Injury and Ohio's Youth

Violence and Injury Prevention Program

Bureau of Health Promotion and Risk Reduction
Office of Healthy Ohio
Ohio Department of Health

BACKGROUND

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. In October 2001, commission members from across the state first gathered to discuss the status of injury and prevention efforts in Ohio. They developed a strategy and over the next two years, convened regularly to produce a consensus-based report. The result of the commission's work is a 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 Commission's Report, completed in 2003 is available at: http://www.ems.ohio.gov/trauma/injprevcommreports.htm

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. These themes are:

- **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.

PUBLIC HEALTH INJURY SURVEILLANCE AND PREVENTION PROGRAM GRANT

The Ohio Department of Health has received funding through the Public Health Injury Surveillance and Prevention Program for the Core Injury Prevention and Control Program. The goal of the application is to continue development of a comprehensive injury prevention program through the establishment and

sustainment of a solid infrastructure for injury prevention that includes statewide injury surveillance that will inform and evaluate public policy as well as comprehensive injury prevention and control. This funding is used to:

1) strengthen the infrastructure for injury prevention in Ohio,
2) improve injury surveillance,
3) influence and evaluate policy relative to the prevention of injuries
4) increase collaboration in the field of injury prevention.

ODH participated in a State and Territorial Injury Prevention Directors' Association (STIPDA) State Technical Assessment Team (STAT) visit in 2001. There has been focused effort and growth toward increasing the capacity of ODH relative to injury prevention. This program will assist in achieving that goal.

THE OHIO INJURY PREVENTION PARTNERSHIP

Resulting from the recommendations from both the STAT Visit and the Ohio Commission on the Prevention of Injury, and with funding from the CDC Core Injury Grant, the Ohio Injury Prevention Partnership was convened in November 2007. Since that time, they have met to review and analyze Ohio's injury data to determine injury priority areas. A strategic planning process occurred to facilitate development of a mission/vision statement, overarching goals and to identify injury priority areas. This document is the result of that process and work.

OHIO INJURY PREVENTION PARTNERSHIP MEMBER ORGANIZATIONS
(AS OF MAY 2008)

Brain Injury Association of Ohio

Center for Injury Research and Policy, Nationwide Children's Hospital

Cincinnati Children's Hospital Medical Center

Children's Hospital Medical Center of Akron

Columbus Health Department, Central Ohio SAFEKIDS

Cuyahoga County Board of Health

Grant Hospital Trauma Program

Hamilton County Public Health

Injury Prevention Center of the Greater Dayton Area

Ohio Department of Alcohol and Drug Addiction Services

Ohio Department of Education

Ohio Department of Health
- **Adolescent Health Program**
- **Child Fatality Review Program**
- **School Nursing Program**
- **Sexual Assault and Domestic Violence Program**

Ohio Department of Mental Health

Ohio Department of Public Safety
- **Division of EMS/Ohio Trauma Committee**
- **Ohio Traffic Safety Office**
- **Office of Criminal Justice Services**

Ohio Department of Transportation

Ohio Osteopathic Association

Ohio State University Agricultural Extension Office

Ohio State University Medical Center

Prevent Child Abuse Ohio

Prevent Blindness Ohio

Public Children's Services Association of Ohio

Rainbow Babies and Children's Hospital Injury Prevention Center

Riverside Hospital Trauma Program

Mission & Vision

Our **Mission** is: *To prevent injuries in Ohio using data and collaborative partnerships.*

Our **Vision for injury prevention is**: *Working together to create a safe and injury free Ohio.*

What:

The Ohio Injury Prevention Partnership is a group of professionals representing a broad range of agencies and organizations concerned with building Ohio's capacity to address the prevention of injury, particularly related to the group's identified priority areas.

The organization is a partnership of the Ohio Department of Health with funds from the Centers for Disease Control and Prevention (CDC). It advises and assists ODH and the Violence and Injury Prevention Program with establishing priorities and future directions regarding injury and violence prevention initiatives in Ohio. This group helped to develop this statewide plan to guide the direction of injury prevention activities in Ohio. The plan focuses on identified injury priority areas and overarching goals as described below.

Why:

Recognizing that, because of the incomparable cost and the disabling and disrupting consequences, injury and violence remain major public health problems in Ohio. They are the leading cause of death for Ohioans aged 1 to 44 and the 5th leading cause of death overall. Injuries, including suicide and homicide, cause more deaths of children and young adults from ages 1 through 44 than all other causes combined, including heart disease, stroke and cancer. This Organization is committed to strengthening and sustaining effective injury and violence prevention and control measures that reflect the significance of the problem. Members of the organization agree that:

- Injuries are not accidents; they are preventable.
- Collaboration is effective in addressing injury
- Improved statewide coordination of injury prevention efforts is needed in Ohio
- Initiatives should be data-driven to identify the populations at highest risk

Injury Priority Areas

The Ohio Injury Prevention Partnership recognizes the following injury priority areas based on the burden of injury in Ohio. The organization will develop specific strategies related to these injury priority areas.

- Falls
- Motor vehicle traffic with a focus on pedestrian-related injury
- Poisonings
- Suicide
- Firearm-related violence

Goals:

To advance the mission, the "Organization" engages in activities to:

1. Assess needs and increase availability and quality of injury data in Ohio.
2. Build infrastructure and sustainability for injury prevention in Ohio
3. Promote injury prevention as a public health priority in Ohio.
4. Promote evidence-based injury prevention programs throughout Ohio
5. Increase statewide collaboration around injury prevention in Ohio

GOALS

1. Assess needs and increase availability of injury data in Ohio.

- Assess community needs surrounding violence and injury prevention priority areas
- Increase the quality and availability of statewide and community-specific data for planning, surveillance, and evaluation.
- Prioritize target populations at risk for injury and appropriate interventions for each target population

2. Build infrastructure and sustainability for injury prevention in Ohio

- Participate in the development, implementation and support of the Ohio Injury Prevention Plan
- Identify resources for ongoing support of the mission as needed.
- Strengthen state and community level infrastructure, partnerships and competencies for injury prevention
- Increase public and private funding for injury prevention.
- Build the capacity of communities to reduce and prevent injuries to high-risk groups and effectively address injury prevention priorities.
- Strengthen the infrastructure for injury prevention in Ohio through collaboration and advocacy,
- Develop champions to advocate for effective injury prevention policies
- Support public health policies designed to advance injury and violence prevention in Ohio.
- Negotiate consensus positions for policies and programs to prevent injury.

3. Promote injury prevention as a public health priority in Ohio.

- Increase awareness of injury including violence as a public health problem
- Mainstream injury prevention as a public health issue
- Promote social marketing methods for injury prevention messages (e.g., CIOT)
- Elevate safety to a level as desirable as health and fitness
- Assess community norms and perceptions of “safety”, violence and injury issues.

4. Promote evidence-based injury prevention programs throughout Ohio

- Increase state-of-the-art knowledge and skills in the injury prevention workforce
- Increase capacity (resources, training) to sustain efforts
- Increase the use of evidence-based injury prevention interventions statewide
- Evaluate interventions

6. Increase statewide collaboration around injury prevention in Ohio

- Coordinate statewide planning and implementation of injury prevention and control programs through the “organization”
- Encourage injury prevention practitioners and others to act collectively on behalf of their injury prevention programs
- Provide an avenue for public health injury prevention practitioners to interact with philanthropic, professional, governmental, and voluntary organizations on issues that affect injury prevention
- Exchange ideas, strategies, materials, administrative policies, and procedures to improve and enhance injury prevention programs
- Coordinate efforts and make use of conduits to constituencies.
- Network all organizations in Ohio engaged in injury/violence prevention to increase effectiveness.

DATA SOURCES

This document uses data from a variety of sources to examine injury among Ohio residents, although it most heavily relies on hospital discharge data from the Ohio Hospital Association and death certificate data from the Office of Vital Statistics at the Ohio Department of Health (ODH):

- **Ohio hospital inpatient discharge (HID) and emergency room (ER) records** - Hospital discharge records are collected and maintained by the Ohio Hospital Association (OHA) from information provided by member hospitals. For this report, an injury was defined as a primary diagnosis of injury with the first listed four-digit external cause (E-code) in the range of E800-E998 and occurring to an Ohio resident who was treated in one of Ohio's acute care hospitals. Both injuries and their external causes were classified according to the 9th Revision of the International Classification of Diseases, Clinical Modification (ICD-9-CM).

- **Death Certificates** - Death records are maintained by the Ohio Department of Health's (ODH) Office of Vital Statistics. A death was determined to be an injury when a coroner or certifying physician identified an injury as the underlying cause of death. Subsequent assignment of an ICD-10 code in the range of V01-Y36,Y85-Y87,Y89 by ODH nosologists enabled inclusion of the information.

DATA ANALYSIS

This analysis was limited to descriptive statistics, which were generated through the use of Statistical Analysis System (SAS) Version 9.1, Cary, NC.

LIMITATIONS OF INJURY SURVEILLANCE.

Interpretation of these results is subject to the usual constraints inherent in research based on administrative data.

1. In each year of the study period, at least 28 percent of hospitalized injury cases were not assigned an E-code. This most likely resulted in an underestimate of total costs and incidence rates, because not all injuries could be identified and included.
2. Of the non-fatally injured, only those who sought medical care were captured for this analysis.
3. Discharges, not individuals, were the unit of measurement, thereby resulting in duplication when readmissions for the same injury occurred.
4. For both hospital and Vital Statistics data, circumstances surrounding injuries, including location and type of specific injury were frequently missing, increasingly so with age of the victim.
5. Race and ethnicity were not available in the hospital data.
6. Ohio residents treated in out-of–state hospitals are not consistently included, thereby affecting rates, particularly of border counties.
7. Medical charges were based on billing data and not actual costs.

INTRODUCTION

> *"Injury is probably the most under recognized major public health problem facing the nation today, and the study of injury represents unparalleled opportunities for reducing morbidity and mortality and for realizing significant savings in both financial and human terms—all in return for a relatively modest investment."*
>
> *From:* ***Injury Prevention: Meeting the Challenge,*** The National Committee for Injury Prevention and Control. New York: American Journal of Preventive Medicine, 1989, p. 1.

INJURY IN OHIO – A PUBLIC HEALTH PRIORITY

DEFINING THE PROBLEM

Injury can be defined as…

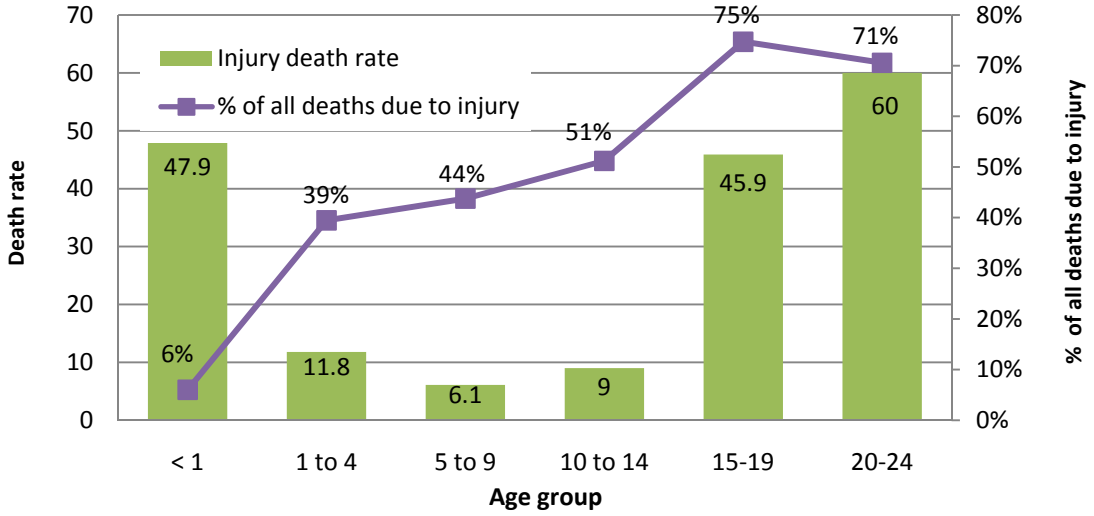
Any unintentional *("accidental")* or intentional damage to the body resulting from acute exposure to thermal (e.g., fire/burns), mechanical (e.g., falls, motor vehicles), electrical or chemical (e.g., poisoning) energy or from the absence of such essentials as heat (e.g., hypothermia) or oxygen (e.g., suffocation/choking).

The terms "unintentional" and "intentional" are used to indicate if the acts were intended to harm a person. Intentional injury refers to acts in which the injury was meant to cause harm such as suicide, homicide and legal intervention. Unintentional injuries (e.g., falls, poisoning, drowning, motor vehicle-related injuries) occur when energy is transferred to body tissues without the intent to harm oneself or others.

INJURY AS A CAUSE OF DEATH AMONG YOUTH

Injuries are a clear public health problem in Ohio for all ages. They are the leading cause of death for Ohioans ages 1 to 34 and the fifth-leading cause of death overall (Table 1.0). Injuries, including suicide and homicide, cause more deaths of children and young adults from ages 1 through 34 than all other causes combined, including heart disease, stroke and cancer. In 2005, 6,775 Ohioans lost their lives to injury and violence.

Figure 1.0 Proportion of deaths due to injury and injury death rate per 100,000 by age group, *ages 0-24*, Ohio, 2002-05



**Source: CDC, National Center for Health Statistics, Compressed Mortality File, 2005, CDC WONDER*

TABLE 1.1 10 LEADING CAUSES OF DEATH, OHIO, 2001-2005

	Age Groups										
Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Congenital Anomalies 1,133	Unintent Injury 263	Unintent Injury 200	Unintent Injury 257	Unintent Injury 2,552	Unintent Injury 2,153	Malignant Neoplasms 3,340	Malignant Neoplasms 11,021	Malignant Neoplasms 20,772	Heart Disease 125,902	Heart Disease 152,589
2	Short Gestation 921	Congenital Anomalies 102	Malignant Neoplasms 93	Malignant Neoplasms 98	Suicide 799	Suicide 1,003	Unintent Injury 2,976	Heart Disease 8,496	Heart Disease 14,194	Malignant Neoplasms 88,259	Malignant Neoplasms 124,695
3	SIDS 459	Homicide 80	Congenital Anomalies 39	Suicide 59	Homicide 759	Malignant Neoplasms 723	Heart Disease 2,933	Unintent Injury 2,995	Chronic Low. Respiratory Disease 2,780	Cerebro-vascular 29,988	Cerebro-vascular 33,833
4	Maternal Pregnancy Comp. 432	Malignant Neoplasms 58	Homicide 26	Homicide 36	Malignant Neoplasms 317	Heart Disease 682	Suicide 1,293	Liver Disease 1,365	Diabetes Mellitus 2,433	Chronic Low. Respiratory Disease 26,346	Chronic Low. Respiratory Disease 30,347
5	Placenta Cord Membranes 284	Heart Disease 49	Heart Disease 21	Heart Disease 33	Heart Disease 209	Homicide 677	Liver Disease 531	Diabetes Mellitus 1,293	Cerebro-vascular 2,001	Diabetes Mellitus 14,391	Unintent Injury 20,432
6	Unintent Injury 260	Septicemia 25	Influenza & Pneumonia 10	Congenital Anomalies 26	Congenital Anomalies 99	HIV 145	Homicide 496	Suicide 1,292	Unintent Injury 1,603	Alzheimer's Disease 14,141	Diabetes Mellitus 18,736
7	Respiratory Distress 192	Influenza & Pneumonia 18	Cerebro-vascular 9	Influenza & Pneumonia 13	Cerebro-vascular 43	Diabetes Mellitus 135	HIV 457	Cerebro-vascular 1,206	Liver Disease 1,146	Influenza & Pneumonia 10,541	Alzheimer's Disease 14,273
8	Bacterial Sepsis 149	Perinatal Period 17	Chronic Low. Respiratory Disease 6	Septicemia 11	Diabetes Mellitus 39	Cerebro-vascular 116	Diabetes Mellitus 438	Chronic Low. Respiratory Disease 902	Nephritis 835	Nephritis 8,293	Influenza & Pneumonia 11,838
9	Intrauterine Hypoxia 124	Benign Neoplasms 11	Septicemia 6	Anemias 9	Chronic Low. Respiratory Disease 33	Congenital Anomalies 96	Cerebro-vascular 436	Septicemia 441	Septicemia 805	Unintent Injury 7,173	Nephritis 9,830
10	Necrtizing Enterocoliti 106	Chronic Low. Respiratory Disease 9	Two Tied 4	Cerebro-vascular 8	Anemias 25	Nephritis 64	Chronic Low. Respiratory Disease 203	Nephritis 431	Suicide 739	Septicemia 6,001	Septicemia 7,609

Figure 1.0 demonstrates the proportion of all deaths in a particular age group that can be accounted for by injury for ages 0-24. Injuries account for the greatest proportion of all deaths for ages 15-24 (more than 70 percent) and the least for ages 65+ (2 percent, not shown). For infants younger than 1 year, 6 percent of all deaths are due to injury. For young children aged 1 to 4 years, 39 percent of deaths are caused by injuries, and for children aged 5 to 14, just less than half of all deaths are injury related. From age 19 on, the proportion of deaths due to injury steadily decreases down to 2 percent for older Ohioans as the number of deaths from chronic diseases increases.

INJURY IN CHILDREN AND YOUTH BY AGE GROUP

Children are not small adults. They are developmentally, anatomically and physiologically different than adults. These differences place them at 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. 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."

- For children, injury accounts for approximately as many deaths as all other causes combined.
- Every day in the U.S., 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 problem is measured, injury rises to the top of public health threats to children.

The physical and cognitive changes marking the developmental stages of children and youth are known to affect risk for specific types of injury.

- For infants, the majority of injury-related deaths are caused by unintentional suffocation (62 percent), followed by homicide (20 percent).
- For children aged 1 to 4 years, drowning is the leading cause and accounts for 23 percent of the injury deaths, followed by homicide (20 percent), MV traffic (17 percent), fire/burn (15 percent), suffocation (8 percent), falls (3 percent) and poisoning (1 percent).
- For older children aged 5 to 14 years, most injury deaths are caused by MV traffic (36 percent), followed by suicide (12 percent), homicide (10 percent), drowning (8 percent) and suffocation (4 percent).
- For adolescents and young adults, the majority of injury deaths are caused by MV traffic (40 percent), and suicide and homicide (19 percent both).

TABLE 1.2. LEADING CAUSES OF INJURY DEATHS[1], BY INTENT[2], HOSPITAL INPATIENT DISCHARGES[3] AND ER VISITS[3], BY AGE GROUP, OHIO, 2002-05

Age Group	Deaths by Manner (all intents[4])	Deaths by Intent (Unintentional unless Homicide/Suicide)	Inpatient Hospitalizations	Emergency Room Visits
< 1	1. Suffocation (194) 2. Drowning (14) 3. MV Traffic (8) 4. Fire/burn (8)	1. Suffocation (178) 2. Homicide (57) 3. Drowning (10) 4. MV Traffic/Suffocation/ Undetermined (8 ea)	1. Falls (193) 2. Assault (191) 3. Other Specified (41) 4. Poisoning (35)	1. Falls (9,294) 2. Struck by/against (2,617) 3. Other Specified (1,559) 4. Ntl Environment (819)
1-4	1. Drowning (66) 2. Fire/burn (53) 3. MV Traffic (48) 4. Suffocation (28)	1. Drowning (62) 2. Homicide (57) 3. MV Traffic (48) 4. Fire/burn (43)	1. Falls (572) 2. Poisoning (407) 3. MV Traffic (253) 4. Hot Object/burn (141)	1. Falls (75,619) 2. Struck by/against (34,312) 3. Other Specified (18,606) 4. Ntl Environment (14,129)
5-14	1. MV Traffic (177) 2. Suffocation/hanging (65) 3. Fire/burn (58) 4. Drowning/Firearm (42 ea)	1. MV Traffic (177) 2. Suicide (57) 3. Homicide (49) 4. Fire/burn (44)	1. Falls (1,385) 2. MV Traffic (1,084) 3. Struck by/against (514) 4. Other land transport (489)	1. Falls (131,982) 2. Struck by/against (115,452) 3. Overexertion (39,295) 4. Cut/pierce (37,266)
15-24	1. MV Traffic (1,359) 2. Firearms (834) 3. Poisoning (453) 4. Suffocation/ hanging (288)	1. MV Traffic (1,354) 2. Suicide (646) 3. Homicide (633) 4. Poisoning (367)	1. MV Traffic (5,976) 2. Self-harm (3,932) 3. Assault (2,546) 4. Falls (1,473)	1. Struck by/against (115,612) 2. MV Traffic (106,304) 3. Falls (99,403) 4. Overexertion (85,893)
Totals* for all ages	1. MV Traffic (5,459) 2. Poisoning (4,433) 3. Firearms (4,134) 4. Falls (2,994)	1. MV Traffic (5,435*) 2. Suicide (5,023*) 3. Poisoning (3,459*) 4. Falls (2,874*)	1. Falls (66,845*) 2. MV Traffic (23,670*) 3. Self-harm (17,089*) 4. Assault (8,545*)	1. Falls (817,067*) 2. Struck by/against (465,438*) 3. Overexertion (370,253*) 4. MV Traffic (337,825*)

* totals include those of unknown age

[1]*Source: Ohio Dept. of Health, Office of Vital Statistics.*

[2]*Intent: The state of mind of persons involved in an injury episode which forms the basis for categorizing an injury as unintentional (traditionally termed accidental), as homicide/assault, as suicide/self-inflicted, or as unable to be determined.*

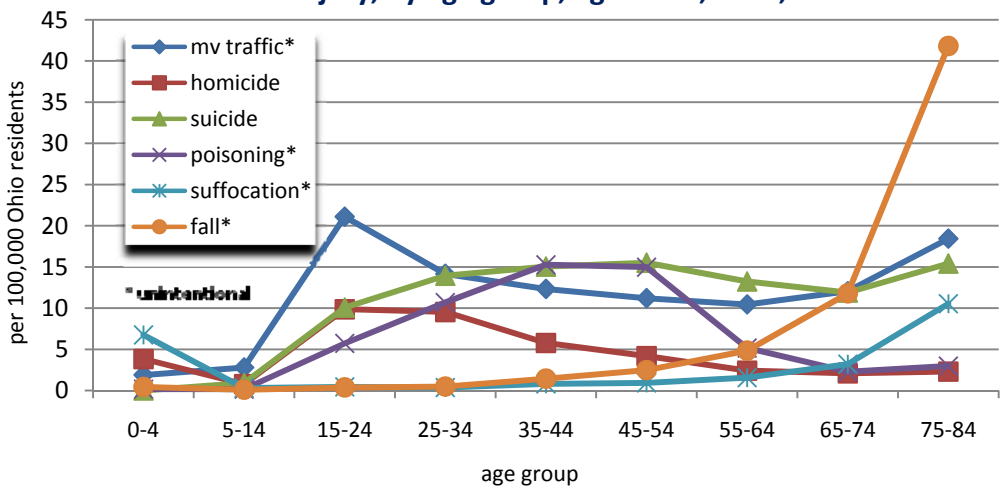
[3]*Source: Ohio Hospital Association.*

[4] *Includes all injury deaths for this leading cause, whether unintentional, suicide/self-inflicted, homicide, pending investigation, or could not be determined.*

DEATH, INPATIENT DISCHARGE AND ER VISIT RATES FOR LEADING CAUSES OF INJURY BY AGE GROUP

Fall-related death rates were highest among the oldest age groups, Figure 8. Death rates associated with motor vehicle traffic crashes and homicides (assaults) peaked among 15-24-year-olds. Death rates for unintentional poisonings are highest among those aged 35-54 years. Suffocation death rates are highest at both ends of the age spectrum for infants and then Ohioans 75 years and older.

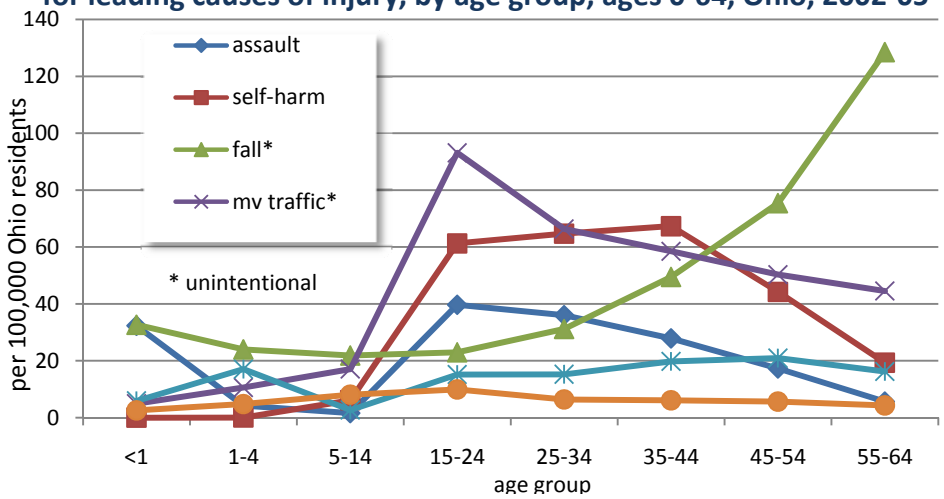
Figure 1.1. Average annual death rates[1,2], for leading causes of injury, by age group, ages 0-84, Ohio, 2002-05



[1]*Source: Ohio Department of Health, Office of Vital Statistics* [2]*per 100,000*

For the most part, fall-related HID rates increased as age increased, with the exception of those 4 years of age or less. Other types of injuries peaked in the early-to mid-adult age groups, Figures 5-7. Although other injury rates peaked at younger ages than those for falls, there was considerable variability as to which age group was the most vulnerable to a specific type of injury, Figure 5. For the time period under study, 35-44-year-olds were the most likely to be hospitalized for self-harm and 45-54-year-olds for unintentional poisoning, while 15-24-year-olds were the most likely to be victims of an assault or a motor vehicle crash.

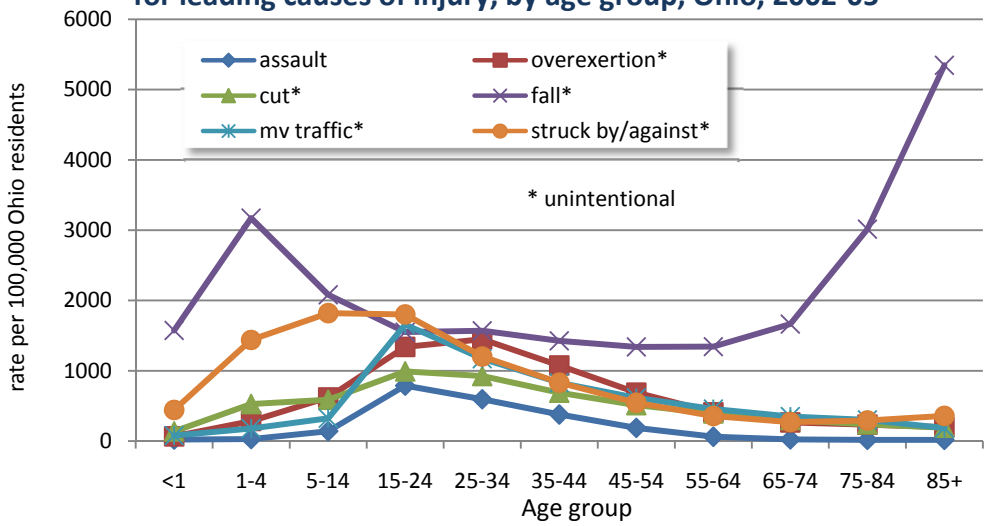
Figure 1.2. Average annual inpatient discharge rate[1,2] , for leading causes of injury, by age group, ages 0-64, Ohio, 2002-05



[1]Source: Ohio Department of Health, Office of Vital Statistics *[2]per 100,000*

Falls top the leading cause of injury-related ER visit charts for all age groups except 15-24, for which they are the third-leading cause. As with inpatient discharges, fall-related ER visit rates are greatest by far for those ages 65 and older.

Figure 1.3. Average annual emergency room visit rates[1,2] for leading causes of injury, by age group, Ohio, 2002-05



[1]Source: Ohio Department of Health, Office of Vital Statistics *[2]per 100,000*

INFANTS (LESS THAN ONE YEAR)

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 2005 in Ohio, the unintentional injury death rate for infants younger than 1 year of age was 42.64 per 100,000. This is the highest age-specific unintentional injury death rate until age 17. The unintentional injury death rate per 100,000 infants younger than 1 year in Ohio has been generally increasing from 1999 (26.32 per 100,000) to 2005 (42.64 per 100,000) with a decrease from 1999-2000. The rate increased 62 percent from 1999 to 2005. From 2002-05, the unintentional injury death rate for male infants (9.57 per 100,000) is slightly higher than for female infants (9.03 per 100,000).

Figure 1.5. Unintentional injury death rate* *for infants less than 1 year*, by year, Ohio, 1999-05[1]

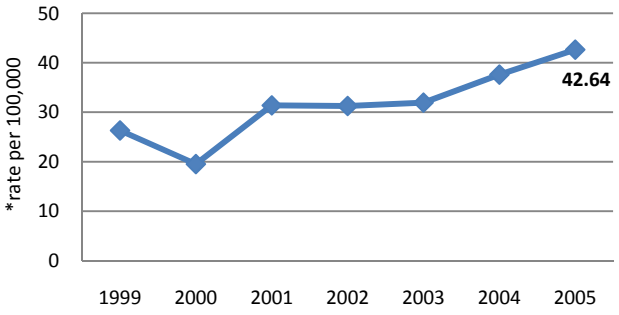
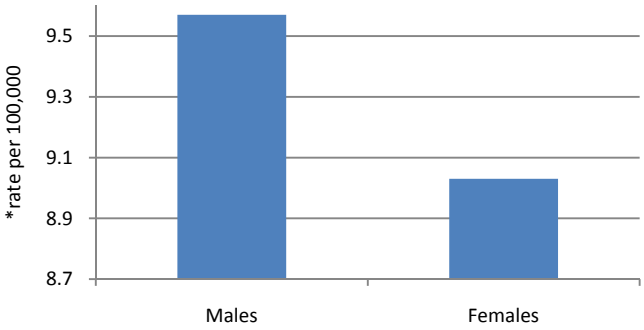


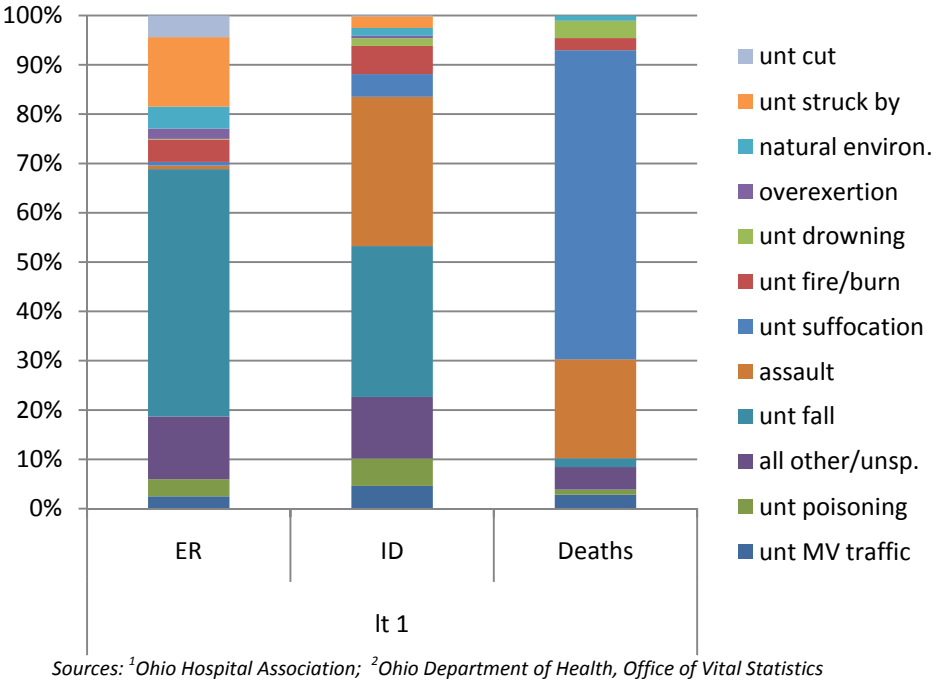
Figure 1.6. Unintentional injury death rate* *for infants less than 1 year*, Ohio, 2002-05[1]



[1]*Source: CDC, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (1999-2005) [cited 2008 02-28]. Available from URL: http://www.cdc.gov/ncipc/wisqars*

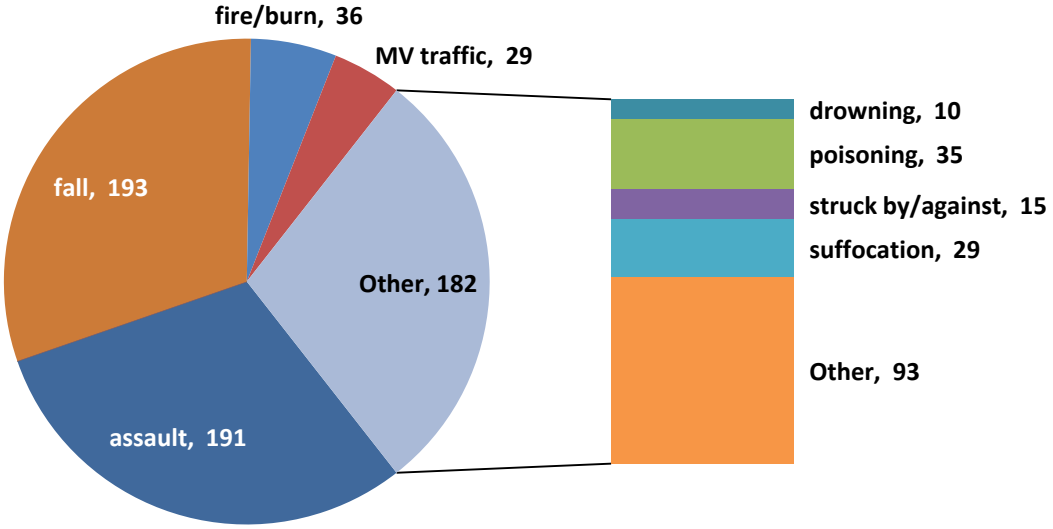
The leading causes of unintentional injury death for infants are suffocation, fire/burn, motor vehicle traffic and drowning. Suffocation accounted for 72 percent of the deaths in 1999-2000.

Figure 1.4. Proportional distribution of ER visits[1], IDs[1] and deaths[2], *infants less than 1 year,* by cause of injury, Ohio, 2002-05



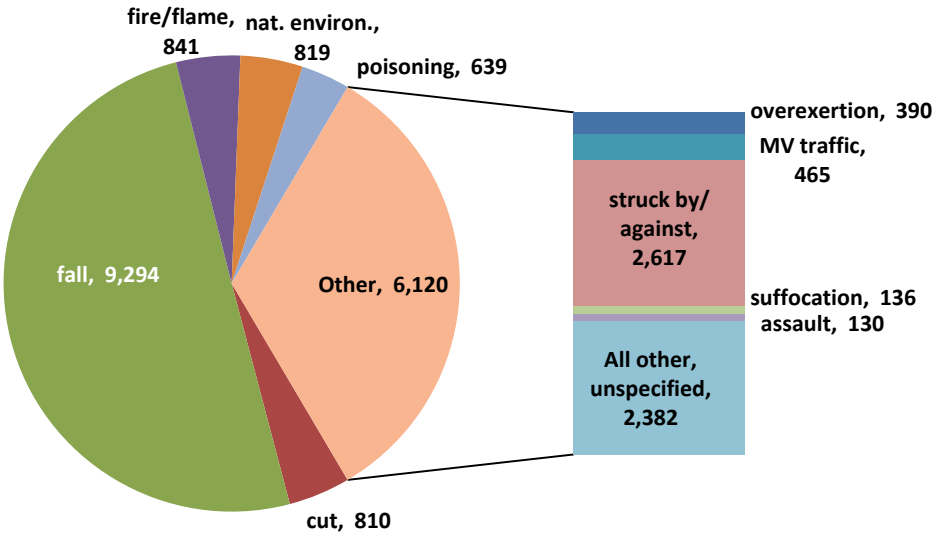
Sources: [1]Ohio Hospital Association; [2]Ohio Department of Health, Office of Vital Statistics

Figure 1.7. Proportional distribution of hospital inpatient discharges[1] by cause of injury* for *infants less than 1 year*, Ohio, 2002-05



**unintentional unless "self-harm", "assault" and "All other/unspecified"*
[1]Source: Ohio Hospital Association

Figure 1.8. Proportional distribution of ER visits[1] by cause of injury* for *infants less than 1 year*, Ohio, 2002-05*

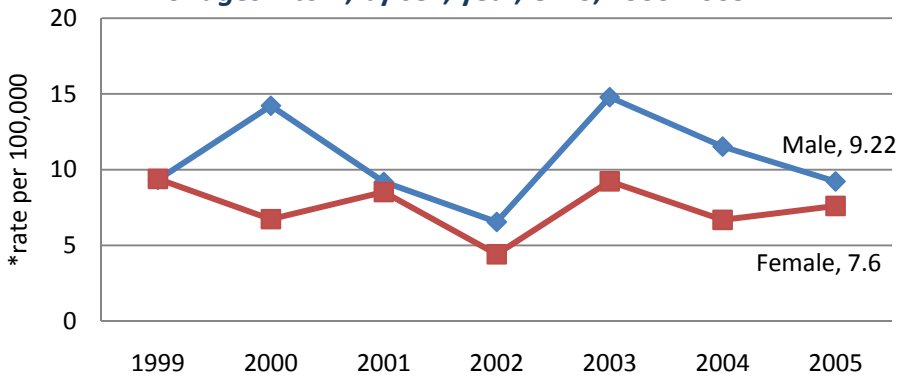


**unintentional unless "self-harm", "assault" and "All other/unspecified"*
[1]Source: Ohio Hospital Association

YOUNG CHILDREN (AGES 1-4)

The unintentional injury death rate for young males was greater than the rate for females for each year from 1999-2005, although the disparity between the rates varied from year to year. In 2005, the unintentional injury death rate was 9.22 per 100,000 males and 7.6 per 100,000 females aged 1-4.

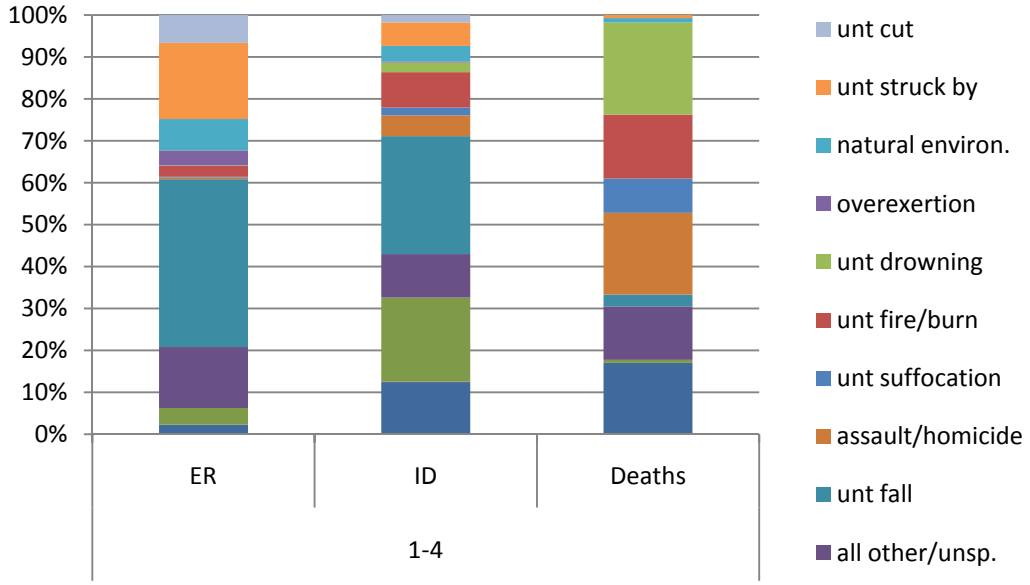
Figure 1.10 Unintentional injury death rates* for *ages 1 to 4*, by sex, year, Ohio, 1999-2005[1]



[1]Source: CDC, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (1999-2005) [cited 2008 02-28]. Available from URL: http://www.cdc.gov/ncipc/wisqars

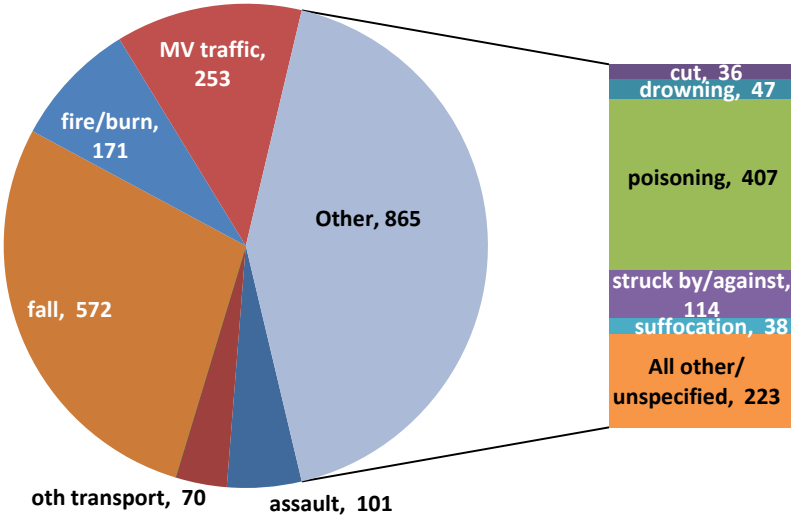
From 2002-05 in Ohio, 210 children aged 1-4 years died from unintentional injuries. Drowning (60 deaths), motor vehicle traffic crashes (49) and fire/burn (42) accounted for 81.6 percent of these unintentional injury deaths. Homicide (56) was the third-leading cause of death for this age group from 2002-05. For injury-related hospitalizations, falls (572), poisoning (407), MV traffic (253) and burns (141) were the leading causes. Falls (75,619), unintentional struck by/against (34,312), other specified injuries (18,606) and natural environment (14,129) were the leading causes of injury-related ER visits for Ohio children aged 1-4 years.

Figure 1.9. Proportional distribution of ER visits[1], IDs[1] and deaths[2], *ages 1-4,* by cause of injury, Ohio, 2002-2005



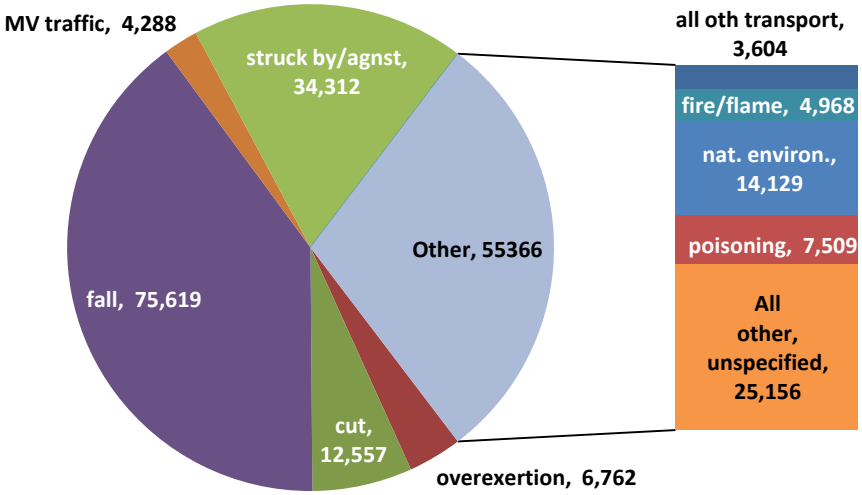
Sources: [1]Ohio Hospital Association; [2]Ohio Department of Health, Office of Vital Statistics

Figure 1.11 Proportional distribution of hospital inpatient discharges[1] by cause of injury* for *ages 1-4*, Ohio, 2002-05



**unintentional unless "self-harm", "assault" and "All other/unspecified"*
[1]Source: Ohio Hospital Association

Figure 1.12. Proportional distribution of ER visits[1] by cause of injury* for *ages 1-4*, Ohio, 2002-05

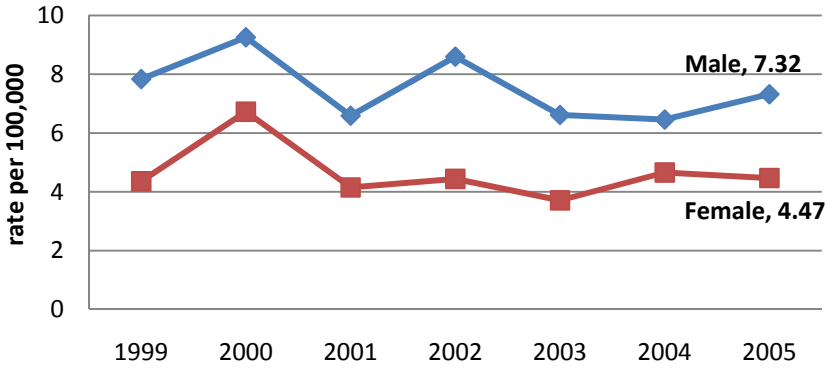


**unintentional unless "self-harm", "assault" and "All other/unspecified"*
[1]Source: Ohio Hospital Association

CHILDREN (AGED 5-14 YEARS)

As with other age groups, males aged 5-14 years are at greater risk for injury death than females. In 2005, the unintentional injury death rate was 7.32 per 100,000 males and 4.47 per 100,000 females. Death rates have fluctuated annually from 1999-2005, but overall have been relatively stable with a slight decrease for males and a slight increase for females from 1999 to 2005.

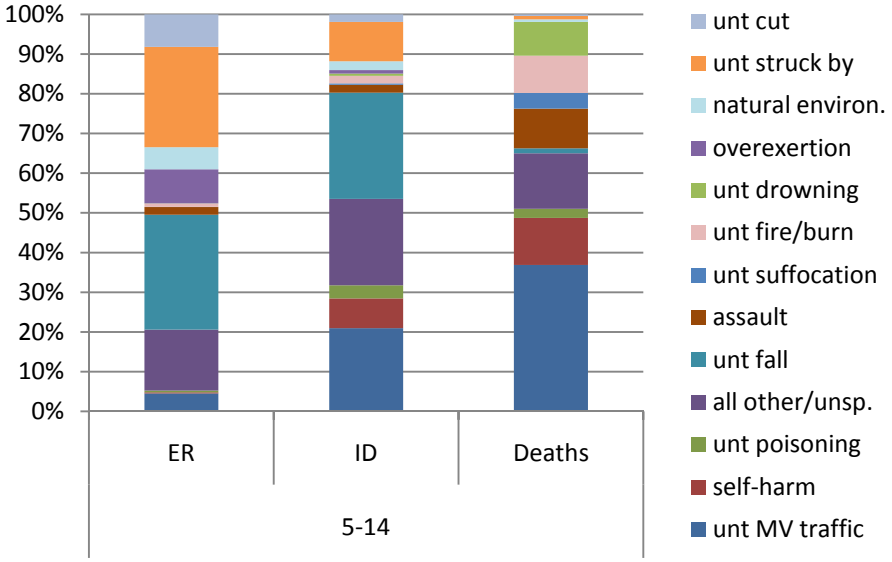
Figure 1.14. Unintentional injury death rate per 100,000 by year, sex, *ages 5-14*, Ohio, 1999-2005[1]



[1]Source: CDC, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (1999-2005) [cited 2008 02-28]. Available from URL: http://www.cdc.gov/ncipc/wisqars

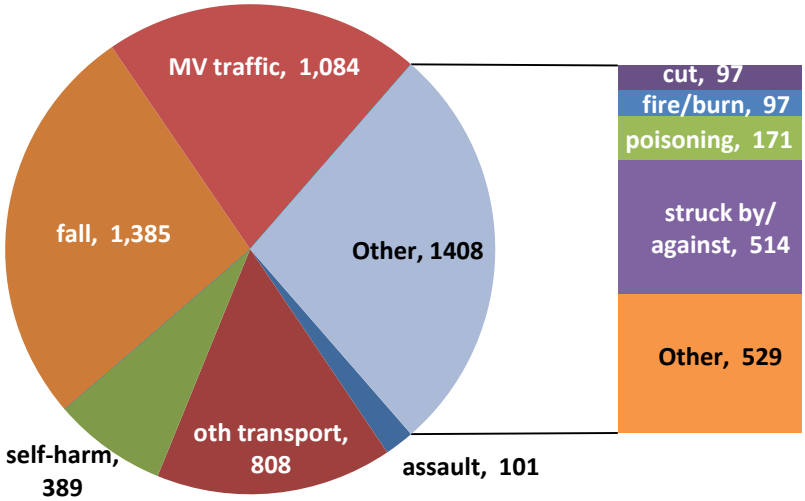
From 2002-2005 in Ohio, 322 children aged 5-14 years died from unintentional injuries. MV traffic (177), fire/burns (45) and drowning (41) accounted for 81.7 percent of these unintentional injury deaths. Violence is also a significant public health issue for young children in Ohio. For children aged 5 to 9 years, homicide (20) was the fourth-leading cause of death. For children aged 10 to 14 years, suicide (58) was the third-leading cause and homicide (28) was the fourth-leading cause of death. Firearm-related violence is the cause of death in nearly half of the homicides for ages 5-14. For injuries requiring inpatient hospital treatment among children aged 5-14 years from 2002-05, the four leading causes were falls (1,385), motor vehicle traffic (1,084), struck by/against (514) and other land (e.g., ATVs) transportation (489). The four leading causes of injury-related ER visits for Ohio children in this age group were falls (131,982), struck by/against (115,452), overexertion (39,295) and cut pierce (37,266).

Figure 1.13. Proportional distribution of ER visits[1], IDs[1] and deaths[2], *ages 5-14*, by cause of injury, Ohio, 2002-2005



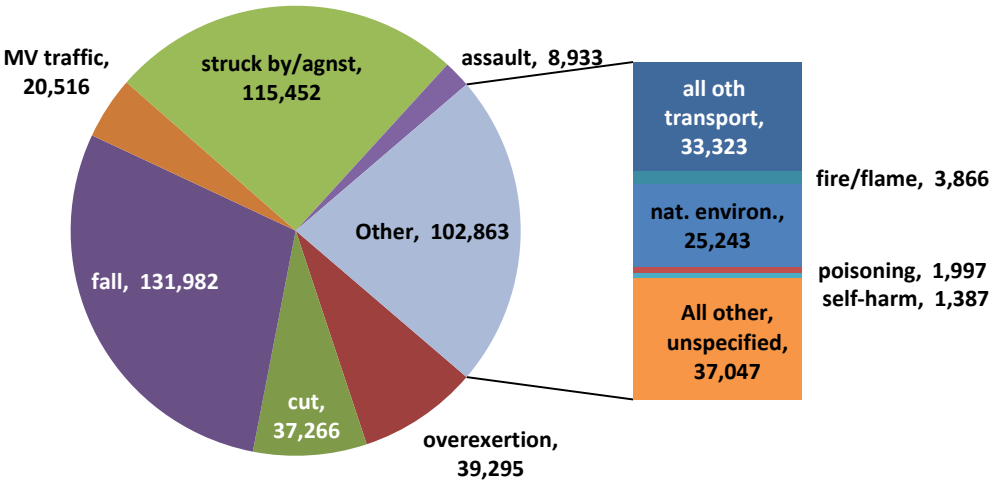
Sources: [1]Ohio Hospital Association; [2]Ohio Department of Health, Office of Vital Statistics

Figure 1.15. Proportional distribution of hospital inpatient discharges[1] by cause of injury* for *ages 5-14*, Ohio, 2002-05



**unintentional unless "self-harm", "assault" and "All other/unspecified"*
[1]Source: Ohio Hospital Association

Figure 1.16. Proportional distribution of ER[1] visits by cause of injury* for *ages 5-14*, Ohio, 2002-05



**unintentional unless "self-harm", "assault" and "All other/unspecified"*
[1]Source: Ohio Hospital Association

RACE AND INJURY AMONG CHILDREN

Disparities exist in injury death rates among the races. For nearly all leading types of injury among children younger than 14 years, rates for black children are greater than for white children, with the exception of MV traffic ages 0-9 and unintentional suffocation ages 5-14. These disparities are most significant for unintentional suffocation and homicide rates among children aged 9 years and younger. Unintentional suffocation and homicide rates among black children aged 0-4 are dramatically greater than rates for white infants, and for other types of injury as well. For all these types of injury with the exception of MV traffic, rates for the younger children aged 0-4 years are higher than rates for children older than 5 years. For MV traffic, death rates are highest for both black and white children aged 10-14 than for younger children.

Unintentional injury death rate per 100,000 by year, race (black/white), ages 0-14, Ohio, 1999-2005[1]

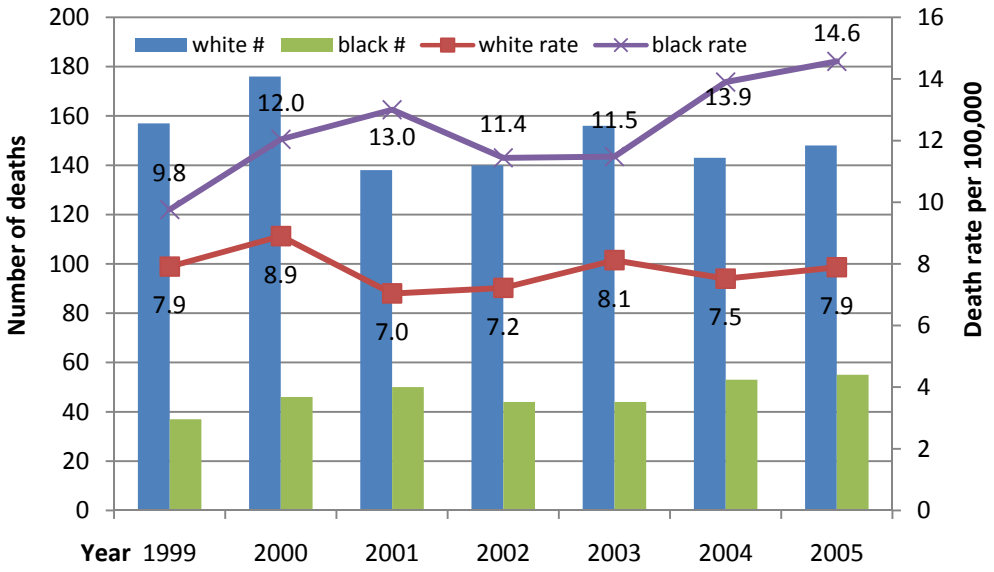
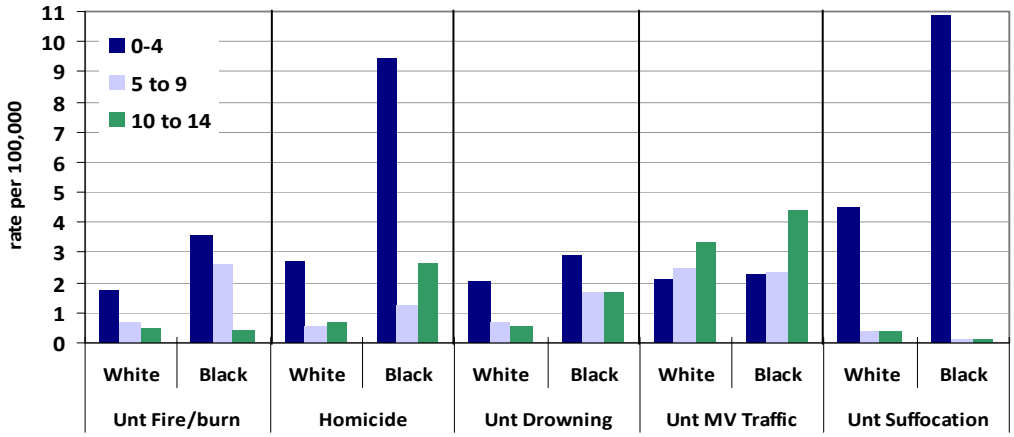
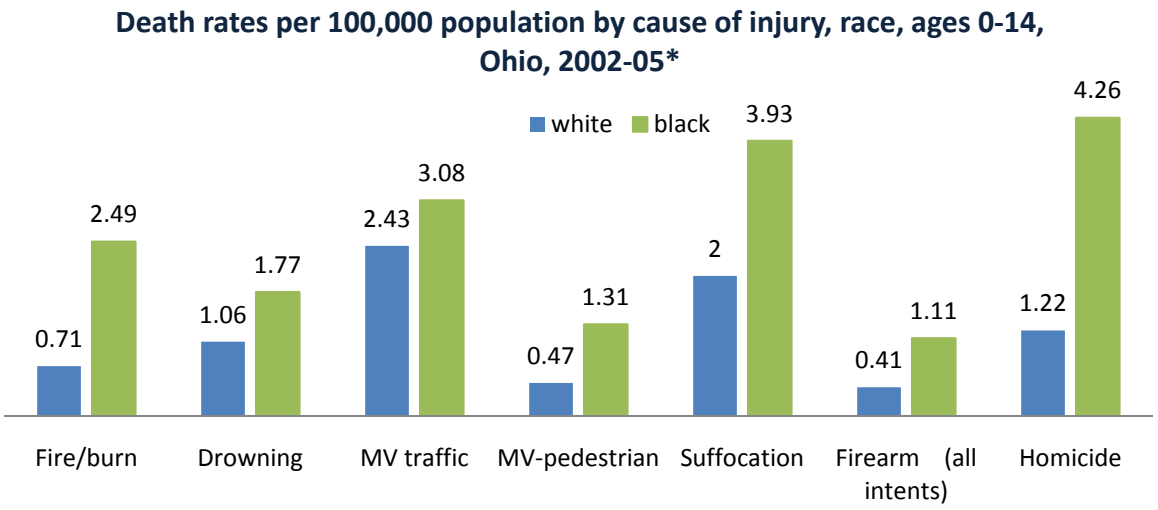


Figure 1.17. Death rates per 100,000 children *aged 0-14* for leading causes of injury, by age group, race, 1999-2005



Source: CDC, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (1999-2005) [cited 2008 02-28]. Available from URL: http://www.cdc.gov/ncipc/wisqars

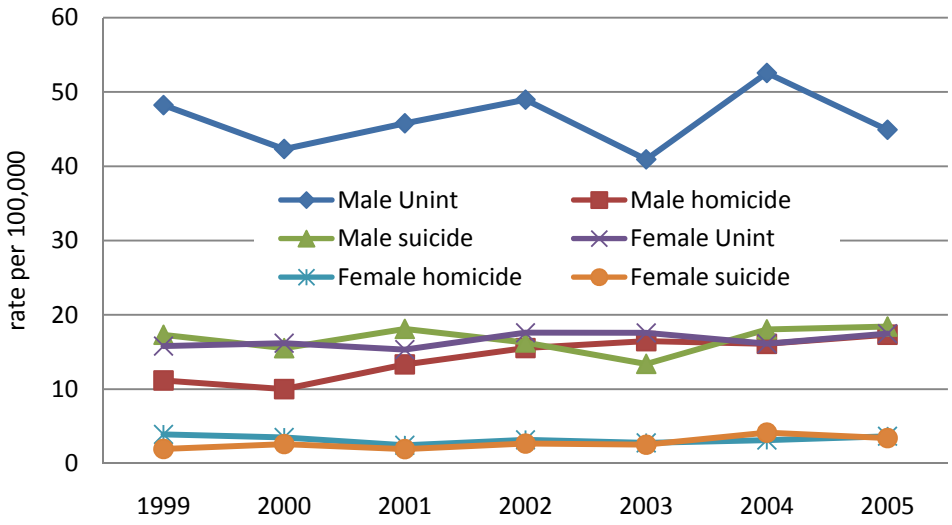


**Source: CDC, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (1999-2005) [cited 2008 02-28]. Available from URL: http://www.cdc.gov/ncipc/wisqars*

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. Ohio males aged 15-24 years are at greatest risk for fatal unintentional injuries (Figure 1.18) The rate fluctuated considerably from a low of 40.92 in 2003 to a high of 55.56 in 2004. Overall, the unintentional injury death rate among males aged 15-24 decreased approximately 7 percent from 1999 to 2005. This was largely due to a 29 percent decrease in the MV traffic death rate in this age group. From 1999 to 2005, the male homicide rate increased 55 percent from 11.2 to 17.3 homicides per 100,000 Ohio males aged 15-24, nearly matching the unintentional injury death rate of 17.5 per 100,000 among females in this age group. Also on the rise are female suicides. From 1999 to 2005, the rate among females aged 15-24 increased 74 percent from 1.96 to 3.42 per 100,000.

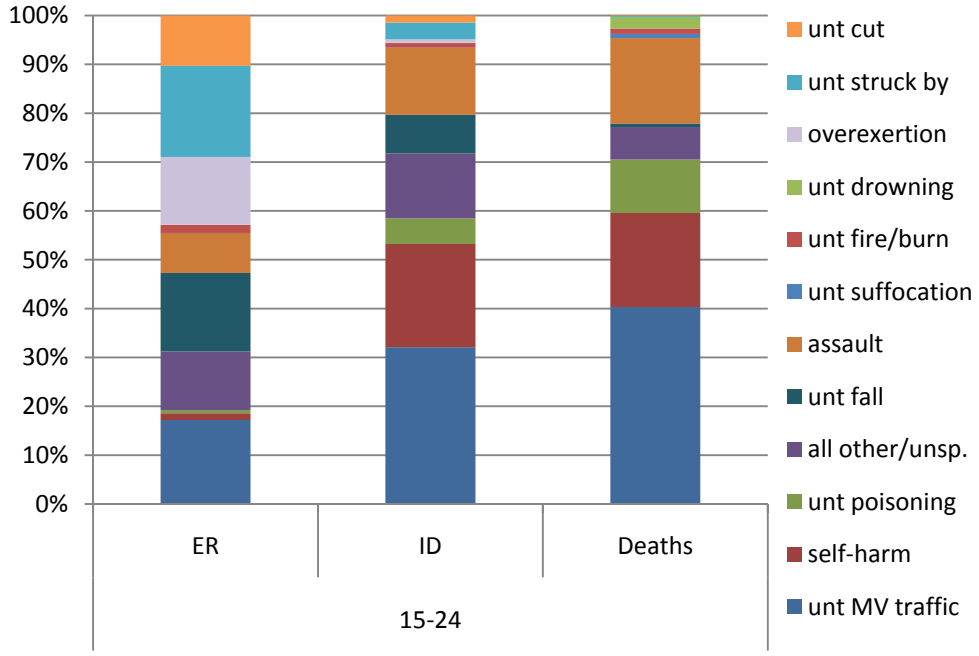
Figure 1.18. Injury death rates per 100,000 by sex, year, intent, *ages 15-24*, Ohio, 1999-2005*



**Source: CDC, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (1999-2005) [cited 2008 02-28]. Available from URL: http://www.cdc.gov/ncipc/wisqars*

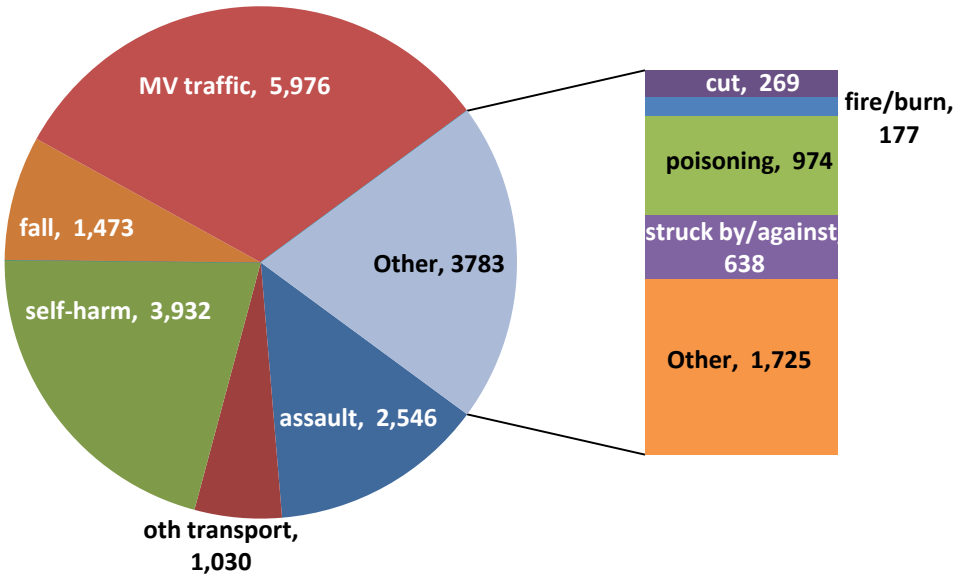
During 2002-05 in Ohio, unintentional injuries, suicides and homicides were the three leading causes of death, respectively for youth ages 15 to 24. Motor vehicle traffic accounted for 40 percent of the deaths, suicide accounted for 19 percent and homicides 17 percent. Firearms were the cause of death in 80 percent of homicides and 44 percent of suicides. Suffocation was the cause of death in 38 percent of suicides in this age group. For injury-related hospitalizations, MV traffic (5,976), self-harm (3,932), assault (2,111) and falls (1,827) are the four leading causes. Unintentional struck by/against (115,612) was the leading cause of ER visits for injury, followed by motor vehicle traffic (106,304), falls (99,403) and overexertion (85,893).

Figure 1.19. Proportional distribution of ER visits[1], IDs[1] and deaths[2], *ages 15-24*, by cause of injury, Ohio, 2002-2005



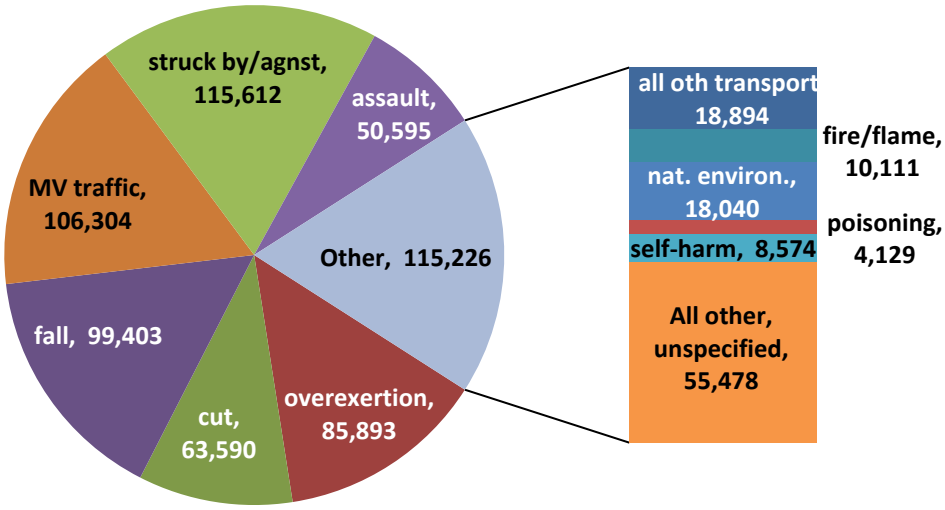
Sources: [1]Ohio Hospital Association; [2]Ohio Department of Health, Office of Vital Statistics

Figure 1.20. Proportional distribution of *hospital inpatient discharges*[1] by cause of injury* for *ages 15-24*, Ohio, 2002-05



**unintentional unless "self-harm", "assault" and "All other/unspecified"*
[1]*Source: Ohio Hospital Association*

Figure 1.21. Proportional distribution of *ER visits*[1] by cause of injury* for *ages 15-24*, Ohio, 2002-05

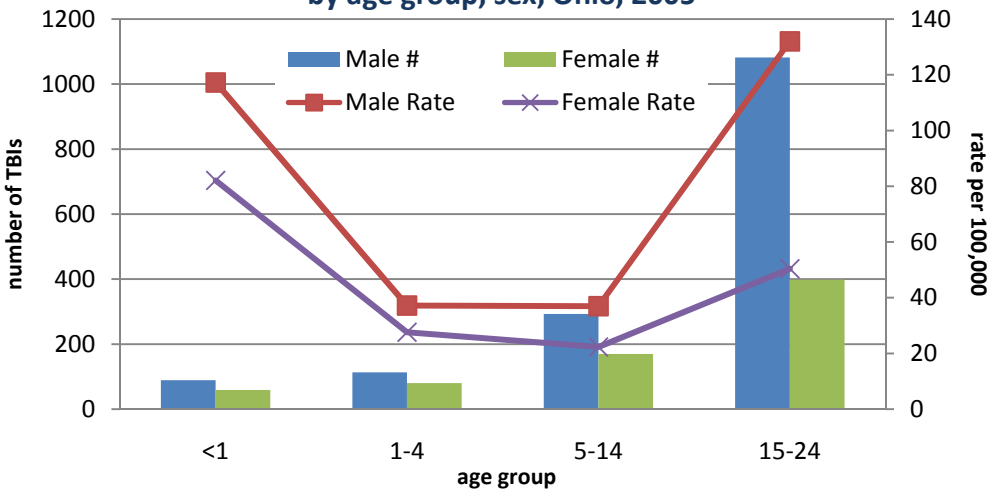


**unintentional unless "self-harm", "assault" and "All other/unspecified"*
[1]*Source: Ohio Hospital Association*

TRAUMATIC BRAIN INJURY (TBI) AMONG YOUNG OHIOANS

Traumatic brain injuries are one of the most serious and permanent injuries. They are caused by many mechanisms of injury including falls, motor vehicle crashes, violence, bicycle-related crashes, etc. Young males are at greater risk for TBI at all ages, especially adolescent and young adult males (ages 15-24 years).

Figure 1.22. Number of HIDs[1] and HID rate[2] for TBI[3] by age group, sex, Ohio, 2005



[1]*Source: Ohio Hospital Association* [2]*per 100,000* [3]*traumatic brain injury*

LEADING CAUSES OF INJURY AMONG OHIOANS

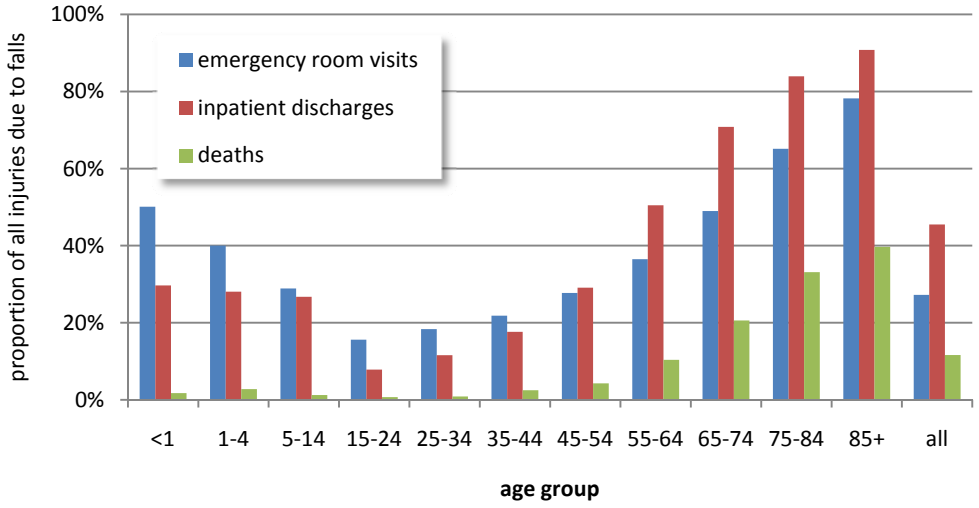
The following section presents injury data for young Ohioans by examining specific leading causes including unintentional falls, motor vehicle-related injury, suicide/self-harm, homicide/assault and firearm-related injury.

UNINTENTIONAL FALLS

Falls are the leading cause of injury-related inpatient hospitalization for Ohioans and therefore contribute substantially to the burden or health care system faces. From 2002-2005, 66,845 fall-related inpatient hospitalizations resulted in 303,895 days stay and nearly $1.2 billion in medical costs. In addition, 817,074 ER visits were attributable to falls-related injury.

For all Ohioans, falls accounted for 45 percent of injury-related inpatient hospitalizations and 27 percent of ER visits in the study period, Figure 1.23. The proportions of hospitalizations and ER visits attributable to a fall decreased with age up to 24, and then increased consistently from age 25 and up. Fall-related injuries represented the smallest proportion of all hospitalized injuries among ages 15-24 (6.3 percent). Falls accounted for half of all injury-related ER visits and nearly one-third of inpatient hospitalizations among infants. For children younger than 14 years, approximately 28 percent of injury-related hospitalizations and 39 percent of ER visits were due to falls, Figure 1.23.

Figure 1.23 Proportion of injury-related ER visits[1], HIDs[1], and deaths[2] due to falls, by age group, Ohio, 2002-05



[1]*Source: Ohio Hospital Association*
[2]*Source: Ohio Department of Health, Office of Vital Statistics*

FALLS AMONG THE YOUNG (AGES 0-24)

The physical and cognitive changes marking the developmental stages of children and youth are known to affect risk for specific types of falls.

- Infants fall from furniture (beds, high chairs, changing tables, cribs).
- Toddlers fall down stairs, from furniture, buildings (i.e., windows, balconies) and from playground equipment.
- Older children fall from playground equipment (climbing equipment, slides, swings), during sports and recreation (skiing, skating, scooters, etc.).
- Teenagers and young adults fall during sports, recreation.

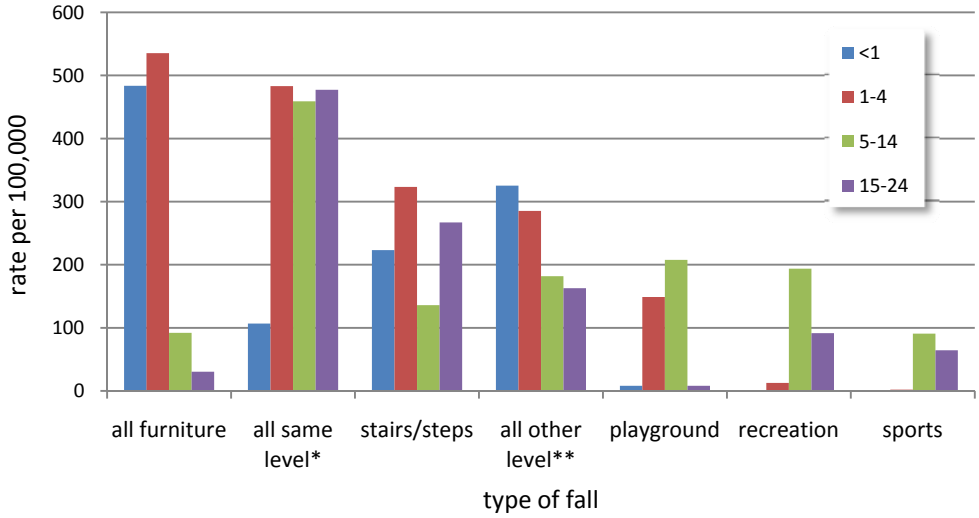
Between 2002-05, in Ohio, there were 3,624 fall-related HIDs and 316,301 ER visits among youth aged 24 or younger. These accounted for 5.4 percent of all fall-related hospitalizations and 34.7 percent of fall-related ER visits. Fall-related injuries among 0-24-year-olds were more likely to be treated in the ER and not require an overnight stay in the hospital (98.9 percent vs. 88.8 percent for persons 25 or older.)

Falls were the leading cause of injury-related ER visits and hospitalizations for children in each of the less than 1, 1-4, and 5-14-year age groups. For 15-24-year-olds, falls were the third-leading cause of ER visits and fourth-leading cause of hospital admissions. For the entire 0-24-year age range, falls accounted for 14 percent of injury-related hospital admissions and 24 percent of ER visits.

TYPES OF FALLS

Figure 1.24 presents the ER visit rates for these same age groups by type of fall. *Stairs/steps* remained a significant cause of fall-related injury among all youth. Rates were highest (325 per 100,000) for children aged 1-4 years and lowest for children 5-14 years. Furniture-related falls lead to the highest ER visit rates for children younger than 4 years. Playground-related falls had the second highest ER visit rate for ages 5 to 14, after falls on all same level.

Figure 1.24 ER visit[1] rates[2] by type of fall[3], age group, ages 0-24, Ohio, 2002-05

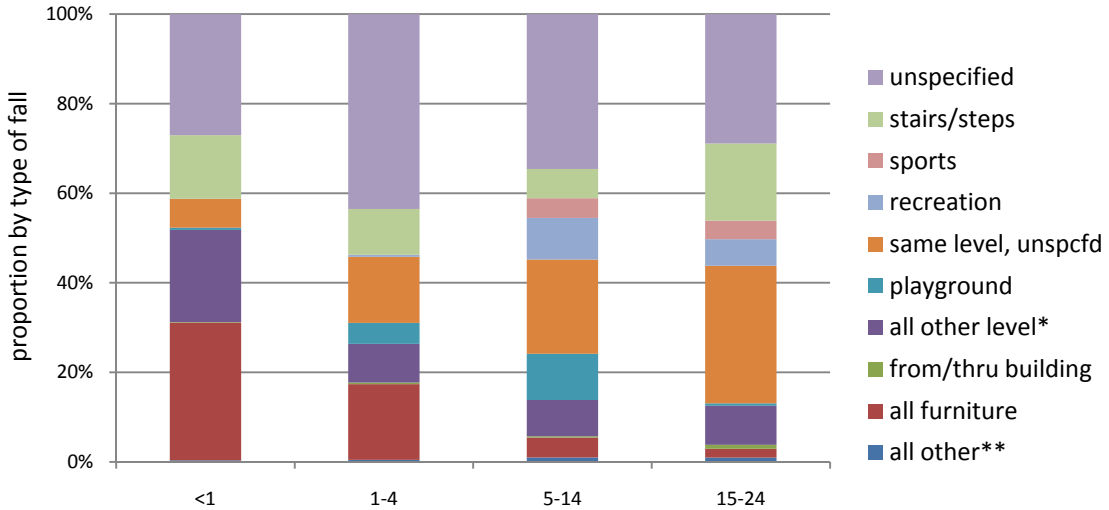


[1]*Source: Ohio Hospital Association*
[2]*per 100,000*
[3]*unspecified falls not depicted*

**except recreation, sports*
*** except all furniture, playground*

For fall-related ER visits, Figure 1.25 depicts the proportional distribution of type of fall for each age group. Falls were categorized in a manner that enabled evaluation of falls likely to occur among the young. As can be observed in Figure 1.25, the proportion of ER visits due to falls from *all furniture* decreased with age, while the proportion of *same level, unspecified* falls increased with age. The highest proportion of fall-related ER visits attributable to *playground equipment* (10 percent), *sports* (4.4 percent), and *recreation* (9.3 percent) activities each occurred among children aged 5 to 14 years. *Stairs/steps* were a significant cause of falls requiring ER visits for the whole age range among 0-24-year-olds.

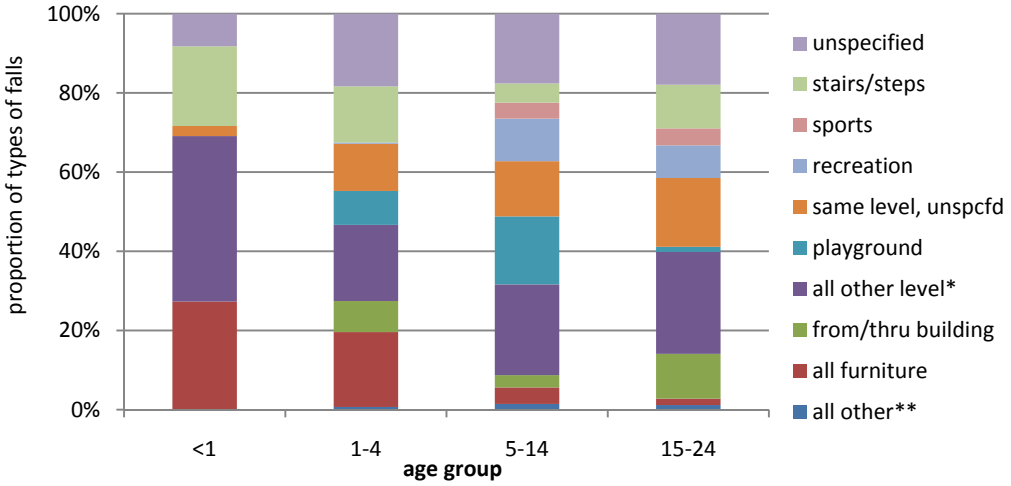
Figure 1.25. Proportional distribution of ER visits[1] by type of fall, age group, ages 0-24, Ohio, 2002-05



**except from playground equip., all furniture, from/thru bldg*
***=sidewalk, conveyance, accidentally pushed*

Nationally, young children are most likely to be injured seriously enough to require hospitalization when they fall from one level to another such as on a *playground*, on *stairs/steps*, from *furniture;* or *from/thru a building*, e.g. out of a window. Figure 1.26 illustrate that this was also the case in Ohio. Almost 90 percent of hospitalized infants less than a year old fell from *all other level*, *all furniture* or on *stairs/steps*.

Figure 1.26. Proportional distribution of HIDs[1] by type of fall, age group, ages 0-24, Ohio, 2002-05

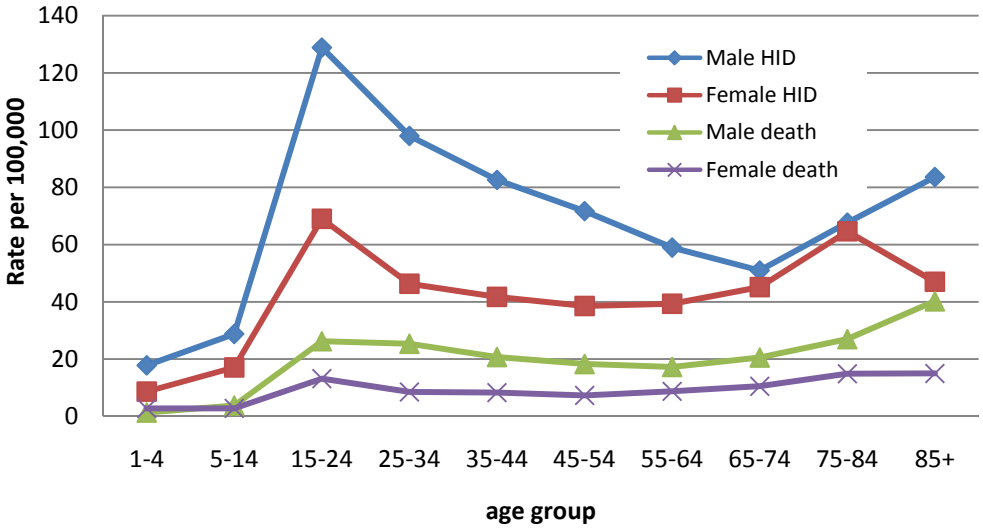


except all furniture, playground, from/thru building* *=sidewalk, conveyance, accidentally pushed*

MOTOR VEHICLE-RELATED INJURY

- From 2002-2005, an average of 1,359 Ohio residents died from unintentional MV-related injuries.
- MV traffic was the overall leading cause of injury-related death in Ohio and by age group, for ages 5-34.
- Of the 337 unintentional MV traffic-related deaths among Ohio residents aged 5-14 from 1999-2005, 86 were occupants, 83 were pedestrians and 24 were pedal cyclists (138 unspecified).

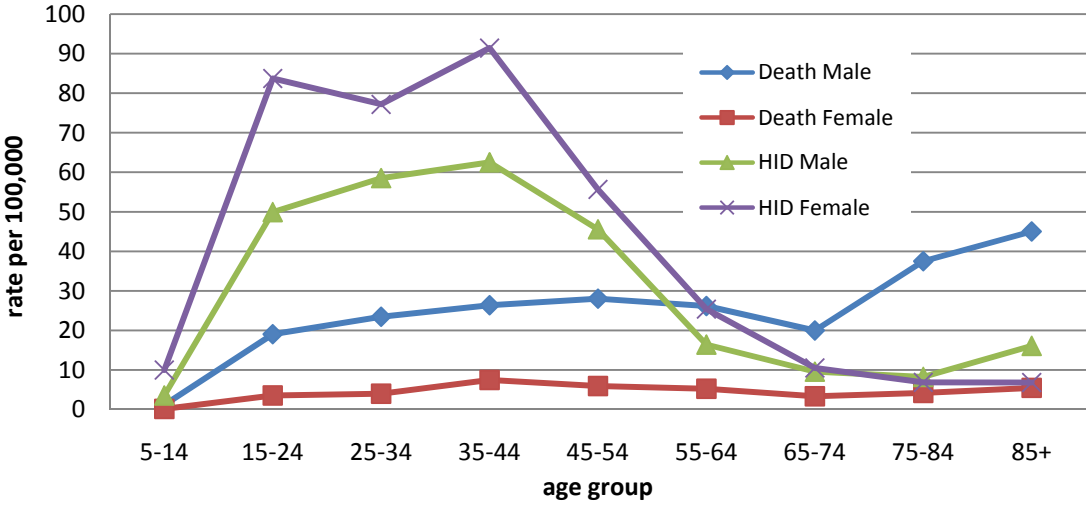
Figure 1.27. ID[1] and death[2] rates (per 100,000) of Ohio residents for motor vehicle-related injury, by age group, 2005



[1]Soure: Ohio Hospital Association *[2]Source: ODH Office of Vital Statistics*

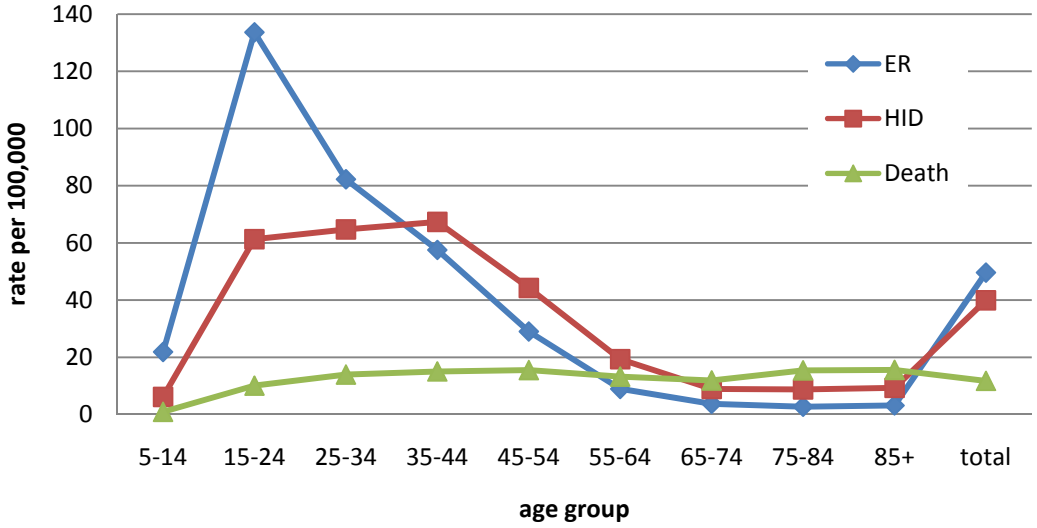
SUICIDE & SELF-HARM

Figure 1.28. Suicide[1] and self-harm-related hospital inpatient discharge[2] rates (per 100,000), by age group, sex, Ohio 2005



[1]Source: ODH Office of Vital Statistics *[2]Source: Ohio Hospital Association*

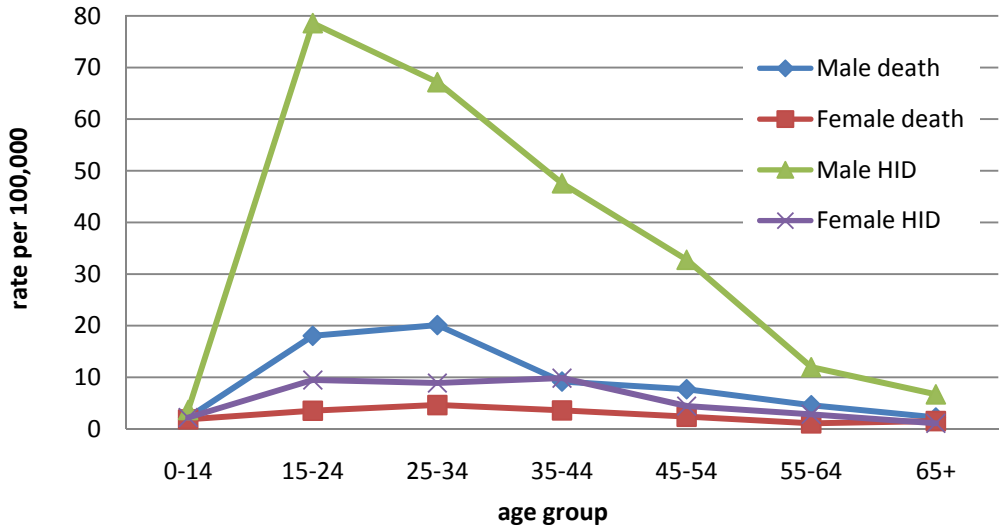
Figure 1.29. Average annual suicide[1], HID[2] and ER[2] rates (per 100,000) for self-harm by age group, Ohio, 2002-2005



[1]Source: ODH Office of Vital Statistics *[2]Source: Ohio Hospital Association*

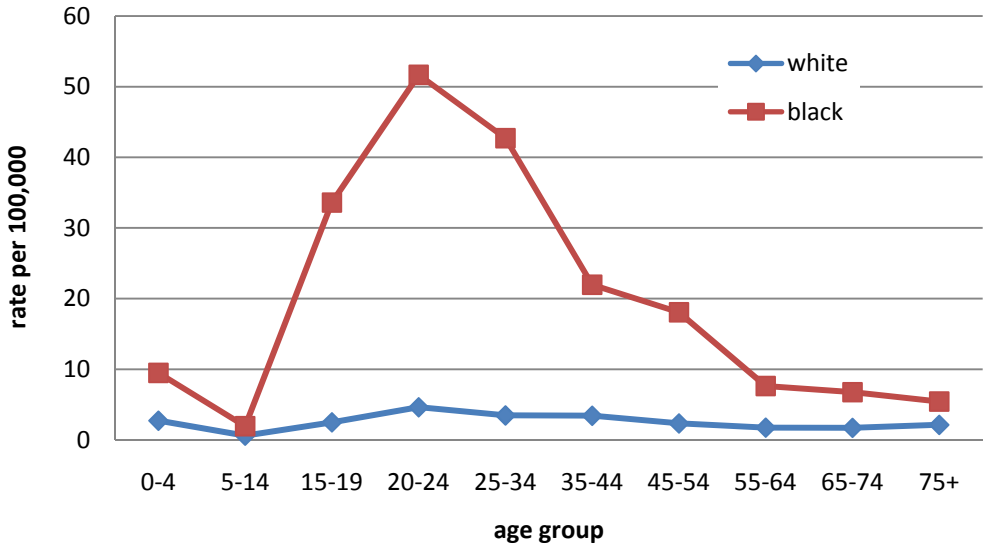
HOMICIDE AND ASSAULT

Figure 1.30. Homicide[1] and assault-related hospital inpatient discharge[2] rates (per 100,000) by age group, Ohio, 2005



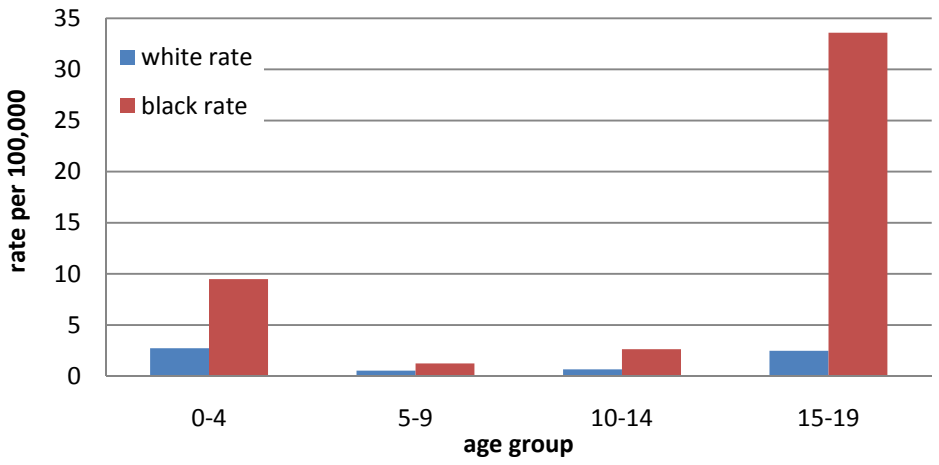
[1]Source: ODH Office of Vital Statistics *[2]Source: Ohio Hospital Association*

Figure 1.31. Homicide[1] rates (per 100,000), by age group, race, Ohio, 1999-2005



[1]Source: ODH Office of Vital Statistics

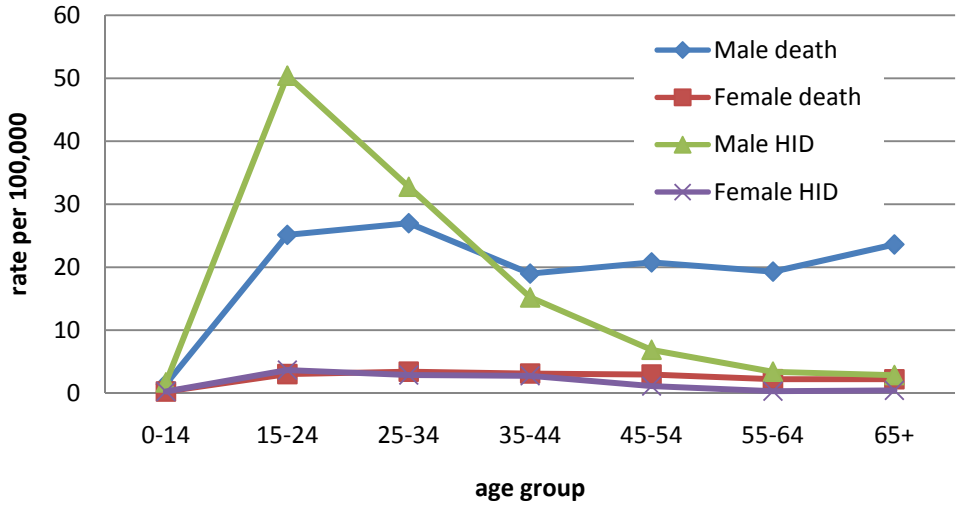
Figure 1.32. Homicide[1] rates (per 100,000) ages 0-14 by age group, race, Ohio, 1999-2005



[1]*Source: ODH Office of Vital Statistics*

FIREARM-RELATED INJURY:

Figure 1.33. Firearm-related (all intents) death[1] and hospital inpatient discharge[2] rates by age group, Ohio, 2005



[1]*Source: ODH Office of Vital Statistics* [2]*Source: Ohio Hospital Association*

INJURY DEATH AND HOSPITAL INPATIENT DISCHARGE RATES BY CAUSE AND AGE GROUP

Injury *death rates*[1] (per 100,000) by cause, age group, for selected leading causes of injury, Ohio, 2005

Age Group	Fall	Poisoning*	Suicide	Fire	Firearm*	MVC	Homicide	TBI
<1	2.03+	2.71+	***	0.68+	***	***	**10.15**	*7.44*
1-4	0.34+	0.67+	***	0.84+	0.51+	**2.02+**	**2.02**	*4.38*
5-14	***	0.26+	0.64+	0.84+	1.09	**3.28**	1.29	*3.35*
15-24	0.37+	9.01	11.44	0.68+	14.30	**19.83**	10.94	*18.34*
25-34	0.21+	17.41	13.71	0.34+	15.21	**16.93**	12.40	*20.01*
35-44	1.88	**23.44**	16.82	0.67+	10.99	14.45	6.38	*18.58*
45-54	3.08	**23.79**	16.75	1.11	11.69	12.68	5.00	*19.31*
55-64	5.27	10.20	**15.30**	0.74+	10.45	12.84	2.80	*20.41*
65-74	14.27	4.84	10.86	2.09	8.51	**15.05**	2.36	*25.00*
75-84	**53.20**	5.23	17.31	3.61	13.71	19.66	1.44+	*56.63*
85+	**147.89**	3.83+	17.23	4.31	12.92	22.49	0.96+	*106.73*

[1]Source: ODH Office of Vital Statistics **all intents*

****numbers too small to provide reliable rates* *+rates may be unstable due to small numbers*

Injury-related *hospital inpatient discharge rates*[1] (per 100,000) by cause, age group, for selected leading causes of injury, Ohio, 2005

Age Group	Fall	Poisoning*	Self-harm	Fire	Firearm*	MVC	Assault	TBI
<1	46.02	10.15	***	***	***	6.09	15.57	100.16
1-4	29.50	17.03	***	1.69+	***	13.32	2.19	32.54
5-14	25.11	8.95	6.70	0.90+	1.42	23.05	2.06	29.81
15-24	23.25	85.59	66.51	1.74	27.47	99.51	44.69	91.99
25-34	30.84	92.66	67.85	1.64	17.82	72.17	38.04	67.85
35-44	48.94	105.96	77.12	1.70	8.93	62.00	28.54	65.82
45-54	77.84	82.14	50.73	1.92	3.96	54.86	18.32	59.69
55-64	136.09	44.51	21.06	2.06	1.81	48.79	7.24	60.31
65-74	316.19	37.04	10.08	1.83+	1.70+	47.77	4.32	88.47
75-84	967.71	29.03	7.39	1.80+	1.26+	65.82	2.89	197.65
85+	2429.44	40.20	9.57	2.39+	0.96+	57.91	1.44+	375.71

[1]Sources: Ohio Hospital Association **all intents*

****numbers too small to provide reliable rates* *+rates may be unstable due to small numbers*

Total Cost of Fatal Injuries by Age Group – Ohio Based on 1999-2002 Average Incidence, Cost in Year 2004 Dollars*						
Mechanism	**Total**	**0-19**	**20-44**	**45-64**	**65-85**	**85+**
Total	**$14,430,411,200**	**$2,469,791,500**	**$7,775,537,300**	**$2,937,991,400**	**$1,012,161,800**	**$234,929,500**
Unintentional	**$9,139,656,200**	**$1,759,509,700**	**$4,532,761,500**	**$1,848,778,400**	**$779,949,000**	**$218,657,700**
Cut/Pierce	$10,768,900	$925,900	$6,528,400	$2,132,200	$1,182,300	$0
Drowning/Submersion	$347,281,300	$153,010,200	$140,436,400	$46,589,900	$6,207,300	$1,037,700
Fall	$646,005,300	$26,394,900	$136,402,500	$184,940,800	$220,898,900	$77,368,000
Fire/Burn	$360,611,600	$128,116,600	$125,142,500	$72,562,400	$30,921,000	$3,869,300
Fire/Flame	$353,820,000	$125,936,700	$123,245,700	$70,665,000	$30,193,600	$3,779,000
Hot object/Substance	$6,791,600	$2,180,000	$1,896,900	$1,897,300	$727,200	$90,200
Firearm	$91,458,100	$26,435,700	$46,766,300	$15,999,700	$2,256,500	$0
Machinery	$69,697,200	$9,954,100	$36,057,500	$20,455,600	$2,963,400	$266,600
Motor Vehicle Traffic	$4,329,686,800	$1,024,136,800	$2,362,953,300	$704,380,700	$219,679,000	$18,537,100
Occupant	$1,450,323,000	$362,045,300	$776,417,700	$224,275,000	$81,362,800	$6,222,200
Motorcyclist	$384,856,900	$20,535,500	$280,204,400	$77,978,900	$6,138,000	$0
Pedal Cyclist	$43,497,700	$21,158,000	$15,021,300	$6,949,700	$368,800	$0
Pedestrian	$296,838,800	$96,839,500	$122,231,700	$56,822,400	$18,293,400	$2,651,700
Unspecified	$1,206,200	$0	$1,036,600	$0	$169,500	$0
Other	$2,152,964,300	$523,558,500	$1,168,041,500	$338,354,600	$113,346,400	$9,663,200
Pedal Cyclist, Other	$19,770,400	$3,993,400	$7,181,800	$7,531,600	$1,063,600	$0
Pedestrian, Other	$119,269,100	$28,797,000	$65,082,000	$19,793,100	$5,308,300	$288,700
Land Transport, Other	$159,136,900	$47,364,200	$71,883,300	$31,395,900	$7,631,100	$862,300
Transport, Other	$91,330,100	$17,245,800	$49,978,900	$20,274,700	$3,830,700	$0
Natural/Environment	$95,730,200	$12,983,800	$27,252,300	$33,107,700	$18,038,000	$4,348,400
Overexertion	$0	$0	$0	$0	$0	$0
Poisoning	$1,658,821,200	$55,024,200	$1,119,117,500	$453,378,200	$28,387,200	$2,914,300
Struck by/Against	$104,526,900	$13,065,000	$52,434,200	$34,674,900	$4,352,600	$0
Suffocation	$438,795,300	$163,857,000	$95,329,300	$79,492,300	$77,903,000	$22,213,600
Other	$227,638,900	$20,987,000	$113,945,500	$65,278,200	$21,847,200	$5,581,100
Unspecified	$369,128,000	$27,218,200	$76,269,900	$56,790,900	$127,478,600	$81,370,500
Self-inflicted	**$3,280,263,000**	**$269,926,100**	**$1,990,711,500**	**$814,894,700**	**$190,566,600**	**$13,800,000**
Cut/Pierce	$47,103,800	$2,065,200	$29,046,900	$13,713,200	$1,853,400	$425,400
Firearm	$1,669,671,100	$111,265,200	$975,164,600	$438,332,700	$135,018,500	$9,890,200
Poisoning	$581,867,300	$22,319,500	$334,539,500	$198,771,400	$24,893,700	$1,343,400
Suffocation	$781,965,400	$118,115,500	$524,232,900	$118,036,800	$19,678,400	$1,902,100
Other	$181,816,400	$16,161,000	$120,676,800	$36,189,200	$8,186,200	$239,100
Unspecified	$17,838,900	$0	$7,051,000	$9,851,400	$936,500	$0
Assault	**$1,674,903,100**	**$370,283,900**	**$1,064,311,000**	**$202,898,900**	**$35,166,200**	**$2,243,100**
Cut/Pierce	$161,990,600	$26,771,100	$105,601,100	$22,633,100	$6,744,400	$240,800
Firearm	$1,048,951,900	$183,456,100	$746,030,400	$107,667,300	$11,213,900	$584,100
Struck by/Against	$21,671,500	$3,924,600	$12,076,800	$4,300,100	$1,369,900	$0
Other	$268,798,800	$105,979,700	$115,541,000	$35,101,800	$11,286,700	$889,400
Unspecified	$173,490,400	$50,152,300	$85,061,600	$33,196,500	$4,551,300	$528,800
Undetermined	**$296,369,600**	**$62,827,200**	**$160,022,200**	**$68,173,900**	**$5,125,100**	**$221,300**
Legal or Military	**$39,583,400**	**$7,244,500**	**$27,731,000**	**$3,245,600**	**$1,354,900**	**$7,400**