (Figures 9 & 10). As with children, anatomical, physiological and cognitive changes help to explain the heightened risk. Sight, balance and coordination may wane which may lead to a fall. Elders may be socially isolated and dependent leading to a higher risk for abuse or suicide. Reaction times may increase leading to risk for motor vehicle crashes. Poor sight or decreased mental capacity may lead to unintentional medication overdoses or poisonings. In addition, physical changes may lead to greater severity of injuries and less resiliency. Appendix A contains tables listing some of the physical and cognitive changes that cause greater injury risk for elders.

Ohio's population 60 years and older comprises more than 15 percent of the state's total and the percentage who are 85 years and older is rising steadily. If ignored, the injury problem to elders will grow as more Ohioans age into the risk category.

In Ohio during 1999-2000, motor vehicle traffic was the leading cause of unintentional injury death, followed by falls and suffocation for ages 65 to 74. For those over the age of 75 years, falls account for the most unintentional injury deaths, followed by motor vehicle traffic and suffocation. Nationwide, unintentional falls are the leading cause of nonfatal injuries in this age group also.



Figure 9.

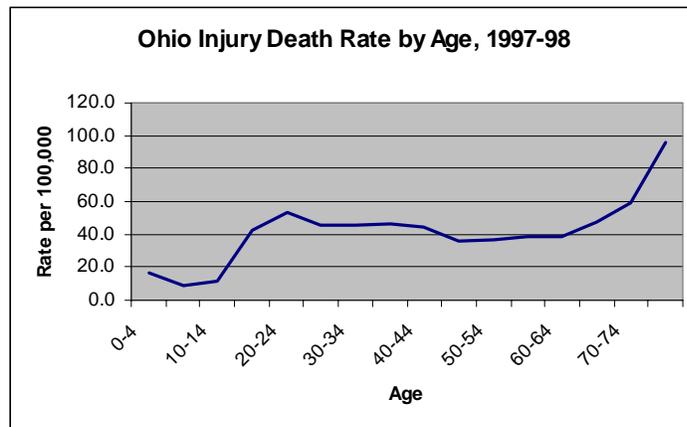
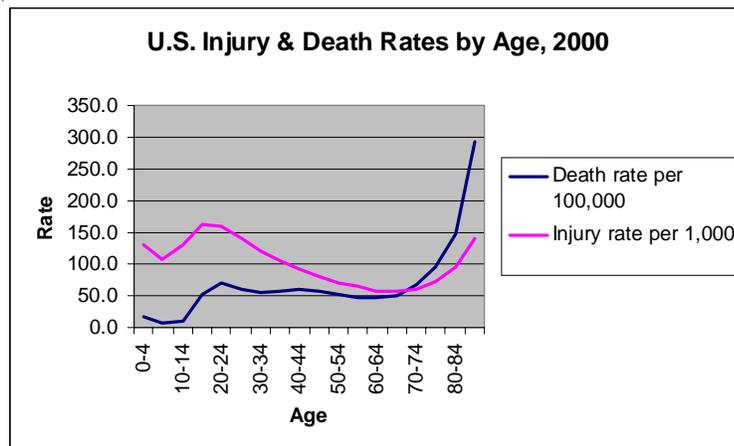


Figure 10.



GENDER

At most ages and for most causes of injury, males are at higher risk than females. Males are at higher risk than females for motor vehicle crashes, falls, drowning, homicide and suicide completion.

Although in general males are at an increased risk for injury, females are at an increased risk for specific injuries. These include hip fractures from fall-related injuries, intimate partner violence and sexual assault. Females are at much higher risk for fatal and nonfatal injury from intimate partner violence. In a national survey, one out of four women reported being raped or physically assaulted by an intimate partner at some time in their lives; only 8 percent of men reported such an experience. Women are more likely to attempt suicide than men.



Photo courtesy of the National SAFE KIDS Campaign

RACE AND ETHNICITY

Racial disparities in injury rates have been noted. African Americans have the highest overall injury rate of nearly all other racial and ethnic groups. However, many of these differences disappear when socioeconomic status is controlled. Racial disparities appear to relate more to living in impoverished neighborhoods as discussed above, than with race or ethnicity.

African Americans in Ohio are disproportionately more likely to be living in poverty, and thus are at an increased risk for injury. More than 25 percent of African Americans in Ohio are living in poverty, compared to 8 percent of whites.

For Ohio African Americans aged 15-24 and 25-34 years, homicide exceeded unintentional injuries as the leading cause of death in 1999-2000. Homicide was the fourth- and fifth- leading cause of death respectively, for whites in these age groups.

GEOGRAPHY

Individuals living in rural areas are at greater risk from unintentional injury-related death than those living in urban areas. Rural areas are less likely to have organized systems of trauma care, resulting in prolonged response and transport times. Nearly one-fourth of Ohio's population lives in rural areas as defined by the U.S. Census Bureau.

In contrast, living in an inner city places one at greater risk for nonfatal injuries than those living in rural and suburban areas. Proximity to quality medical care may affect injury survival rates in urban areas.



*Photo courtesy of USDA Natural Resources Conservation Service,
<http://photogallery.nrcs.usda.gov>*

COMMON THEMES

The consensus-based process used by the commission members to develop this report led to the identification of common, overarching themes. These themes provided the foundation for core recommendations in this report. A brief discussion of the manner in which these recurring themes affect injury will be discussed.

THE COST BENEFIT OF PREVENTION

Injuries are extremely costly to individuals and society. The good news is that prevention efforts confer benefits outweighing the costs.

If bicycle helmets, working smoke alarms and child vehicle restraints were considered as important for health as immunizations and other preventive medications (e.g. blood pressure medication), millions of dollars would be saved. A paradigm shift is indicated that views safety interventions as a part of routine health and wellness – a “vaccine” against injury. Those entities benefiting from the prevention of injuries include insurance companies, health care facilities, employers and government.

Following are a few examples of the cost benefit of preventing injuries:

- For every dollar spent on a bicycle helmet, \$30 is saved in direct medical care costs and other costs to society.
- For every dollar spent on a child safety seats, \$32 is saved in direct medical costs and other costs to society.
- For every dollar spent on a smoke alarm, \$69 can be saved in fire-related costs.
- For every dollar spent on poison control centers, \$7 is saved in medical costs.

If bicycle helmets, working smoke alarms and child vehicle restraints were considered as important for health as immunizations and other preventive medications (e.g. blood pressure medication), millions of dollars would be saved.



Photos courtesy of the National SAFE KIDS Campaign

THE NEED FOR IMPROVED INJURY SURVEILLANCE

Strategies to prevent and reduce injury take a population-based approach similar to other public health strategies to prevent and control disease. Comprehensive, population-level injury data, which is lacking in Ohio, is important for a number of reasons. Decision makers and program administrators use injury data to assess needs and identify funding priorities. Program planners and coordinators use data for quality improvement and program evaluation. Health care institutions use data for quality improvement purposes. Data linkages provide a view of the entire spectrum of injury from risk factors to costs, outcomes and long-term impact on society.

The lack of statewide injury surveillance impedes our ability to adequately describe the injury problem in Ohio. Several injury databases recommended by the Centers for Disease Control and Prevention and the State and Territorial Injury Prevention Directors Association are either in their infancy stages of development, being contemplated or have not been explored in Ohio. Existing Ohio injury databases include death records, EMS incident reporting, a statewide trauma registry, child abuse/neglect reports, adult protective services, traffic crash reports, crime statistics, fire incident reporting, occupational-related injuries, child fatality review, hospital discharge and farm-related injuries. A table further describing the data available from each of these sources, restrictions to access the data and the years for which data are available, can be found in the Appendix.

Most of these databases exist in isolation at this time. They are housed and controlled by separate agencies and are not linked to other sources of data. Analysis and reporting of the data occurs often within this context and



Photo courtesy of the National SAFE KIDS Campaign

without a broader perspective of the data's use to other groups. These databases will be most useful if continuing discussions guide analysis of the data. A workgroup should be formed including representatives familiar with those databases. This group can identify opportunities for linkage and sharing of data as well as broader reporting and uses of the data

to improve administrative decision-making abilities. They can also make recommendations for the development of new surveillance systems.

A statewide injury surveillance system that tracks all injuries is a most pressing need. This system should include injuries treated at urgent care centers, emergency

departments and hospitals, and it should have the capability to link injury records from events preceding the injury to long-term outcomes. Injury data from schools, child care centers and long-term care facilities are useful sources that should be considered.

Ohio will have the opportunity to focus injury prevention activities on the needs of high risk populations in this state as data collection grows and data analysis matures. This is preferred to implementing programs based on the assumption that the Ohio population mirrors that of the nation.

A statewide injury surveillance system that tracks all injuries is a most pressing need. This system should include injuries treated at urgent care centers, emergency departments and hospitals, and it should have the capability to link injury records from events preceding the injury to long-term outcomes.

THE NEED FOR INCREASED STATEWIDE COORDINATION OF EFFORTS

Many statewide and local prevention efforts are underway, each targeting the injury problem from a unique perspective. Participation on the commission provided members with the opportunity to view injuries from a broader perspective than that of their parent organizations. For example, those regularly addressing intentional injuries to children learned about the problem of injuries occurring in the workplace. Those focusing on pediatric injury prevention had the opportunity to learn how elders are disproportionately affected by injury as well. Members learned about new resources and sources of data available to them. Due to the important knowledge and resources shared by commission members, it is apparent that improved statewide coordination of injury prevention efforts would benefit all involved.

Interagency collaboration and coordination between state agencies and organizations concerned with the prevention of injury should be enhanced. Key organizations include the Ohio departments of Health and Public Safety, including the EMS Board and Trauma Committee, the Bureau of Workers' Compensation, Ohio departments of Education, Mental Health, Aging, Job and Family Services, Transportation, and Natural Resources. In addition, representatives from other stakeholder organizations should be invited to collaborate at the state level. These groups include the Ohio Hospital Association, the Ohio Children's Hospital Association, elder advocacy groups, Commission on Minority Health, Ohio PTA Association, Ohio Public Health Association, Association of Ohio Health Commissioners, MADD, regional trauma groups, law enforcement organizations, etc.

State-level infrastructure and leadership requires continuing support to increase coordination of efforts. This support will enable the provision of technical assistance, training, and coordination to state and local injury prevention efforts.

One strategy to increase coordination involves the creation of a statewide, interdisciplinary injury prevention coalition. The coalition would increase sharing of resources and data, and eliminate duplication of efforts. Funding for a full-time coordinator should be provided. Key responsibilities of this position should include the following:

- Facilitate the translation of report recommendations into action.
- Seek ways to improve communication, such as through the creation of a state injury prevention Web site, listserve and newsletter.
- Reduce duplication of prevention efforts, such as through the creation of a single point of contact toll-free referral number.
- Improve access to injury data.
- Seek additional funding for statewide coalition efforts.
- Improve the dissemination of well-evaluated and evidence-based prevention strategies.
- Facilitate the coordination of new committees/work groups developed as a result of the report recommendations.
- Serve as a state-level advocate for injury prevention, particularly focusing on the needs of the young and the old, the impoverished and other high-risk groups.
- Cultivate and coordinate expertise in various risk areas, such as through the development of a speaker's bureau and media contact list.

THE ROLE OF ALCOHOL

Alcohol is a risk or contributing factor in almost every category of injury, both intentional and unintentional. One of the most dramatic examples is the effect that alcohol has had on motor vehicle crashes. In 2002, alcohol was a factor in 40 percent of the motor vehicle injury-related deaths in Ohio. Alcohol use has also been linked to a substantial number of the injuries and deaths resulting from falls, fires and drownings. It also contributes to the incidence of physical fighting, homicide, suicide, family violence and sexual assault. Alcohol has been found to play a role in more than half of homicides and sexual assaults, more than half of burns, almost half of hypothermia and frost bite cases, and 40 percent of falls.

There are multiple ways in which alcohol and other drug use increases the risk for injury.

Intoxication:

- Decreases the level of alertness.
- Impairs motor function, diminishing coordination and balance, and increasing reaction time.
- Impairs judgment and results in poor decision making.
- Diminishes perception and cognitive abilities.
- Increases risk taking behavior and feelings of invulnerability (especially among adolescents and young adults).
- Reduces inhibitions and intensifies feelings of anger and depression.
- Is associated with increased violent behavior.

Additionally, chronic use may render a person more medically fragile, resulting in more severe injuries and less resiliency.

Although alcohol and other drug treatment approaches are somewhat beyond the scope of this report, the commission advocates for continued support of successful initiatives that address prevention of alcohol and other drug-related injuries. For example, programs that limit youth access to alcohol, provide treatment for those who abuse alcohol and other drugs, counsel high-risk groups about the role of alcohol in injury and enforce relevant laws are likely to have a measurable effect on injury rates.



Photo courtesy of the AAA Foundation for Traffic Safety



PREVENTION CONCEPTS & STRATEGIES

A science of injury prevention has emerged through the work of pioneers, such as William Haddon and Susan Baker, who have shown that injuries, like diseases, have predictable epidemiologic patterns and are largely preventable. Injury research and prevention efforts have gained the attention of the U.S. Congress, especially following the publication of *Injury in America: A Continuing Public Health Problem* by the National Research Council and the Institute of Medicine in 1985. In June 1992, a National Center for Injury Prevention was created at the Centers for Disease Control and Prevention (CDC) in Atlanta.

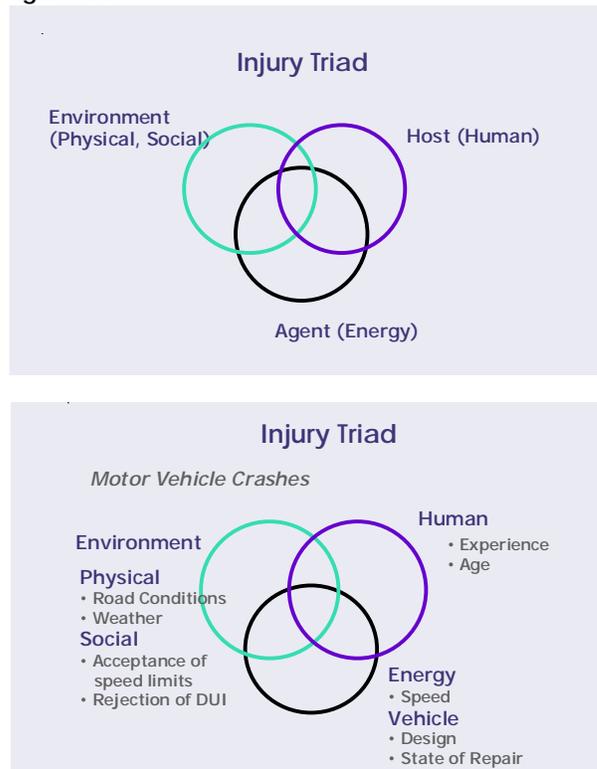
The Injury Triad

Contributing factors to injury are generally divided into three groups: host, environment (often subdivided into sociocultural and physical) and agent factors, frequently called the epidemiologic triad. The agent in the case of injury is the energy that is transferred or the cause of energy (e.g. fire/heat, car, gunshot, fall). The injury triad (Figure 11) presents examples of these factors for the case of motor vehicle crashes. Using prevention strategies that attack the injury triad from all directions will have the greatest likelihood of success. Therefore, a combination of strategies that address all of the factors, including host, environment and agent factors, should be used. Strategies should be prioritized based on the availability of resources and the highest probability of success.

The Injury Can be Prevented without Preventing the Event

A key concept in injury-prevention science is preventing the injury without preventing the event. For example, a child can be in a car crash but be protected by a properly fitting restraint system. The amount of energy transferred to the body does not exceed tissue tolerances and no injury occurs. However, given a similar crash where a child is improperly secured and is ejected from the vehicle, a serious injury is almost certain to occur due to the large amount of energy transfer. Injury-causing agents will be difficult to eliminate but we can modify many host and environment factors to mitigate energy transfer and reduce the risk of serious injury.

Figure 11.

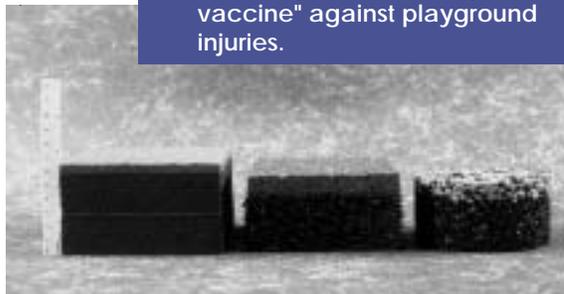


Use Passive Strategies When Possible

The epidemiologic triad (host, agent, environment factors) has been used to understand medical illnesses for more than a century. Regarding medical illnesses, we know that vaccines (passive strategy) are more effective public health tools than attempting to change behavior in high-risk groups (active strategy). This concept can also be applied to the science of injury control. When educational or other active strategies are used, they should be coupled with passive strategies when possible. These strategies do not require action by an individual for protection to occur. Using playground injuries as an example, an individual does not need to know that the playground equipment was designed to prevent entrapment. Passive protective strategies are very much like vaccines. The protection is automatically present, and the protective strategy will go into action when needed. "Technological vaccines" such as energy-absorbing playground surfacing, stationary activity centers (as opposed to wheeled baby walkers), flame-retardant sleepwear, roll-over protective structures on tractors, child-resistant medication packaging and

the motor vehicle airbag have been successfully employed to prevent a variety of types of injury. In addition, other passive strategies such as sidewalks, window guards and pool fences are used to separate individuals from potential hazards.

Unitary Rubberized Playground Surfacing: A "technological vaccine" against playground injuries.



parents that they should use child restraints is simply not enough.

Enactment and enforcement of laws and policies also are recommended strategies for preventing injuries. For example, employers can develop workplace policies that protect employees from harm. State government can enact legislation requiring the use of bicycle helmets.

Supervision Alone Fails to Prevent Injury

Injury prevention theory dictates that strategies requiring frequent action or vigilance on the part of an individual are least likely to succeed. Adult supervision is the most common active strategy recommended to prevent injury to children. Although supervision is clearly desirable, when used alone it frequently fails to prevent injury. Many consumer product-related injuries to children occur with an adult immediately present at the moment of injury. Because injuries take only a moment to occur, and characteristically occur unexpectedly, and because even the best parent in the world cannot watch their child 100 percent of the time, supervision alone cannot be relied on to effectively prevent injury.



As discussed above in regard to the epidemiologic triad, multifaceted prevention programs that combine strategies are most likely to be effective. For example, a successful program to increase booster seat use among young children could involve the following strategies.

- Spreading awareness of the importance of booster seat use through a public awareness campaign in partnership with local media.
- Offering booster seat educational courses to parents of young children.
- Providing booster seat distribution programs in low-income, high-risk communities.
- Enacting legislation requiring children to be restrained in an appropriate restraint until the adult seat belt fits them properly.
- Working with law enforcement to raise awareness of new laws and available resources.
- Designing motor vehicles with built-in child restraint systems.

Effective Active Strategies

There are, however, injury-prevention strategies that inevitably rely on behavior change. Engineers can design a better bicycle helmet, but it will prevent head injury only if it is used consistently and properly. Therefore, active strategies need to be developed and evaluated to determine the most effective methods for changing behavior and therefore, reducing the risk of injury. We know from health education and behavior theories and the experiences of other public health issues that knowledge alone does not change behavior. Most people know that cigarette smoking is hazardous to one's health. This fact does not prevent millions of people from using tobacco products daily. Educational strategies must reduce real and perceived barriers to positive behavior change. In the case of child restraints, barriers to use may be inability to read installation instructions or not being able to afford the restraint. Although an important first step, informing

Injury Prevention Occurs in the Community

Unlike some diseases that can be effectively prevented without leaving the clinician's office, injury cannot be effectively fought without attacking it where it occurs in the community. Instead of providing vaccination against infectious diseases in the office or clinic, injury prevention programs use "technological vaccines" in the home and community (such as energy-absorbing surfaces under playground equipment or airbags in motor vehicles) to passively "immunize" against injury. Injury prevention strategies involving collaboration and community involvement are more likely to be successful. Coalition development is a strategy that has been effectively used to mobilize communities to address the injury problems that most affect them.

Common Themes and Expanded, Injury-specific Recommendations to Prevent Injury in Ohio

In addition to common themes and core recommendations, this section outlines injury-specific recommendations developed through consensus. Supporting information for injury-specific recommendations can be found in individual reports on the subjects. These documents are available electronically at www.state.oh.us/odps/division/ems/ems_local/trauma/trauma_commissions.htm.

Theme: Injuries are costly. Injury prevention saves lives and money.

A. Seek creative and collaborative solutions to funding.

1. Enhance communication and collaboration among key stakeholders.
2. Encourage insurance companies, employers and others to cover injury prevention programs and services to reduce healthcare costs.

B. Provide state funding that adequately addresses injury - a leading cause of morbidity and mortality in Ohio.

Theme: Improved injury surveillance efforts and program evaluation are needed.

C. Improve injury surveillance efforts.

1. Develop and maintain injury data infrastructures as discussed below. Collect cost and payer information when possible to allow cost/benefit analyses of injury prevention interventions.
2. Form an ongoing, interagency workgroup to review and make recommendations regarding data needs and opportunities. The workgroup should consider coordination, linking and quality improvement of data collection efforts. It should include representatives familiar with the relevant databases. This group should explore:
 - Funding opportunities to support data linkage.
 - Mechanisms to improve quality and access to data.
3. Continue to provide support for the:
 - Development and maintenance of the Ohio Emergency Medical Services Incident Reporting System (EMSIRS) and the Ohio Trauma Registry through the Ohio Department of Public Safety.
 - Implementation of the Ohio Youth Risk Behavior Survey (YRBS) and the Ohio Behavioral Risk Factor Surveillance Survey (BRFSS).
 - Collection of licensed child care center serious injury data through the Ohio Department of Job and Family Services.
4. Support new uses for injury data through:
 - The development of a Crash Outcomes Data Evaluation System (CODES) in Ohio. CODES links traffic crash reports, Emergency Medical Services Incident Reporting System (EMSIRS) data and hospital discharge data. Funding is available from the National Highway Traffic Safety Administration.
 - Ohio's participation in the Centers for Disease Control and Prevention's (CDC's) National Violent Death Reporting System (NVDRS).
 - External cause of injury coding (e-coding) of and increased access to the full set of Ohio hospital discharge data.
5. Create a permanent and stable funding mechanism for the development of:
 - A statewide emergency department surveillance system that uses the CDC's *Data Elements for Emergency Department Systems*. (www.cdc.gov/ncipc/pub-res/deedspage.htm)
 - A statewide coroners' database.
 - A statewide school injury surveillance system.
 - An occupational injury surveillance system based on the U.S. Bureau of Labor Statistics' system.
 - A statewide toxic exposure data collection system.
 - Incentives (e.g., related grant funding, etc.) to improve records completion for all statewide injury databases.

Common Themes and Expanded, Injury-specific Recommendations to Prevent Injury in Ohio

Injury-specific Data Surveillance Recommendations:

6. Create a standardized list of data elements or report form for child maltreatment reporting in health care facilities. Create a database to track maltreatment-related injuries.
7. Encourage the development and use of standardized elder abuse assessment tools, record keeping and referral tracking systems in health care facilities. Create a database to track injuries resulting from elder abuse.
8. Encourage the development and use of standardized intimate partner violence assessment tools, record keeping and referral tracking systems in health care facilities. Create a database to track injuries resulting from intimate partner violence.
9. Encourage the development of Domestic Violence Fatality Review in all 88 counties based on existing county programs and the Ohio Child Fatality Review Program.
10. Classify burn and fire injuries of greater than 5 percent body surface area as a reportable disease and develop a surveillance database.
11. Develop a poison exposure surveillance system to include deaths, hospitalizations, emergency department visits and all exposure incidents reported to Ohio poison control centers.
12. Create a statewide surveillance system to track suicide attempts and completions.
13. Create a statewide surveillance system to track firearm-related injuries.
14. Require law enforcement traffic crash reports to collect information on potential distractions.

D. Promote the use of injury prevention guidelines and evaluation measures that are based upon current evidence-based research and literature.

As part of the statewide coalition (described below), create a committee with responsibility for ongoing review of the effectiveness of prevention programs.

Theme: Improved statewide coordination of programs is needed.

E. Continue to develop leadership and infrastructure to identify, promote, and respond to injury prevention needs at the state and local level.

1. Implement recommendations from the State and Territorial Injury Prevention Directors' Association's (STIPDA) report, *An Assessment of the Ohio Injury Program, March 19-22, 2001*.
2. Strengthen the structure and funding of the Ohio Department of Health's Injury Prevention Section to provide technical assistance, training and coordination of activities, and support to state and local injury prevention efforts.
3. Create a statewide, interdisciplinary injury prevention coalition and provide a permanent funding mechanism to hire a full-time coordinator.

Injury-specific Recommendations

4. Create a permanent and stable funding mechanism for voluntary home visit programs of two years or greater duration per client in an effort to prevent child maltreatment. Target high-risk groups such as low-income families, families having children with disabilities and single parents without support.
5. Create a permanent and stable funding mechanism to maintain statewide suicide prevention and response initiatives.
6. Provide incentives for local government to construct "safe" communities for cyclists and pedestrians.
7. Create a permanent and stable funding mechanism to sustain the operation of the three existing regional poison control centers in Ohio.
8. Provide funding for a coordinated, annual, statewide smoke alarm awareness day to offer inspections, battery replacements and new installations as needed to low income families, families with young children and older adults.

Common Themes and Expanded, Injury-specific Recommendations to Prevent Injury in Ohio

9. Provide funding for a multifaceted statewide campaign to increase helmet use among bicycle and other non-powered vehicle users. The campaign should include education, helmet subsidies or giveaways, and legislation.
10. Provide funding for a statewide education and awareness program to prevent unintentional poisoning by elders and children younger than 5 years, and evaluate its effectiveness.
11. Implement a statewide outreach and education program to raise awareness among potential employers of the policies and regulations in existence to protect youthful workers from injury.
12. Implement a statewide awareness and education program targeting parents about firearm-related injuries.
13. Provide increased support of child restraint distribution, installation and education programs.
14. Establish and support driving alternatives to serve older drivers with a diminished ability to drive

F. Coordinate and link EMS, trauma care and public health agencies with other injury prevention programs at the national, state and local levels to increase collaboration.

1. Increase interagency collaboration and coordination between state agencies and organizations concerned with the prevention of injury, in particular the Ohio departments of Health and Public Safety, including the EMS Board and Trauma Committee, Bureau of Workers' Compensation, Ohio departments of Education, Mental Health, Aging, Transportation, Natural Resources and other relevant agencies.

Injury-specific Recommendations:

2. Encourage a collaborative response to intimate partner violence and child maltreatment in all counties.
3. Encourage a collaborative response to elder abuse in all counties.

G. Promote the use of community prevention programs - that are multifaceted, evidence-based and use effective evaluation by public health agencies, trauma centers, emergency medical services and other programs.

1. As part of the statewide coalition, create a committee with responsibility for injury prevention education.
2. Increase awareness through statewide public education programs that injury is a preventable public health problem and promote strategies for prevention through collaborative community programs.
 - Create an injury prevention Web site, listserve and toll free referral number.
 - Promote materials to health care, government and other groups working with at-risk populations.
3. Provide relevant training on injury surveillance and prevention strategies for professionals including: policy makers, law enforcement, nurses, physicians, EMS, teachers, child care professionals, extended care facility and senior care workers, employers, public health professionals and others.
4. Incorporate age-appropriate education on injury prevention, life skills, conflict resolution, parenting skills, bullying and other related issues into school curricula. Provide and promote standardized training materials for classroom use by teachers and other school professionals.

Injury-specific Recommendations:

5. Provide funding for and require the development of a standardized six-hour child maltreatment training curriculum for licensed child care centers. This responsibility should be given to the Ohio Department of Job and Family Services, Child Care Licensing Section. The training is currently required in the Ohio Administrative Code.
6. Support evidence-based programs for youth that provide instruction in life skills and anger management to encourage positive solutions and nonviolent responses to conflicts and problems.

Common Themes and Expanded, Injury-specific Recommendations to Prevent Injury in Ohio

Theme: Injuries disproportionately affect those living in poverty and the young and the old.

H. Promote injury prevention programs that focus on populations most at risk based on injury surveillance. Children and older adults living in poverty should be high priority.

Theme: Alcohol use is an important risk factor for injury.

I. Fund and support initiatives that address prevention of alcohol- and other drug-related injuries. These initiatives should include education, legislation, coalition building, and screening and intervention by health care professionals.

Theme: Legislation can be an effective strategy for preventing injuries.

J. Enact or strengthen state and local legislation and policies which lead to the prevention of injuries.

1. The statewide coalition should monitor and advocate for policies and legislation which enhance the safety of Ohioans.
2. Provide information and resources to relevant agencies to support injury prevention legislation.
3. Enact legislation and policies to prevent injuries.

Injury-specific Recommendations:

4. Enact state legislation based on the American Academy of Pediatrics' Residential Swimming Pool Safety Act:
 - Require four-sided fencing on all new residential swimming pool construction.
 - Require four sided fencing be added to all existing residential swimming pools at the time of sale of the house.
 - Provide a one-time tax credit of \$100 to add four-sided fencing to any existing residential swimming pool.

5. Expand existing state legislation to require that all persons riding in a boat shorter than 18 feet in length, regardless of age, wear a personal flotation device.
6. Mandate the installation of protective window guards on windows not designated as emergency exits in multiple-residence dwellings where young children may live.
7. Enact legislation requiring new public and school playgrounds to be constructed according to the U.S. Consumer Product Safety Commission's (CPSC) guidelines for playground surfacing and equipment. Encourage communities to renovate existing playgrounds accordingly.
8. Support federal legislation to reinstate flammability standards for children's sleepwear, particularly for children ages 0-7 years. Enact similar state legislation.
9. Support national standards mandating "fire-safe" cigarettes.
10. Enact legislation requiring helmet use by bicycle and other non-powered vehicle riders when riding on public roads.
11. Support legislation requiring energy-absorbing handlebars and other safety design improvements on new bicycles.
12. Enact a stronger motorcycle helmet law that applies to riders of all ages. (Current law applies only to riders younger than age 18.)
13. Support increased enforcement of Ohio's recently enacted .08 percent blood alcohol concentration (BAC) law for motor vehicle operators.
14. Increase penalties for driving under the influence of alcohol and other drugs.
15. Increase penalties for underage alcohol drinkers, their parents and those who provide alcohol to underage drinkers.
16. Enact legislation requiring children's products sold in Ohio to conform to the safety standards of the Consumer Product Safety Commission. Prohibit the sale of recalled products. (See Children's Product Safety Act at www.kidsindanger.org for model legislation).

Common Themes and Expanded, Injury-specific Recommendations to Prevent Injury in Ohio

17. Create a task force to review child maltreatment laws and recommend improvements. This group should consider:
 - Requiring standard terminology and objectivity in defining abuse.
 - Developing an objective, medical definition of abuse for health care professionals. The American Academy of Pediatrics has a definition of physical abuse.
 - Banning the use of corporal punishment in schools and other institutions where children receive care.
18. Create a task force to review other state laws and issue recommendations for improving Ohio's domestic violence law. This group should consider the following:
 - Include dating partners, male and female, who have never married or cohabited in Ohio domestic violence law.
 - Increase penalties for a violation of sections A and B of ORC 2919.25.
 - Require training of health care professionals as outlined in ORC 4723.25; ORC 4731.282; ORC 4732.141 to be mandatory.
19. Create a task force to review elder abuse laws and recommend improvements. This group should consider:
 - Requiring standard terminology and objectivity in defining elder abuse.
 - Developing an objective, medical definition of abuse for health care professionals.
20. Enact state legislation addressing the following firearm-related issues: Juvenile Possession Law, Child Access Prevention Law, and 'Safe Gun' standards.
21. Enact statewide primary restraint legislation for all motor vehicle occupants and support enforcement.
22. Improve the child restraint law to include:
 - Required booster seat use for children in the 4 to 8-year-old range.
 - Restriction of children 11 years of age and younger from being front seat passengers, unless there is no alternative seating.
23. Enact ATV (all-terrain vehicle) safety legislation to include the following:
 - Required helmet use for operators and riders.
 - Restricted sale to and use of ATVs by children aged 15 years and younger.
 - Required safety training and state certification for operators.



Appendix

ANATOMIC AND PHYSIOLOGIC FEATURES THAT INCREASE THE OCCURRENCE AND/OR SEVERITY OF INJURY IN CHILDREN

<u>General</u>	The surface-to-volume ratio of children is high. Dehydration can easily occur from overheating or sunburn. Also, rapid growth rates mean children's coordination and motor skills may be poorly developed in relation to their physical size.
<u>Airway</u>	Airway is smaller and more flexible. Airway is easier to obstruct with both food and nonfood objects. Tongue is larger.
<u>Breathing</u>	Normal ventilation requires minimal work. Respiratory rate decreases with age and varies with excitement, fear anger, fever or pain. Stress may double respiratory rate. Most infants less than 6 months do not breathe through their mouth; they are nose breathers. Higher respiratory rates mean increased exposure to airborne toxins, for example smoke from house fires.
<u>Head</u>	Head is large relative to the child's body. The child's higher center of gravity makes falls more likely. Strangulation can occur in crib or high chair. Head is likely to impact in falls and car crashes.
<u>Neck</u>	Infant's short neck makes it difficult to palpate a carotid pulse and to intubate. Discrete movement of the infant's neck can block the airway. Fulcrum of neck movement is higher than in adult.
<u>Chest and Lungs</u>	Pediatric bony cage is less rigid, more compressible than the adult. Children have a decreased risk of rib fractures but an increased risk of pulmonary contusion.
<u>Abdomen And Pelvis</u>	Abdominal wall poorly developed. Abdominal organs less protected by rib cage organs are large in relation to the abdominal cavity.
<u>G.I.</u>	Increased intestinal absorption increases likelihood of poisoning from nitrates, lead, or medications.
<u>Mouth</u>	Chewing mechanism not fully developed. Risk of choking and aspiration from foods, for example popcorn, nuts or chips.
<u>Back, Spine And Bones</u>	Children grow at rapid rate; coordination not consistent with growth. Bones are porous, flexible and can splinter and bend with stress causing spiral fractures and splintering.
<u>Skin</u>	Skin is thin relative to adults. Full thickness burns occur at lower temperatures.

ANATOMIC AND PHYSIOLOGIC FEATURES THAT INCREASE THE OCCURRENCE AND/OR SEVERITY OF INJURY IN OLDER PERSONS

<u>General</u>	Decrease in physiologic reserves, slowing of central nervous system response, drug metabolism changes, decreases in body mass, muscular atrophy and high frequency of pre-existing medical conditions.
<u>Airway</u>	Loss of protective reflexes in swallowing increases likelihood of choking on food.
<u>Breathing</u>	Decreased protective mucous and deconditioning (lack of fitness) opens the lungs to toxic exposure.
<u>Head</u>	Changes in cognitive ability, concentration and memory can mask symptoms of traumatic brain injury.
<u>Neck</u>	Thinning of intervertebral discs and shortening of vertebral bodies increase the difficulty of intubation.
<u>Back, Spine and Bones</u>	Osteoporosis increases risk of fractures.
<u>Skin</u>	Loss of subcutaneous tissue and thinning skin increase likelihood of injury after a bump and chances of thermal burns.
<u>Mouth</u>	Poor dentition and false teeth may increase risk of choking.
<u>Visual and Auditory Acuity</u>	Loss of vision and hearing increase risk of motor vehicle crashes and falls.
<u>Balance, Strength, Coordination</u>	Decreases in balance strength and coordination increase risk of falling and damage from a fall.

BEHAVIORAL AND DEVELOPMENTAL FEATURES THAT INCREASE THE OCCURRENCE OF INJURY

Infants

- Completely dependent on care giver
- Require constant supervision
- Unable to verbally communicate and report events
- Explores by mouthing objects; spends a lot of time sucking
- Rapid changes in motor abilities and mobility
- Begins to turn over and grasp objects

Resulting injury risks:

- Falls when left unattended or from infant walkers
- Suffocation and aspiration of small items
- Child maltreatment
- Electrical cord mouth burns
- Burn deaths in house fires

Toddlers or Preschoolers

- Curious, exploratory and impulsive
- Requires constant supervision
- Imitative of adult behavior with lack of awareness regarding potential danger
- Increased motor abilities
- Higher center of gravity
- Oral exploration puts objects in mouth

Resulting injury risks:

- Falls from stairs and windows
- Scald burns
- Drowning
- Child maltreatment
- Poisonings

Elementary School Age

- More mature motor skills
- May recognize dangerous situations but lack experience or judgment to make appropriate and safe decisions
- Increased mobility
- Increased independence
- Unable to assess speed and time of oncoming traffic

Resulting injury risks:

- Pedestrian injuries
- Bicycle, skateboard, scooters, in-line roller blading injuries
- Playground injuries

Young Adolescent

- Dynamic period of change and transition
- Need for peer approval and influenced by peer pressure
- Curious, experimental, risk-taking behavior and feelings of immortality
- More agile, increased strength and abilities, however may lack experience in appropriate decision-making skills
- Increased involvement in sports and recreational activities
- Increased independence
- Imitate behavior of older adolescents and adults
- Increased incidence of depression, experimentation with drug/alcohol use
- Impulsive

Resulting injury risks:

- Car occupant and motorcycle injuries
- Sports injuries
- Bicycle, skateboard, scooters, in-line roller blading injuries
- Drug and alcohol abuse
- Violence related injuries
- Sexual assault and dating violence
- Suicide and suicide gestures

Older persons

- Social isolation
- Depression
- Cognitive impairment (memory/judgement)
- Increased leisure time
- Prescription drug effects/interactions
- Lack of public transportation

Resulting injury risks

- Slips, trips and falls
- Motor vehicle crashes
- Poisonings
- Elder abuse
- Suicide

Ohio Data Sources for Injury Surveillance										
Data Source	Mandatory Submission	Each Record Indicates an Individual	U.S. Standard Classification Code Used*	Electronic Records	Records Span What Years	Restrictions on Access to Records	Fee for Data	State Data Available	Linked to any other Data Set	Sponsoring Organization/ Contact
Fatality Data										
Bureau of Vital Statistics Death Certifs.	Y	Y	Y	Y	1959 - present	N	Y	Y	Y	State Registrar 614-466-9229 dwhouse.odh.ohio.gov/
Census of Fatal Occupational Injuries (CFOI)	Y	Y	Y	Y	1992- present	Y	N	Y	N	Ohio Department of Health (614) 466-4183 www.bls.gov/home.htm
Child Fatality Review (CFR)	Y	Y	Y	Y	2001- present	Y	N	Y	N	Ohio Department of Health/Division of Family & Children Services www.odh.state.oh.us/ODHPrograms/cfr/cfr1.htm
Coroner's Reports	<i>No statewide system exists at this time. Contact local coroner</i>									
Nonfatal Injury Data										
Integrated Traffic Record System (ITRS) - Traffic Crash Records	Y	N Incident based	Y	Y	1982- present	Y	N	Y	N	Ohio Department of Public Safety www.state.oh.us/odps/crash_reports.htm
EMS Incident Reporting System	Y	Y	Y	Y	2002- present	Y	N	Y	N	Ohio Department of Public Safety, Division of EMS 1-800-233-0785 www.ohiopublicsafety.com
Ohio Trauma Registry	Y	Y	Y	Y	2000- present	Y	N	Y	N	Ohio Department of Public Safety, Division of EMS 1-800-233-0785 www.ohiopublicsafety.com
Farm Fatality and Injury Database of Ohio (FFIDO)	N	Y	N	Y	1955- present	Y	N	Y	N	The Ohio State University

*Based on national standard coding formats for that type of data.

Ohio Data Sources for Injury Surveillance										
Data Source	Mandatory Submission	Each Record Indicates an Individual	U.S. Standard Classification Code Used*	Electronic Records	Records Span What Years	Restrictions on Access to Records	Fee for Data	State Data Available	Linked to any other Data Set	Sponsoring Organization/ Contact
Child Care Incident/Injury Report Database	Y	Y	N	Y	July 2003-present	Y	N	Y	N	Ohio Department of Job & Family Services – Child Care Licensing Section
Poison Center Data	<i>No statewide system exists at this time – Contact the Central Ohio Poison Center at Columbus Children’s Hospital (614.722.2643), the Cincinnati Drug and Poison Information Center at the Children’s Hospital Medical Center of Cincinnati (http://www.cincinnatichildrens.org/svc/prog/dpic/statistics.htm) and the Greater Cleveland Poison Control Center for Ohio data.</i>									
Emergency Department Data	<i>No statewide system exists at this time</i>									
School Injury Data	<i>No statewide system exists at this time</i>									
Cost Data										
Hospital Discharge Data	N	Y	Y	Y	1990-present	Y	Y	Y	N	Ohio Hospital Association www.ohanet.org/
Medicaid Data	Y	Y	Y	Y	1997–present	Y	Y	Y	N	Ohio Department of Job and Family Services
Bureau of Workers Compensation Injury Claims Data	Y	Y	Y	Y	1993-present	Y	N	Y	N	Ohio Bureau of Worker’s Compensation www.ohiobwc.com/
Investigation/Criminal Records										
Adult Protective Services	<i>No statewide system exists at this time. Records are maintained at the county Job and Family Services agencies for a minimum of 3 years.</i>									
Child Protective Services Central Registry	Y	Y	N	Y	1966-present	Y	N	Y	N	Ohio Department of Job and Family Services

*Based on national standard coding formats for that type of data.

Ohio Data Sources for Injury Surveillance

Data Source	Mandatory Submission	Each Record Indicates an Individual	U.S. Standard Classification Code Used*	Electronic Records	Records Span What Years	Restrictions on Access to Records	Fee for Data	State Data Available	Linked to any other Data Set	Sponsoring Organization/ Contact
Ohio Incident Based Reporting System (Crime Statistics)	N	N Incident Based	Y	Y	1999 - present	Y	Not known at this time	Not statewide	N	Ohio Department of Criminal Justice Services www.oibrs.ohio.gov/
Ohio Fire Incident Reporting System (OFIRS)	Y	N Incident-based	Y	Y	1987- present	N	N	Y	N	Ohio Department of Commerce Divisio of the State Fire Marshal www.com.state.oh.us/sfm/default.htm
Injury Risk Factor Surveillance										
Behavioral Risk Factor Surveillance System (BRFSS)	N/A	Y	Y	Y	Biennial	Y	N	Y	N	Ohio Department of Health/Center for Public Health Data & Statistics (614) 728-9180
Youth Risk Behavioral Surveillance System (YRBSS)	N/A	Y	Y	Y	1993 Biennial	Y	N	Y	N	Ohio Department of Health, Division of Family and Community Health Services; (614) 466-4718
Ohio Annual Observational Seat Belt Survey	N/A	Y	Y	Y	1991- present	Y	N	Y	N	Ohio Department of Public Safety Governor's Highway Safety Office www.state.oh.us/odps/ghso/ghsohome.html

*Based on national standard coding format for that type of data.

Appendix C

National Data Sources for Injury Surveillance					
Data Source	Years Data Collected	Restrictions on Access to Aggregate Data	Fee for Data	State Data Available	Sponsoring Organization/ Contact
WISQARS (Web-based Injury Statistics Query and Reporting System)	1981 – present	N	N	Y	Centers for Disease Control and Prevention www.cdc.gov/ncipc/wisqars/
Fatality Analysis Reporting System (FARS) Traffic-related fatalities	1999-present	Not for law Others by request	N	Y	National Highway Traffic Safety Administration www.nhtsa.dot.gov/people/ncsa/fars.html
National Occupant Protection Use Survey (NOPUS)	1994-present	N	N	N	National Highway Traffic Safety Administration www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/
National Electronic Injury Surveillance System (NEISS)	1979-present	N	N	N	Consumer Product Safety Commission www.cpsc.gov/library/neiss.html
National Hospital Discharge Survey	1990, 1994-1998	N	N	N	Centers for Disease Control and Prevention – National Center for Health Statistics www.cdc.gov/nchs/about/major/hdasd/nhds.htm
National Ambulatory Medical Care Survey	1990-2000	N	N	N	Centers for Disease Control and Prevention – National Center for Health Statistics www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm
National Hospital Ambulatory Medical Care Survey	1992-2000	N	N	N	Centers for Disease Control and Prevention – National Center for Health Statistics www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm
Healthcare Cost and Utilization Project (HCUP)	1988-2001	N	N	N	Agency for Healthcare Research and Quality www.ahrq.gov/data/hcup/
National Incident Based Reporting System (NIBRS) (Crime data)	1997-present	N	N	N	U.S. Department of Justice Bureau of Justice Statistics www.ojp.usdoj.gov/bjs/nibrs.htm
National Child Abuse and Neglect Data System (NCANDS)	1995-present	N	N	Y	U.S. Department of Health and Human Services Administration for Children and Families www.calib.com/nccanch/pubs/factsheets/ncands.cfm
National Data Archive on Child Abuse and Neglect	Varies by dataset	Y	Y	Y	Family Life Development Center, Cornell University www.ndacan.cornell.edu/index.html

National Data Sources for Injury Surveillance

Data Source	Years Data Collected	Restrictions on Access to Aggregate Data	Fee for Data	State Data Available	Sponsoring Organization/ Contact
National Crime Victimization Survey	1973-present	N	N	N	Bureau of Justice Statistics www.ojp.usdoj.gov/bjs/welcome.html
National Archive of Criminal Justice Data	Varies by database	N	N	Y	www.icpsr.umich.edu/NACJD/index.html
National Fire Incident Reporting System	1974 - present	N	N	Y	U.S. Fire Administration www.nfirs.fema.gov/
Toxic Exposure Surveillance System (TESS)	1983-present	N	N	N	American Association of Poison Control Centers www.aapcc.org/poison1.htm
The National EMS Information System	Not presently collecting data	N/A	N/A	N/A	www.nemsis.org/
The National Pediatric Trauma Registry	No longer collecting data	N	N	N	www.nptr.org/

Appendix D

Section 5 of Amended Substitute House Bill 138 as enacted by the 123rd General Assembly, November 2000

The Director of Health shall organize and coordinate a temporary commission to determine how to better prevent traumatic injuries in this state. The commission's study shall include, without limitation, consideration of how to improve public safety education and how to prevent pediatric and geriatric injuries.

The Department of Public Safety, Department of Natural Resources, Department of Agriculture, Department of Education, Commission on Minority Health and Bureau of Workers' Compensation shall participate in and assist with the commission's study.

Within 120 days after the effective date of this act, the director shall appoint to the commission appropriate public health authorities, entities that conduct safety research and education, and advocates for injured persons. Commission members shall have expertise in injury prevention, broadly represent relevant disciplines, and represent all regions of the state.

Within 120 days after the effective date of this act, the Speaker of the House of Representatives shall appoint to the commission one member of the majority party and one member of the minority party in the House of Representatives and the President of the Senate shall appoint to the commission one member of the majority party and one member of the minority party in the Senate.

In conducting its study and developing its recommendations, the commission shall consult and cooperate with the Trauma Committee of the State Board of Emergency Medical Services. The commission shall conclude its study and disband not later than three years after the effective date of this section, whereupon the director shall transmit the commission's findings and recommendations to the Governor, General Assembly, chief executive of each state agency specified in this section, and other appropriate persons.

Appendix E: From Healthy People 2010, United States

Total Population, 1997	Injury-Related Hospital Emergency Department Visits
	Rate per 1,000
TOTAL	131
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DSU
Native Hawaiian and other Pacific Islander	DSU
Black or African American	182
White	127
Hispanic or Latino	
Hispanic or Latino	DSU
Not Hispanic or Latino	DSU
Black or African American	DSU
White	DSU
Gender	
Female	116
Male	146
Education level	
Less than high school	DNC
High school graduate	DNC
At least some college	DNC

*DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.*

Total Population, 1998	Unintentional Injury Deaths
	Rate per 100,000
TOTAL	35.0
Race and ethnicity	
American Indian or Alaska Native	59.9
Asian or Pacific Islander	17.6
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	39.5
White	34.8
Hispanic or Latino	
Hispanic or Latino	30.2
Cuban	22.5
Mexican	32.1
Puerto Rican	28.8
Not Hispanic or Latino	35.1
Black or African American	40.7
White	34.6
Gender	
Female	22.1
Male	49.4
Education level (aged 25 to 64 years)	
Less than high school	54.5
High school graduate	41.5
At least some college	17.4
Select populations	
American Indian or Alaska Native males	83.6
Black or African American males	60.8
Hispanic males	46.2
White males	48.7

*DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.*

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