

2008 Childhood Injury in Delaware



2008

Childhood Injury in Delaware

*A Report on Injury-Deaths and Hospitalizations
Among Children and Adolescents in Delaware*

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**DELAWARE HEALTH
AND SOCIAL SERVICES**
Division of Public Health



DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

June 11, 2008

Dear Colleagues,

The conventional wisdom that injuries are an inevitable part of childhood must be re-examined. Injuries can devastate a child's life and, as this report demonstrates, remain a leading cause of death.

But injuries are nearly always preventable. Thankfully, safety and product engineering offer families great assistance in keeping children safe. Seat belts, infant car seats, bicycle helmets, smoke alarms and prescription safety caps are just a few of the examples of safety devices that can save lives.

Using safety devices, removing hazards from the home, and educating family members on safe behaviors are all essential to preventing the tragedy of injuries. Please join me in making this commitment to our children.

Sincerely,

Jaime H. Rivera, MD, FAAP
Director



June 5, 2008

Dear Friends,

Government has a responsibility to protect the people. As Lt. Governor and as a parent, I take this responsibility very seriously. In my role as Honorary Chair of Safe Kids Delaware, I'm proud to oversee the good work and partnerships that keep our children out of harm's way.

Children are our greatest resource for the future, but can also be a very vulnerable population. As this report demonstrates, injury can be a daily threat for many children, and it requires a coordinated effort to protect our youth. Many groups, including Emergency Medical Services for Children, Safe Kids Delaware, the Office of Highway Safety, the Delaware State Fire School, A.I. duPont Hospital for Children, and Christiana Hospital, are working diligently to reduce the number of injuries to Delaware children.

This second Childhood Injury Report shows the problems we face with childhood injuries, and offers prevention strategies to keep our children safer. Please join us in taking these steps to protect our children from harm. We must continue to work together to make Delaware a safe place for our children to live, learn, and play.

Sincerely,

A handwritten signature in black ink that reads "John C. Carney, Jr." in a cursive script.

John C. Carney, Jr.
Lt. Governor



Introduction

Injury is the number one killer of children and young adults in the United States. Nationally there are more than 50 million injuries serious enough to warrant medical care annually (CDC, 2005). These result in an estimated total lifetime cost of \$400 billion spent on injuries in the United States. A 1985 report titled “Injury in America” suggested that a public health approach to injury, such as the approach used for other diseases, could lead to a significant reduction in injuries.

In Delaware, and across the nation, injury is the leading cause of death for children ages 1-19. The most stressful event that can occur in a family is the death of a child. Often a child’s functioning is impaired immediately after the injury occurs. The damage from injury can be short-term or long-term, and it impacts the entire family. Even worse, an injury can cause physiologic, psychological and social consequences for the rest of their lives. Outcomes from injury depend on services provided throughout on the continuum of our health care system.

This report provides very important data regarding hospital related cost of childhood injury in Delaware. Hospitals charged nearly \$32 million for injuries in the four year period 2002-2005.

In the emergency medical services, childhood injuries occur daily. In 2007, 28 percent (1,035/3,698) of paramedic calls for children were for pediatric trauma and 38 percent (3,419/8998) of the basic life support ambulance calls for children were for trauma. This is 3.6 paramedic calls per day and 9.4 basic life support calls per day for childhood injuries occurring in the state.

This report provides much needed data for injury prevention professionals, and prevention strategies for the public and policy-makers. This report intends to open the eyes of others to assist in helping make Delaware safer and healthier for our children.

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Overview and Summary

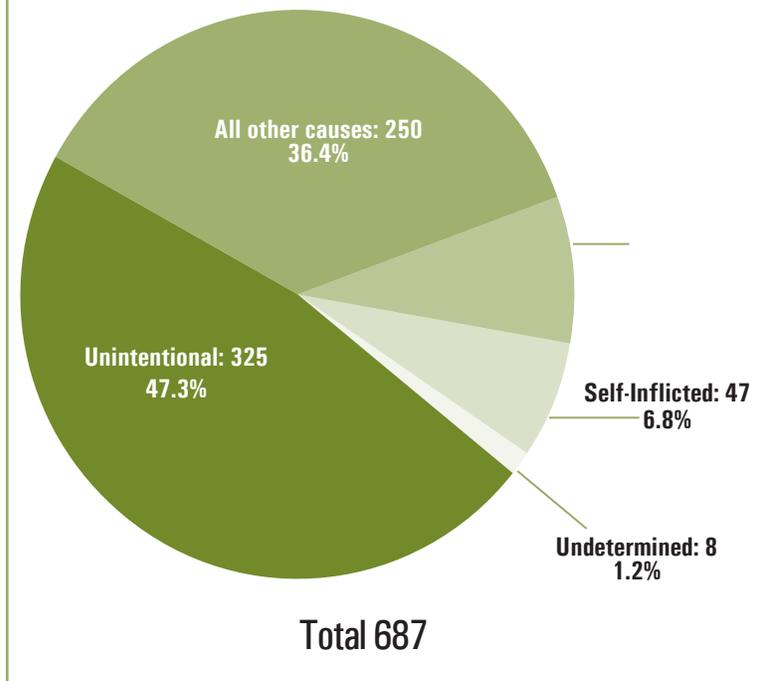
Injury remains the leading cause of death for children ages 1-19. Injuries cause an astounding 62.4 percent (429/687 in a ten-year period) of all child deaths in Delaware.

Unintentional injury caused 47 percent of all deaths. Injuries are classified as unintentional or intentional. Unintentional refers to an injury that is unplanned or unexpected. Intentional injury is the result of a purposeful human action, such as cutting behavior or suicide. Some believe that unintentional injury is unpredictable or unforeseen, but injury prevention professionals know otherwise.

Most often injuries are not accidents, but result from a predictable sequence of events. Harm can be avoided if risk factors are identified and action is taken. This report gives examples of how some injuries have decreased in selected areas as a result of prevention. This report is designed to reinforce the positive change that is already occurring. In areas that have not yet been addressed it should serve as an impetus for change to prevent needless injury and death in Delaware's children.

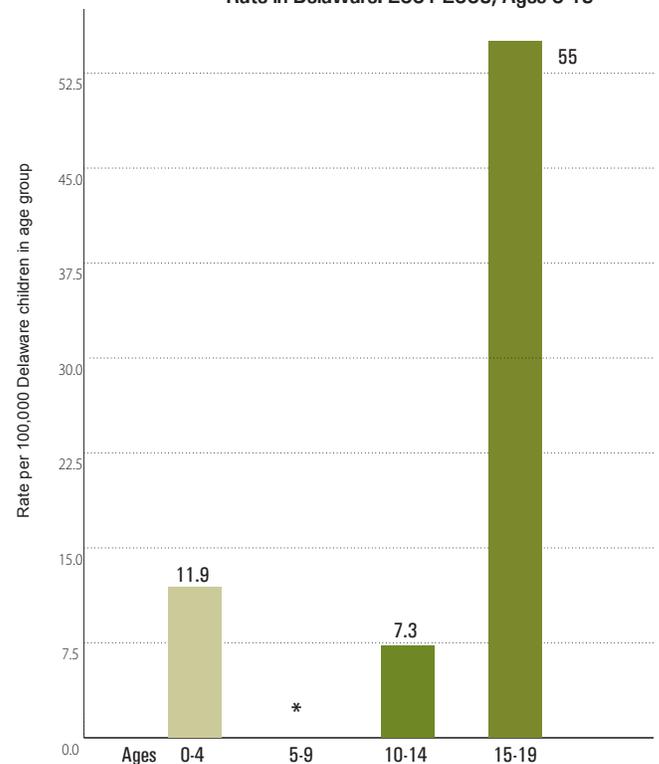
Causes of Death

Delaware, 1996-2005, Ages 1-19



Injury Death Rates

Rate in Delaware: 2001-2005, Ages 0-19

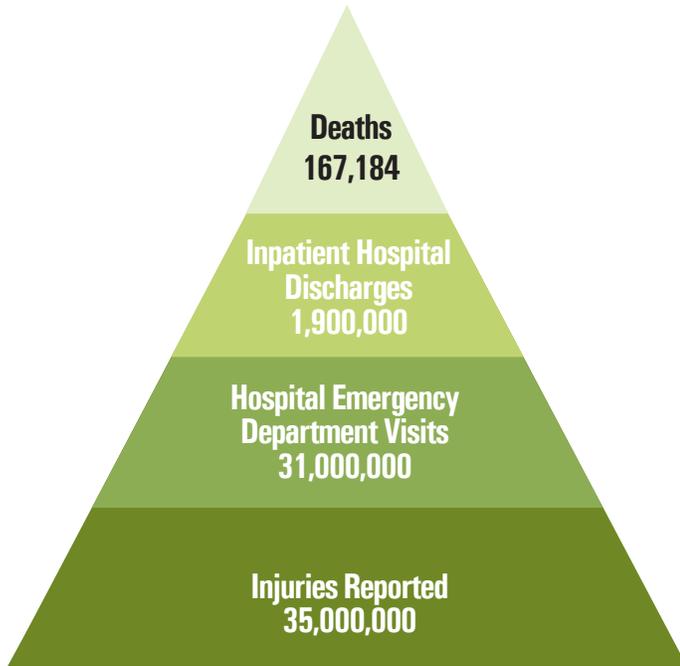


*Indicates not enough cases to determine an accurate rate.

Overview and Summary

Burden of Injury

United States, 2004, All Ages



Source: Injury in the United States: 2007 Chartbook from The US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.

The Injury Pyramid

The injury pyramid provides a graphic description of how information collected is only the tip of the iceberg for injuries. The most detailed national data shows us there were 35 million physician and outpatient visits for injuries. Data on injuries not receiving medical attention are not counted and researchers believe this is the largest number of all. Only the tip of this injury iceberg can be viewed by the data available.

Public health impact can be assessed by reviewing the number of fatal and non-fatal injuries presented to the various health care settings.

There are two ways to look at the economic burden of injury. One measure is lifetime medical costs, the other is lifetime productivity cost. In the US in 2000, fatal injury costs alone were estimated at \$1.1 billion. Medical costs for non-fatal injuries are estimated at \$79.1 billion for the rest of the cases covered by the injury pyramid. There are no estimates provided for mental health or psychological care provided to injured persons. Lifetime productivity costs for the fatal injuries soar to \$142 billion. For non-fatal injuries the estimate is \$184 billion including lost wages, benefits, and costs due to inability to perform household activities for an injury that occurred in 2000 (Corso, Finkelstein & Miller et al., 2006).



Overview and Summary

Leading Causes of Injury Deaths

From 1996-2005, injuries caused 460 deaths among Delaware's children age 0-19. A total of 1,008 deaths occurred from 1979-1998, the previous reporting period.

In the recent data, motor vehicle traffic injuries ranked first among leading causes statewide and in each county. Firearm injuries ranked second statewide in fatalities. Suffocation, which includes choking and strangulation, was the third leading injury death statewide.

The overall injury death rate for children under age 20 from 1996-2005 was 21.2 per 100,000 children, compared to 26.4 from 1979-1998.

More than half of pediatric injury deaths occurred in New Castle County, home to nearly two-thirds of the state's population. New Castle County had 102 of Delaware's 212 child motor vehicle deaths. Motor vehicle injuries were the leading cause of injury deaths in Kent County, making up nearly 55 percent of fatalities. Sussex County had a similar trend with 61.3 percent of pediatric injury deaths caused by motor vehicles, which claimed 65.

Leading Causes of Injury Deaths Delaware, 1996-2005, Ages 0-19			
Manner of injury/poisoning	Number	Percent	Rate
Motor vehicle traffic	212	46.1	9.75
Firearm	63	13.7	2.90
Suffocation	40	8.7	1.84
Drowning/ submersion	35	7.7	1.61
Fire/burn	30	6.5	1.38
Poisoning	24	5.2	1.10
All Other Injuries	56	12.1	*
Total	460	100.0	21.15

Leading Causes of Injury Deaths New Castle, 1996-2005, Ages 0-19			
Manner of injury/poisoning	Number	Percent	Rate
Motor vehicle traffic	102	37.2	7.29
Firearm	47	17.2	3.36
Suffocation	30	10.9	2.14
Drowning/ submersion	20	7.3	1.43
Poisoning	18	6.6	*
Fire/burn	15	5.5	*
All Other Injuries	42	15.3	*
Total	274	100.0	19.58

Leading Causes of Injury Deaths Kent County, 1996-2005, Ages 0-19			
Manner of injury/poisoning	Number	Percent	Rate
Motor vehicle traffic	45	54.9	11.48
Drowning/ submersion	9	11.0	*
Firearm	8	9.8	*
Suffocation	7	8.5	*
Poisoning	4	4.9	*
Fire/burn	2	2.4	*
All Other Injuries	7	8.5	*
Total	82	100.0	20.92

Leading Causes of Injury Deaths Sussex County, 1996-2005 Ages 0-19			
Manner of injury/poisoning	Number	Percent	Rate
Motor vehicle traffic	65	61.3	16.94
Fire/burn	13	12.3	*
Firearm	8	7.5	*
Drowning/ submersion	6	5.7	*
Suffocation	3	2.8	*
Poisoning	2	1.9	*
All Other Injuries	7	8.5	*
Total	104	100.0	27.10

*Indicates not enough cases to determine an accurate rate.

Overview and Summary

Leading Causes of Injury Hospitalization

Leading Causes of Injury Hospitalization Delaware, 2002-05, Ages 0-19			
Manner of injury/poisoning	Number	Percent	Rate
Falls	637	25.1	71.7
Motor vehicle traffic	626	24.7	70.5
Poisoning	295	11.7	33.2
Struck by, against	217	8.6	24.4
Other specified and classifiable	138	5.4	15.5
Transport, other	97	3.8	10.9
All Other Injuries	523	20.7	58.9
Total	2,533	100.0	285.2

Leading Causes of Injury Hospitalization New Castle, 2002-05, Ages 0-19			
Manner of injury/poisoning	Number	Percent	Rate
Falls	437	27.4	77.1
Motor vehicle traffic	363	22.7	64.0
Poisoning	168	10.5	29.6
Struck by, against	137	8.6	24.2
Other specified and classifiable	88	5.5	15.5
Cut/pierce	67	4.2	11.8
All Other Injuries	336	21.1	59.3
Total	1,596	100.0	281.6

Injury hospitalizations decreased among children over the time periods examined. From 1996-1999, 2,595 Delaware children were injured and hospitalized, representing a rate of 326.4 per 100,000. While there were fewer hospitalizations from 2002-2005, the decrease is most apparent in the more recent rate of 285.1 cases per 100,000.

New Castle County's injury hospitalization rate dropped from 333.3 to 281.6 per 100,000. Kent County's rate also decreased from 364.4 to 315.3 per 100,000. However, Sussex County saw an increase in child injury hospitalization rate from 260.5 to 267.5 per 100,000, up from 361 cases to 427.

Leading Causes of Injury Hospitalization Kent, 2002-05, Ages 0-19			
Manner of injury/poisoning	Number	Percent	Rate
Motor vehicle traffic	148	29.0	91.5
Falls	107	21.0	66.1
Poisoning	70	13.7	43.3
Struck by, against	33	6.5	20.4
Other specified and classifiable	27	5.3	16.7
Transport, other	24	4.7	14.8
All Other Injuries	101	19.8	62.4
Total	510	100.0	315.3

Leading Causes of Injury Hospitalization Sussex, 2002-05, Ages 0-19			
Manner of injury/poisoning	Number	Percent	Rate
Motor vehicle traffic	115	26.9	72.0
Falls	93	21.8	58.3
Poisoning	57	13.4	35.7
Struck by, against	47	11.0	29.4
Transport, other	24	5.6	15.0
Other specified and classifiable	23	5.4	14.4
All Other Injuries	68	15.9	42.6
Total	427	100.0	267.5

Falls were the cause for most hospitalizations of children due to injury, both statewide and in New Castle County, but took a back seat to motor vehicle traffic injuries in Kent and Sussex counties. This represented an increase since 1996-1999, when motor vehicle traffic injuries were the leading cause of injury hospitalization both statewide (at 703 cases) and in each county. While Delaware's child motor vehicle traffic hospitalizations have decreased with time, falls increased, from 532 to 637 statewide.

Injury hospitalization rate is lowest in Sussex County and highest in Kent County.

Overview and Summary

Deaths by Intent

Unintentional

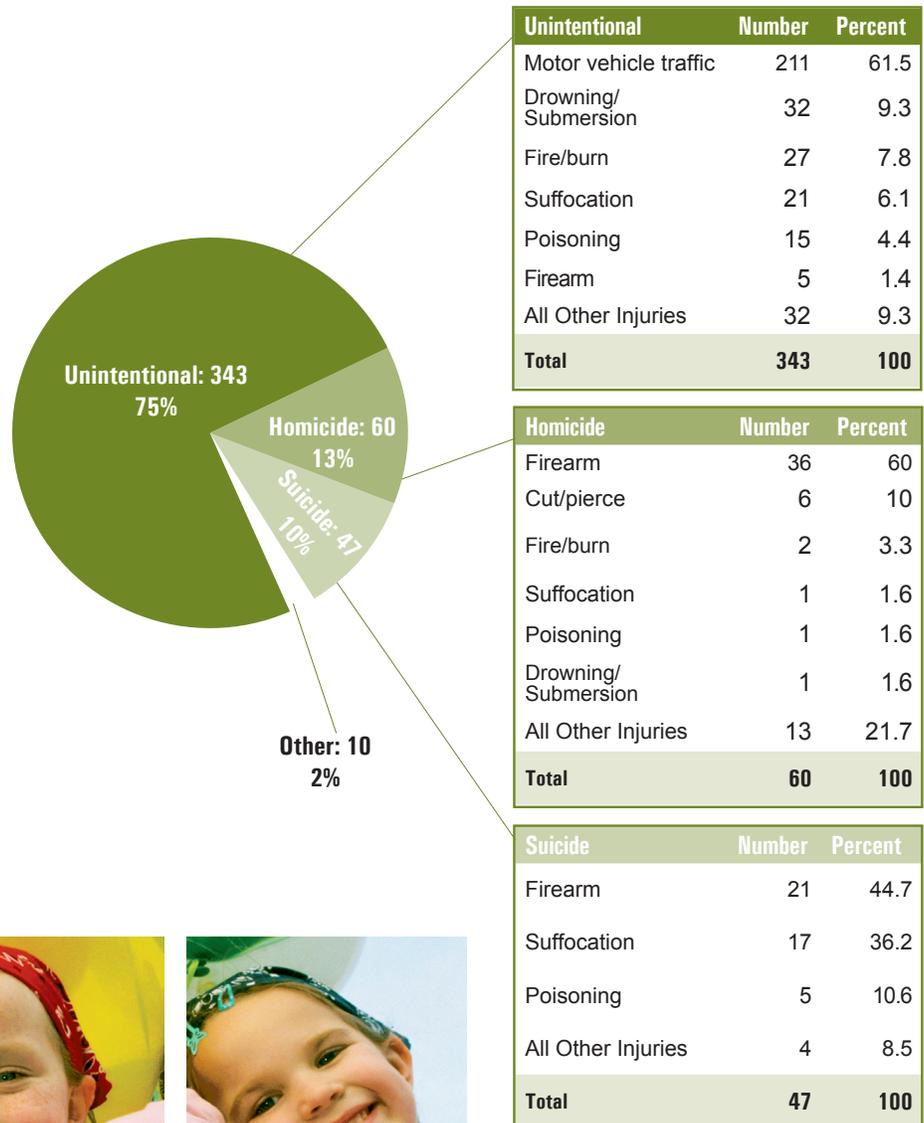
Unintentional injuries – what are often referred to as “accidents” – make up 75 percent of Delaware’s child injury deaths. Most of these deaths are the result of motor vehicle traffic incidents. These trends are nearly identical to the previous 1979-1998 injury analysis.

Intentional

Intentional injuries are typically categorized as either homicide or suicide. Firearms were the leading mechanism of injury in both categories. These findings continue to support the position of the Safe Kids Worldwide, American Academy of Pediatrics and the National PTA that gun safety is a child health issue. According to a CDC study in 1997, the overall rate of firearm-related deaths for US children under age 15 is nearly 12 times greater than that found for 25 other industrialized countries. In addition, the rate of firearm-related homicide is nearly 16 times higher than that in all the other countries combined.

Deaths by Intent

Delaware, 1996-2005, Ages 0-19, Total 460

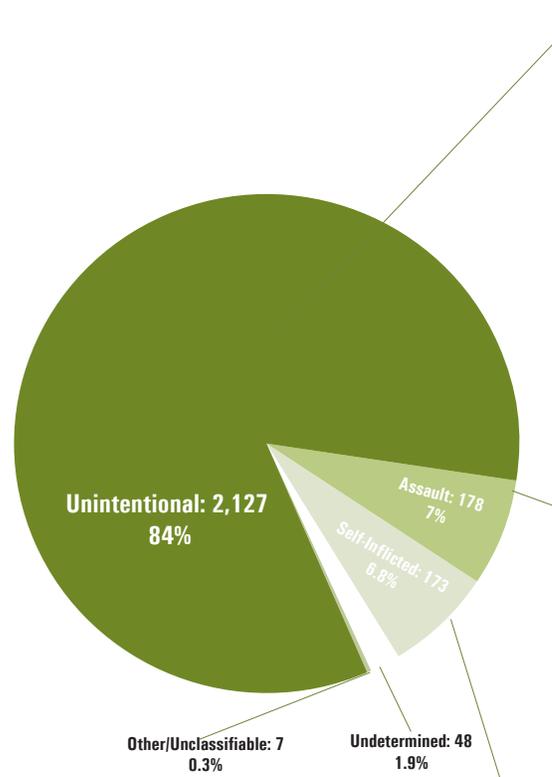


Overview and Summary

Hospitalization by Intent

Hospitalizations by Intent

Delaware, 2002-05, Ages 0-19, Total 2,533



Unintentional	Number	Percent
Falls	634	29.8
Motor vehicle traffic	623	29.3
Struck by, against	158	7.4
Poisoning	116	5.5
Other specified and classifiable	116	5.5
Transport, other	97	4.6
All Other Injuries	383	17.9
Total	2,127	100.0

More than three-quarters of children's injury hospitalizations occur unintentionally. This remained consistent over time, with 2,124 pediatric patients from 1996-1999 (81.8 percent) and 2,127 from 2002-2005 (85.84 percent). Assaults decreased from 197 cases (7.6 percent) to 178 cases (7.18 percent). Assaults were divided proportionately among several injury types from 1996-1999 and from 2002-2005.

Assault	Number	Percent
Struck by, against	59	33.1
Firearm	42	23.6
Cut/pierce	30	16.9
Other specified and classifiable	21	11.8
Unspecified	16	9.0
Other specified, not elsewhere classifiable	8	4.5
All Other Injuries	2	1.1
Total	178	100.0

Intentionally self-inflicted injury hospitalizations decreased from 240 cases to 178. Poisoning decreased from 96.3 percent of these hospitalizations to 92.5 percent over the two time periods.

Intentionally Self-Inflicted	Number	Percent
Poisoning	160	92.5
Cut/pierce	5	2.9
Motor vehicle/traffic	2	1.2
Firearm	2	1.2
Suffocation	2	1.2
Falls	1	0.5
All Other Injuries	1	0.5
Total	173	100.0



Overview and Summary

Cost of Injury Hospitalizations

Injury-related admissions for 2002-2005 resulted in nearly \$32 million in total hospital charges. This is a significant increase since 1996-1999 when the total was \$19 million. Hospital charges do not correlate with the prevalence of the injury. For example, while motor vehicle injuries accounted for 25 percent of all hospitalizations, the charges for motor vehicle injuries made up nearly 41 percent of total injury charges. Conversely, poisoning accounted for 12 percent of all discharges and but nearly 6 percent of all charges.

The highest average hospital charge was more than \$32,045 for adverse effects. The second highest charge was for injuries from machinery, which cost \$28,826 on average. Firearm injuries had the third highest average charge at \$22,270. Motor vehicle and fall injuries accounted for 58 percent of all injury charges.

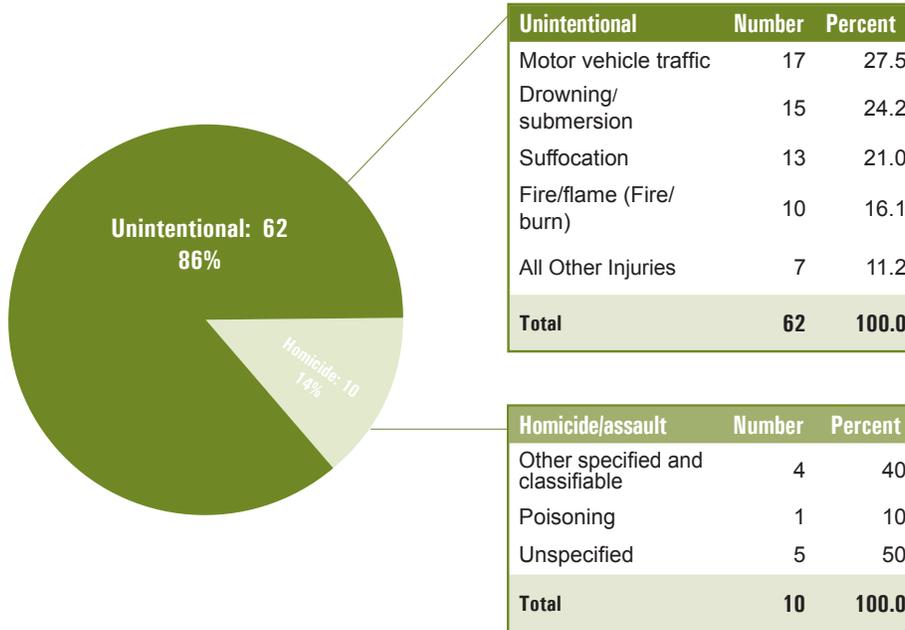
Manner of injury/poisoning	Number	Percent of Total Discharges	Total Costs	Average Costs per Discharge	Percent of Total Costs
Fall	637	25.15	\$5,519,956.87	\$8,665.55	17.3
Motor vehicle traffic	626	24.71	\$13,085,329.46	\$20,903.08	41.1
Poisoning	295	11.65	\$1,844,455.59	\$6,252.39	5.8
Struck by, against	217	8.57	\$1,862,608.02	\$8,583.45	5.8
Other specified and classifiable	138	5.45	\$1,514,175.09	\$10,972.28	4.8
Transport, other	97	3.83	\$1,142,843.87	\$11,781.90	3.6
Cut/pierce	89	3.51	\$853,652.80	\$9,591.60	2.7
Unspecified	79	3.12	\$954,261.81	\$12,079.26	3.0
Pedal cyclist, other	74	2.92	\$692,057.27	\$9,352.13	2.2
Firearm	71	2.80	\$1,581,185.01	\$22,270.21	5.0
Suffocation	45	1.78	\$662,902.65	\$14,731.17	2.0
Overexertion	44	1.74	\$491,919.90	\$11,180.00	1.5
Natural/environment	42	1.66	\$407,283.83	\$9,697.23	1.3
Fire/burn	19	0.75	\$89,451.61	\$4,707.98	0.3
Drowning/submersion	17	0.67	\$261,721.02	\$15,395.35	0.8
Other specified, not elsewhere classifiable	16	0.63	\$293,188.90	\$18,324.31	0.9
Machinery	10	0.39	\$288,262.25	\$28,826.23	0.9
Pedestrian, Other	10	0.39	\$113,470.40	\$11,347.04	0.4
Adverse effects	4	0.16	\$128,181.85	\$32,045.46	0.4
All other categories	3	0.12	\$53,478.40	\$17,826.13	0.2
Unclassifiable	0	0	0	\$0	0
Total	2,533	100.0	\$31,840,386.60	\$12,570.23	100.0

Age Specific Analysis

Children Ages 0 to 4

Deaths from Injuries

Delaware, 1996-2005, Ages 0-4, Total 72



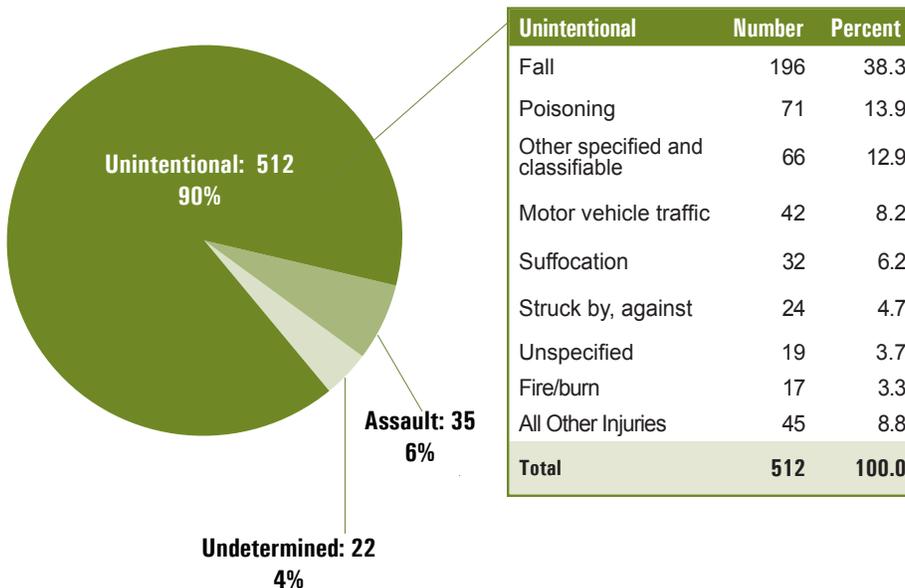
Unintentional deaths to preschool children increased from 71 percent from 1979-1998 to 86 percent from 1996-2005. This occurred in tandem with a decrease in homicides from 24.4 percent of deaths in this group to 14 percent. Motor vehicle deaths made up 27.5 percent of unintentional deaths in both time periods. While fire-related deaths decreased from 32.5 percent to 16.1 percent, drowning and submersion deaths increased from 16.6 to 24.2 percent.

Hospitalizations

Comparing 1996-1999 and 2002-2005 the proportion of unintentional injury and assault hospitalizations among infants and toddlers remained consistent.

Hospitalizations from Injuries

Delaware, 2002-05, Ages 0-4, Total 569



From 1996-1999, 559 preschool children in Delaware were hospitalized for injuries, compared to 569 hospitalizations for the four years from 2002-2005. Falls and poisonings remained the top two types of injuries for both periods. The number of poisonings went from 123 to 71, a 42 percent decrease in poisonings. Further examination may be warranted.

The number of fall hospitalizations went from 161 in 1996-1999 to 196 in 2002-2005, a 22 percent increase.

Age Specific Analysis

Children Ages 5 to 9

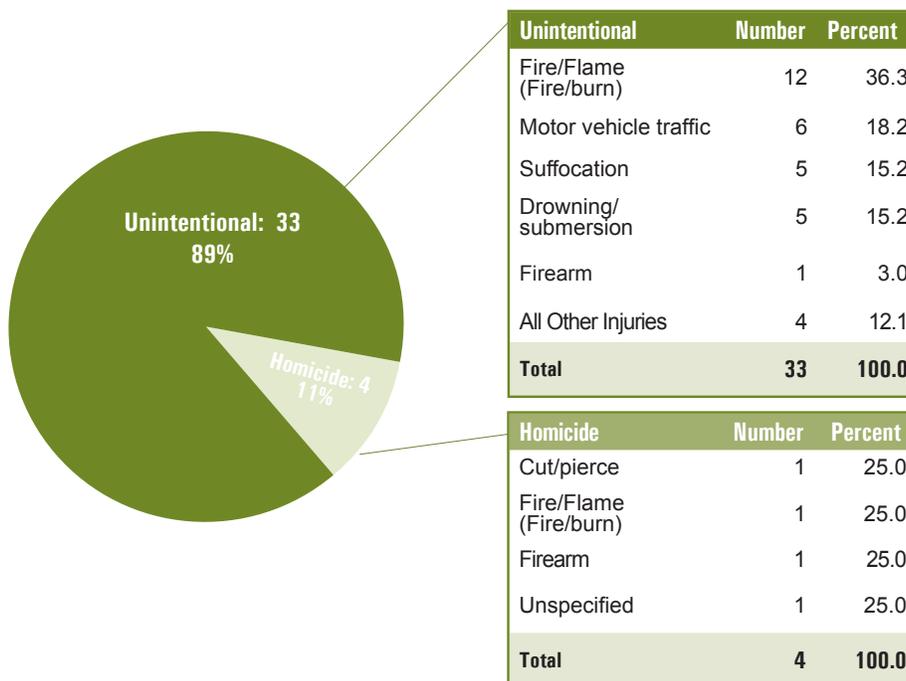
Deaths

Similar to infants and toddlers, 89 percent of injury deaths in children ages 5-9 were unintentional, with 11 percent attributed to homicide. These percentages are similar to those from the 1979-1998 data, which included ten homicides, one suicide and a single death attributed to "other."

The leading types of injuries included in unintentional deaths have reversed between the two data sets. Deaths due to fire, burns and smoke inhalation were most common in the recent years analyzed, with motor vehicle traffic the second most common. Motor vehicle deaths were the leading cause from 1979-1998 with burn deaths ranking second.

Deaths from Injuries

Delaware, 1996-2005, Ages 5-9, Total 37

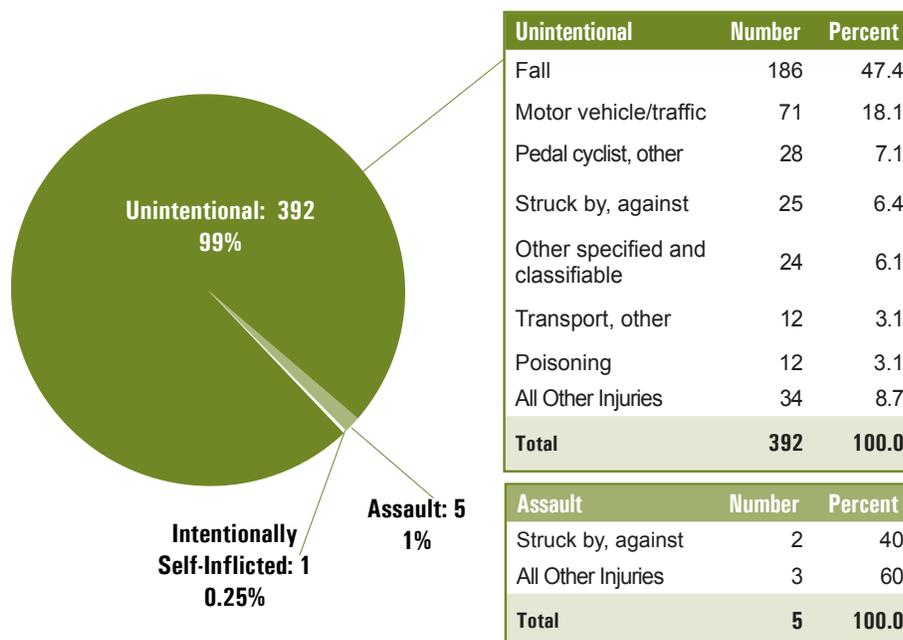


Hospitalizations

Nearly all injury hospitalizations for this age group remain unintentional, indicating a stable trend with data from 1996-1999 which also showed similar levels of assault and self-inflicted injury hospitalizations. The prevalence of each injury type was also similar across the two time periods reviewed.

Hospitalizations from Injuries

Delaware, 2002-05, Ages 5-9, Total 398

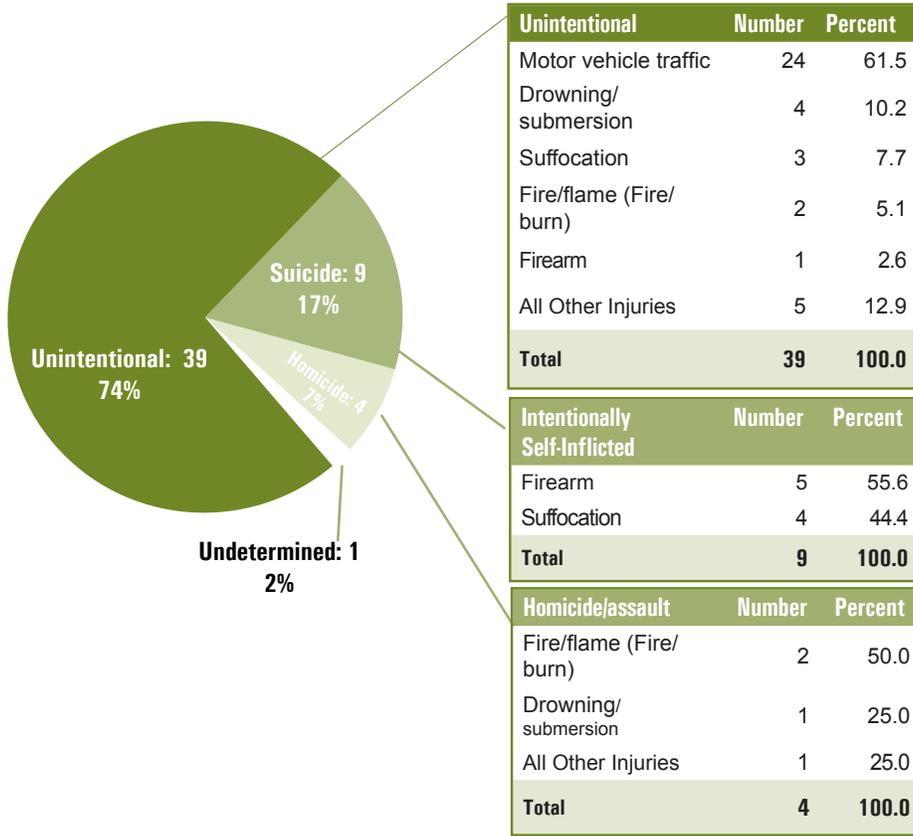


Age Specific Analysis

Children Ages 10 to 14

Deaths from Injuries

Delaware, 1996-2005, Ages 10-14, Total 53



Deaths

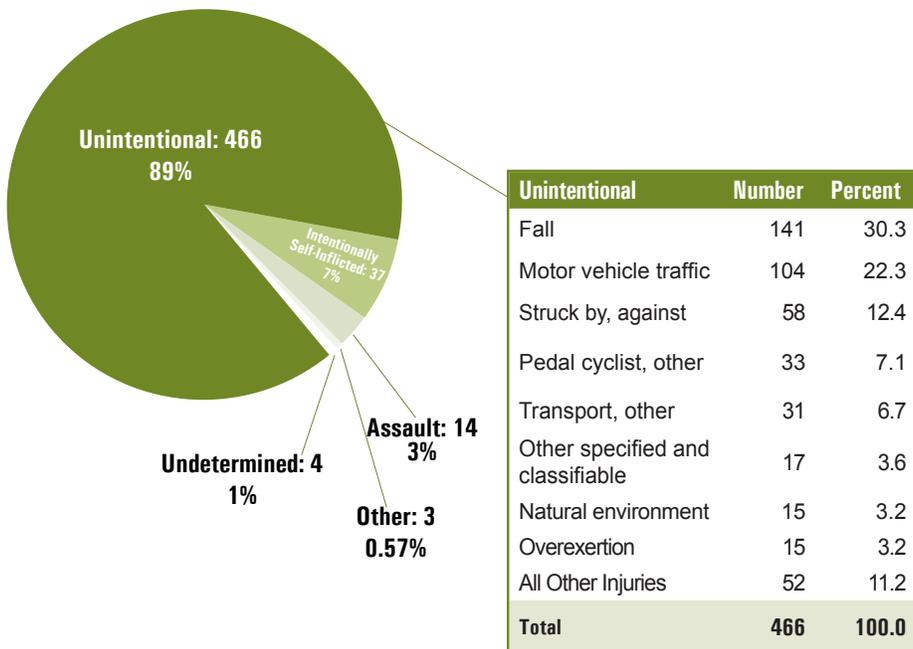
There were nine suicides reported in the 10-14 age group from 1996-2005. There were 16 reported in the previous 20 year period, 1976-1998. The prevalence of each injury type remained similar across the two time periods reviewed.

Hospitalizations

From 2002-2005, 466 unintentional injury hospitalizations occurred, and 454 were recorded from 1996-1999. The breakdown of these injury hospitalizations by intent remained very similar across the two periods reviewed, with the ranking of injury types so similar as to sometimes vary by only two or three cases. Poisoning continued to make up more than 90 percent of self-inflicted injury hospitalizations in both periods, but the number of cases declined from 66 self-poisonings to 35.

Hospitalizations from Injuries

Delaware, 2002-05, Ages 10-14, Total 524



Assaults continue to make up 3 percent of hospitalizations.

Intentionally Self-Inflicted		
	Number	Percent
Poisoning	35	94.6
All Other Injuries	2	5.4
Total	37	100.0

Age Specific Analysis

Children Ages 15 to 19

Deaths

Homicide deaths increase dramatically from the 10-14 year old group to 15-19 year old group. In 10-14 year olds there were four homicide deaths compared to 42 homicide deaths in the 15-19 year old group. Data presented compares to the 533 teen injury deaths that occurred from 1979-1998, 9.4 percent were homicide, with 15.6 percent attributed to suicide and 72.4 percent unintentional.

While motor vehicle traffic, poisoning and drowning/submersion injuries remained the three most common causes of unintentional deaths for both time periods, firearm deaths decreased in rank and number. Although still the number one injury killer of teens, motor vehicle traffic deaths dropped from 83 percent of unintentional deaths to 78 percent following the introduction of graduated driver's licensing.

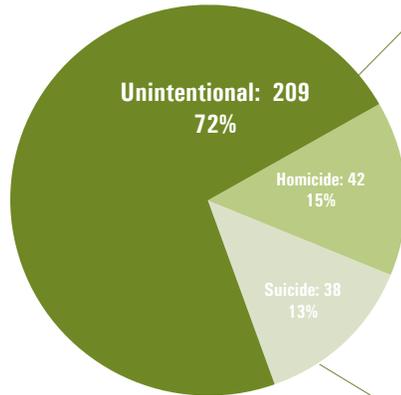
Hospitalizations

The breakdown of 15-19 year old injury hospitalizations by intent and injury type remains similar to that seen from 1996-1999, when 1,110 cases were reviewed.

The large majority of injury hospitalizations are due to motor vehicle crashes. There are almost four times the number of motor vehicle injuries compared to fall injuries. The number of self-inflicted poisonings rose sharply from 35 cases in the 10-14 group to 124 cases in the 15-19 group.

Deaths from Injuries

Delaware, 1996-2005, Ages 15-19, Total 289



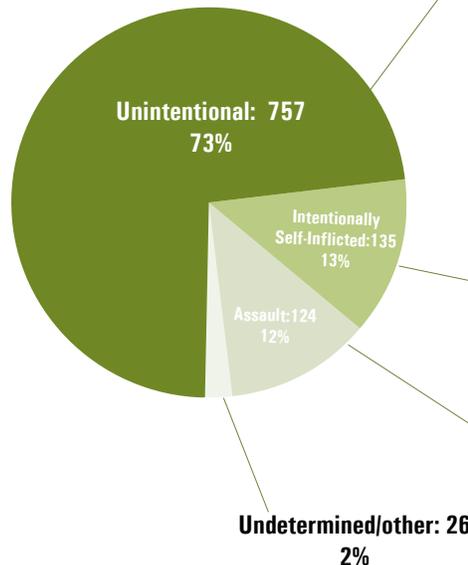
Unintentional	Number	Percent
Motor vehicle traffic	164	78.5
Poisoning	12	5.8
Drowning/submersion	8	3.8
Falls	3	1.4
Fire/Flame (Fire/burn)	3	1.4
Firearm	3	1.4
All Other injuries	16	7.7
Total	209	100.0

Homicide	Number	Percent
Firearm	33	78.6
Cut/pierce	5	11.9
All Other/injuries	4	9.5
Total	42	100.0

Suicide	Number	Percent
Firearm	16	42.1
Suffocation	13	34.2
All Other/injuries	9	23.7
Total	38	100.0

Hospitalizations from Injuries

Delaware, 2002-05, Ages 15-19, Total 1,042



Unintentional	Number	Percent
Motor vehicle/traffic	406	53.6
Falls	111	14.7
Struck by, against	51	6.7
Transport, other	48	6.4
Poisoning	25	3.3
Cut/pierce	23	3.0
Overexertion	20	2.6
All Other Injuries	73	9.7
Total	757	100.0

Intentionally Self-Inflicted	Number	Percent
Poisoning	124	91.9
All Other Injuries	11	8.1
Total	135	100.0

Assault	Number	Percent
Struck by, against	46	37.1
All Other Injuries	78	62.9
Total	124	100.0

Selected Causes of Injury



All of the hospital charges discussed in the following section refer to all manners of injury and combined unintentional and intentional injuries.



Selected Causes of Injury

Unintentional Motor Vehicle Injury

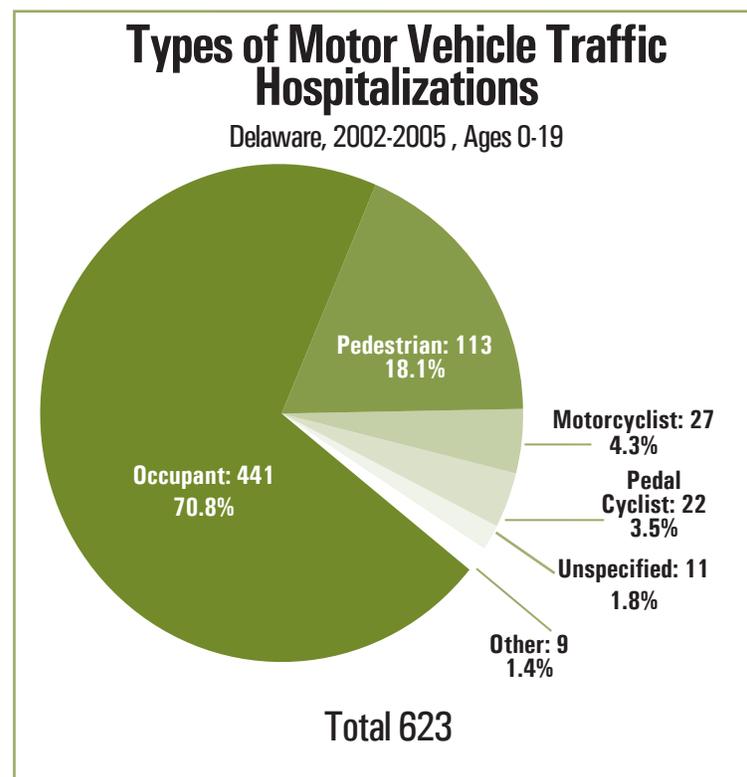
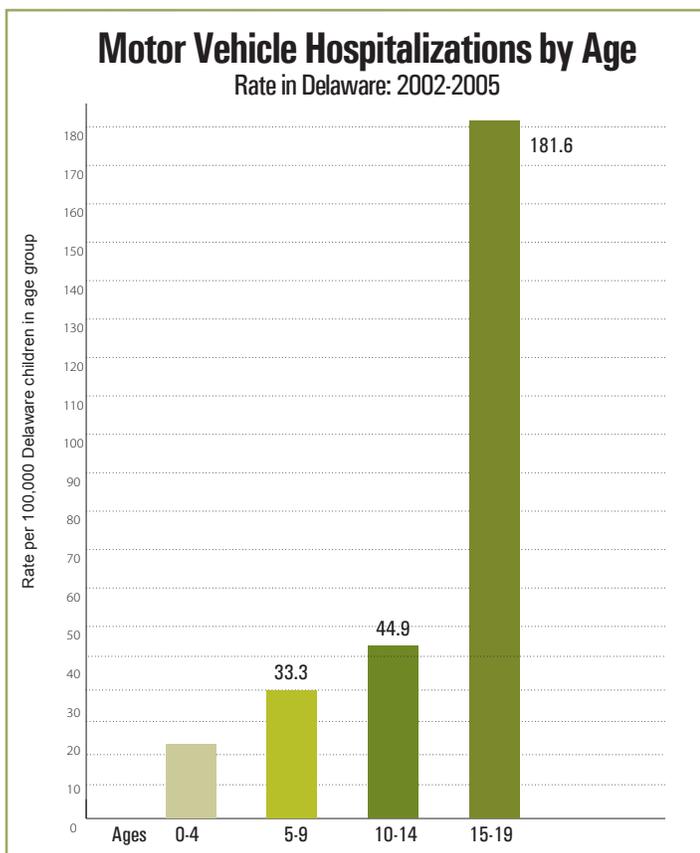
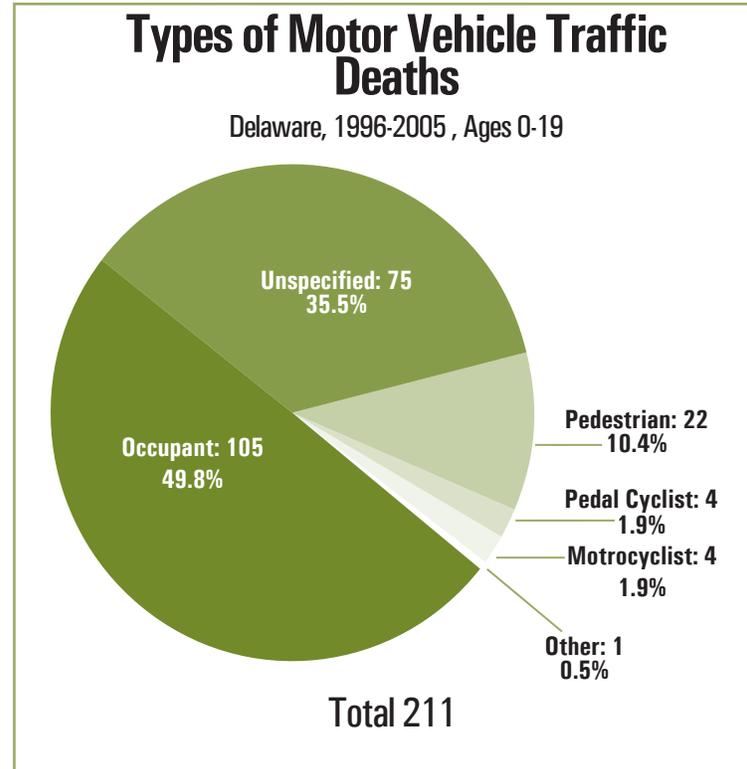
Motor vehicle injuries take the greatest number of children's lives. The motor vehicle death rate decreased from 12.5 per 100,000 from 1979-1999 to 9.7. From 1996-2005, 211 motor vehicle deaths occurred when the child was an occupant of the vehicle.

Motor vehicle deaths are being analyzed in greater detail through the *Crash Outcome Data Evaluation System (CODES)* in Delaware. This system links state police crash data with EMS run reports and hospital discharge data to provide greater detail about motor vehicle crashes in Delaware.

This information can also help determine what prevention methods and awareness raising would be most effective in reducing these deaths.

Among motor vehicle deaths and injury hospitalizations in both time periods, boys are involved almost twice as often as girls and white children die more frequently than black children in crashes.

Motor vehicle injuries accrued \$13,085,329 in total hospital charges from 2002-2005, an average of \$20,903 per discharge.



Selected Causes of Injury

Unintentional Motor Vehicle Injury

Motor Vehicle Deaths
by Sex and Race 1996-2005, Ages 0-19

Sex	Number	Percent	Rate
Male	133	63.0	11.99
Female	78	37.0	7.31
Total	211	100.0	9.70

Race	Number	Percent	Rate
White	173	82.0	11.27
Black	34	16.1	6.11
Other/ unknown	4	1.9	*
Total	211	100.0	9.70

Motor Vehicle Hospitalizations
by Sex and Race 2002-05, Ages 0-19

Sex	Number	Percent	Rate
Male	410	65.8	90.6
Female	213	34.2	48.9
Total	623	100.0	70.1

Race	Number	Percent	Rate
White	385	61.8	62.0
Black	164	26.3	70.1
Other/ unknown	74	11.9	*
Total	623	100.0	70.1

**Indicates not enough cases to determine an accurate rate.*

- Motor Vehicle Injury Prevention**
- Be a role model safe behavior by always buckling up in a motor vehicle.
 - Teach children through age 12 to always ride buckled and in the back seat.
 - Teach parents, caregivers and children the proper placement of seat belts.
 - Teach parents and caregivers proper child safety seat installation.
 - Ensure that low-income families have access to child safety seats.
 - Teach parents and caregivers that infants riding in cars are safest if properly restrained in regulation infant safety seats in the backseat, facing toward the back.
 - Teach parents and caregivers that air bags are designed for average sized adults and they can cause serious harm, even death, to children under 12 and smaller passengers.
 - Support and enforce the graduated licensing law in Delaware for new teen drivers.
 - Increase the number of police, EMS personnel, educators, child care providers, physicians, nurses, and car dealership personnel trained in child passenger safety.



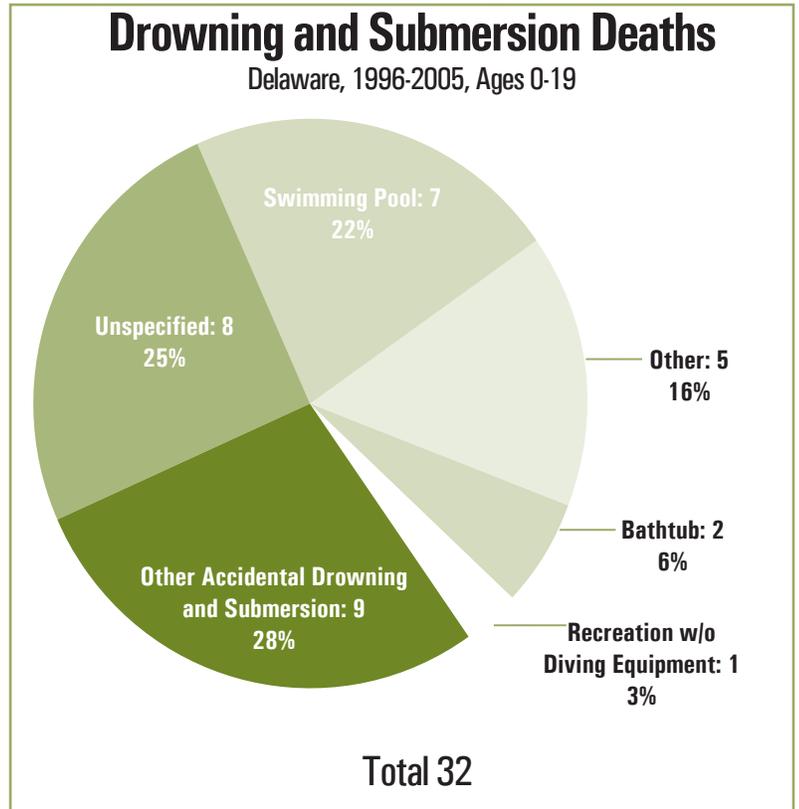
Selected Causes of Injury

Unintentional Drowning and Submersion

Drowning and submersion caused 7.7 percent of Delaware's injury fatalities from 1996-2005 with 32 deaths. It was the second leading cause of injury death for preschoolers and children ages 10-14. Statewide hospital charges due to drowning and submersion totaled \$261,721 with an average charge of \$15,395. Swimming pools were the setting for 22 percent of the fatalities. However, for a quarter of the drowning and submersion deaths, information on the setting of the injury was unspecified, an increase from 14.3 percent from 1979-1998. Improved death coding by health professionals can help clarify the factors involved in these fatalities and can help determine what prevention methods and awareness raising would be most effective in reducing these deaths.

There were 17 drowning hospitalizations in children 0-19 from 2002-2005. This speaks to the fatality of drowning and submersion injury in children.

Boys made up 80 percent of the fatalities and 64.7 percent of the hospitalizations.



Selected Causes of Injury

Unintentional Drowning and Submersion

Drowning and Submersion Deaths
by Sex and Race 1996-2005, Ages 0-19

Sex	Number	Percent	Rate
Male	25	78.1	2.25
Female	7	21.9	*
Total	32	100.0	1.47

Race	Number	Percent	Rate
White	18	56.3	1.17
Black	14	43.7	*
Other	0	0.0	0
Total	32	100.0	1.47

Drowning and Submersion Hospitalizations
by Sex and Race 2002-05, Ages 0-19

Sex	Number	Percent	Rate
Male	11	64.7	*
Female	6	35.3	*
Total	17	100.0	

Race	Number	Percent	Rate
White	9	52.9	*
Black	6	35.3	*
Unknown	2	11.8	*
Total	17	100.0	*

*Indicates not enough cases to determine an accurate rate.

- Drowning and Submersion Injury Prevention**
- Teach parents and caregivers to never allow children to play near pools, hot tubs or any areas with standing water without adult supervision.
 - Teach adults to always watch swimming children, giving them their undivided attention. Without reading, eating or talking on the phone. If the adult needs to leave, make sure there is another adult to take their place.
 - Give parents and caregivers information on how to obtain swimming lessons for children.
 - Teach children to never dive into water less than nine feet deep.
 - Give parents and caregivers access to resource materials and training on water watcher programs.
 - Enforce laws requiring that fences completely encircle pools at all times. Pool gates must be self-latching and kept locked.
 - Give parents and caregivers information on the importance of pool alarms.
 - Distribute information on the importance of proper drain coverage in all pools and hot tubs.
 - Install fences around canals and drainage ditches in populated areas.
 - Train educators and health care providers to teach drowning prevention and integrate drowning prevention into school curricula.
 - Enforce regulations requiring personal flotation devices for children on boats.



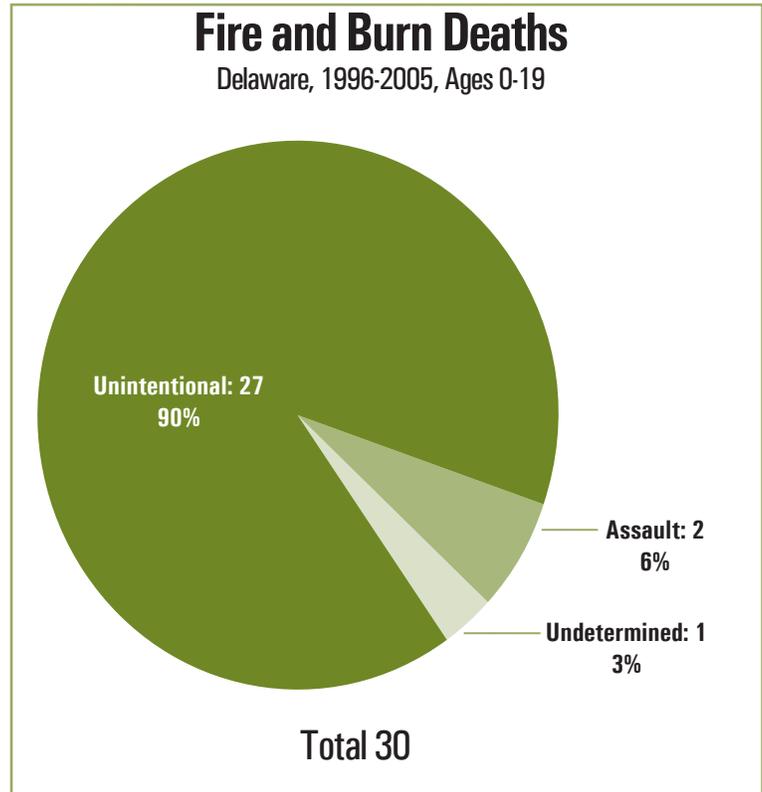
Selected Causes of Injury

Fire and Burn Injury

Fire and burn injuries were the second leading category of unintentional injury deaths among Delaware's children from 1996-2005 and 1979-1998. At 36.3 percent, unintentional fire-related deaths were the leading cause of unintentional injury death for children ages 5-9. These injuries were also among the top five leading causes for every age group examined. Previously, fire injuries were most prevalent among children ages 0-4. However, fire and burn injuries do not have a similarly high position among causes of hospitalizations from 2002-2005. This may be due to the fact that many of Delaware burn injuries are hospitalized at designated burn centers in other states.

Geographically, fire and burn deaths are the second leading category of child injury deaths in Sussex County, causing 12.3 percent of fatalities, compared with 5.5 percent for New Castle County and 2.4 percent in Kent (see page 8). While the percentage decreased in northern Delaware, Sussex County's percentage increased from 10.1 percent in 1979-1998.

From 2002-2005, the average charges for a child hospitalized with a fire injury was \$4,707.98, a decrease from \$5,239 in 1996-1999.



Selected Causes of Injury

Unintentional Fire and Burns

Fire and Burn Deaths by Sex and Race 1996-2005, Ages 0-19			
Sex	Number	Percent	Rate
Male	16	59	*
Female	11	41	*
Total	27	100.0	1.38
Race	Number	Percent	Rate
White	9	33.3	*
Black	15	55.6	*
Other	3	11.1	*
Total	27	100.0	1.38

Fire and Burn Hospitalizations by Sex and Race 2002-05, Ages 0-19			
Sex	Number	Percent	Rate
Male	11	61.1	*
Female	7	38.9	*
Total	18	100.0	*
Race	Number	Percent	Rate
White	11	61.1	*
Black	4	22.2	*
Other	3	16.7	*
Total	18	100.0	*

*Indicates not enough cases to determine an accurate rate.

- ### Fire and Burn Injury Prevention
- Promote fire and burn prevention education for special at-risk populations.
 - Never leave children to play unsupervised.
 - Stress the importance of smoke detectors in the home and promote smoke detector giveaway programs in communities.
 - Give parents and caregivers information to teach children what to do during a fire.
 - Increase the usage of home sprinkler systems by promoting their efficiency, cost effectiveness and reliability.
 - Promote the use of home safety kits that include outlet covers.
 - Integrate fire and burn prevention activities into school curricula for all children.
 - Install anti-scald devices in all homes.
 - Keep hot water heater set at a temperature of 120 degrees or less.
 - Teach parents and caregivers to never allow children to play around stoves or grills.
 - Teach parents and caregivers fire and burn prevention in the home, especially in the kitchen.
 - Teach families to develop and practice fire escape plans in the home and in frequent gathering places.



Selected Causes of Injury

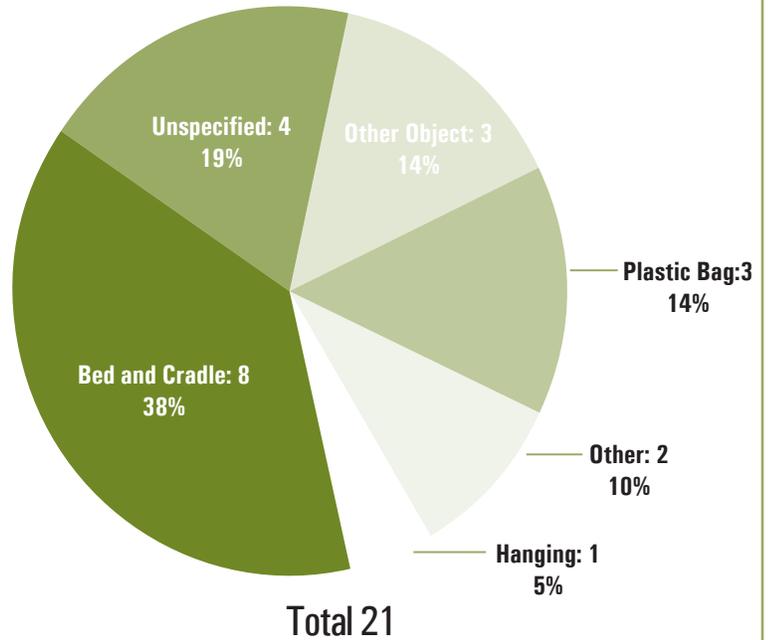
Unintentional Choking, Strangulation and Suffocation

Suffocation, which includes choking and strangulation, caused 8.7 percent of pediatric injury fatalities in Delaware and was the third leading cause of death among children ages 0-14. Hospitalizations due to suffocation totaled \$662,902 with an average of \$14,731 per discharge. Suffocation caused 6.3 percent of all injury hospitalizations for children under age 4. Of the 21 fatalities, eight occurred related to bedding or cradle, three involved plastic bags and at least three involved objects rather than food.

Suffocation fatalities and hospitalizations are roughly divided in half between boys and girls. Deaths occurred almost two times more often in whites than in blacks.

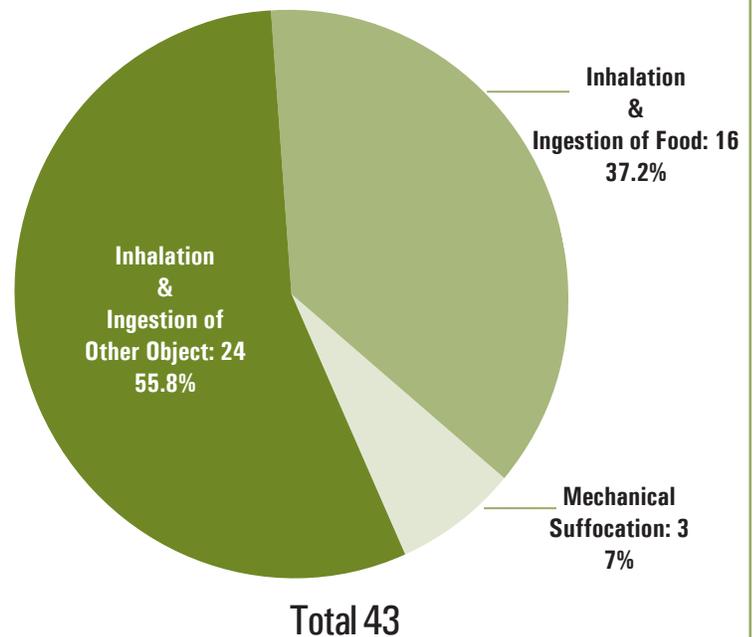
Choking, Strangulation and Suffocation Deaths

Delaware, 1996-2005, Ages 0-19



Choking, Strangulation and Suffocation Hospitalizations

Delaware, 2002-2005, Ages 0-19



Selected Causes of Injury

Unintentional Choking, Strangulation and Suffocation

Suffocation Deaths
by Sex and Race 1996-2005, Ages 0-19

Sex	Number	Percent	Rate
Male	9	42.9	*
Female	12	57.1	*
Total	21	100.0	1.84

Race	Number	Percent	Rate
White	14	66.7	*
Black	7	33.3	*
Other	0	0.0	
Total	21	100.0	1.84

Suffocation Hospitalizations
by Sex and Race 2002-05, Ages 0-19

Sex	Number	Percent	Rate
Male	24	55.8	5.3
Female	19	44.2	*
Total	43	100.0	4.8

Race	Number	Percent	Rate
White	18	41.9	*
Black	11	25.6	*
Other/ unknown	14	32.6	*
Total	43	100.0	4.8

**Indicates not enough cases to determine an accurate rate.*

- Choking, Strangulation and Suffocation Prevention**
- Never leave young children unsupervised.
 - Educate all parents and caregivers about choking risks.
 - Promote the use of mylar toy balloons instead of latex toy balloons.
 - Eliminate drawstrings from children’s clothes.
 - Educate parents and caregivers regarding the dangers of window cords and make safety adjustments to those products.
 - Integrate choking, strangulation and suffocation prevention into school curricula for all children.
 - Give all parents and caregivers proper food preparation information for children such as cutting food into small pieces.
 - Check children’s toys for small parts. Any toy or toy part that will fit through a paper towel or toilet paper tube should be kept away from children under three years old.
 - Teach parents and caregivers to never allow their young children to play with toys that have removable parts or strings.
 - Give parents and caregivers home safety information, such as keeping plastic bags, blind and curtain cords out of reach of young children.
 - Give parents and caregivers information for first aid and CPR courses in their area.



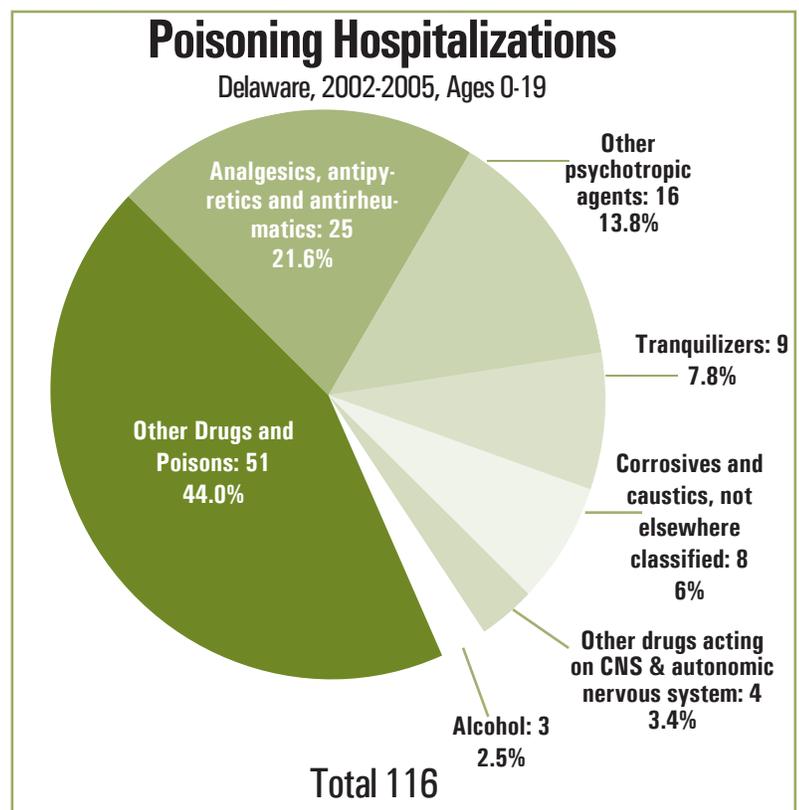
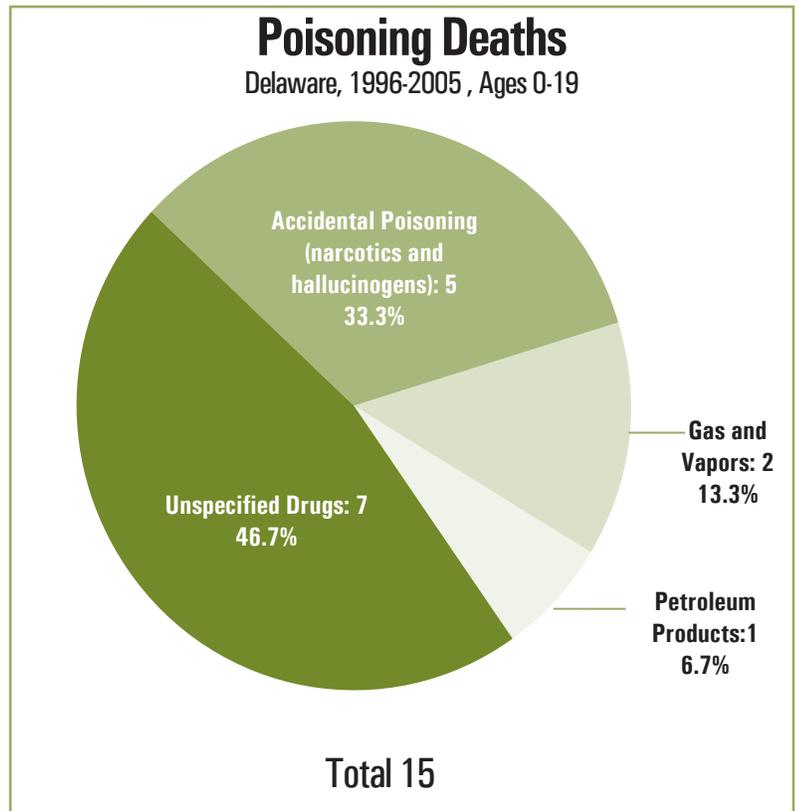
Selected Causes of Injury

Unintentional Poisoning

Medications are the most common and deadly poisons of children. Prescription medications and other drugs were involved in more than half of fatal poisonings. More than 80 percent of Delaware's poisoning hospitalizations were related to medications such as narcotics, hallucinogens and other unspecified drugs.

Because young children can mistake pills for candy, even one misplaced tablet of an adult's prescription can lead to a serious poisoning. Poisoning is the second leading cause of injury hospitalizations among children 0-4 years old, who are at an age when they tend to put everything in their mouths. Poisoning drops to the seventh leading cause of hospitalizations for children ages 5 -9 and drops to 11th on the list of injury hospitalizations and deaths for ages 10-14. Poisoning reappears as a leading cause of unintentional injury hospitalizations and deaths among 15-19 year olds. This is possibly due to experimentation with recreational substance abuse or misuse of products as adolescents begin to take on greater responsibilities for themselves and their families. However, additional examination is needed.

Gas and vapors were involved in 10 percent of deaths. This can include carbon monoxide poisoning, which can occur when fuel-burning heating devices malfunction in homes.



Selected Causes of Injury

Unintentional Poisoning

Poisoning Deaths			
by Sex and Race 1996-2005, Ages 0-19			
Sex	Number	Percent	Rate
Male	11	73.3	*
Female	4	26.7	*
Total	15	100.0	*
Race	Number	Percent	Rate
White	15	100.0	*
Black	0	0	0
Other	0	0	0
Total	15	100.0	*

Poisoning Hospitalizations			
by Sex and Race 2002-05, Ages 0-19			
Sex	Number	Percent	Rate
Male	76	65.5	16.8
Female	40	34.5	9.2
Total	116	100.0	13.1
Race	Number	Percent	Rate
White	74	63.8	11.9
Black	26	22.4	11.1
Other/ unknown	16	13.8	*
Total	116	100.0	13.1

**Indicates not enough cases to determine an accurate rate.*

Poisoning Injury Prevention

- Keep all poisons out of reach of children.
- Store potentially harmful medications and chemicals in locked cabinets or boxes.
- Use child-safe caps and purchase products with child-safe packaging. Educate parents and caregivers not to take medications in the presence of young children as they often imitate the actions of adults.
- Promote annual home heating system inspections and the use of carbon monoxide detectors in the home.
- Integrate poisoning prevention in school curricula.
- Teach all parents and caregivers to have the poison control center number, 1-800-222-1222, programmed into, or next to, all telephones and to use it immediately if they suspect anyone has been exposed to a toxic substance.
- Advocate against recreational drug use.



Selected Causes of Injury

Unintentional Firearm Injury

Five firearm injury deaths occurred among children ages 0-19 in Delaware from 1996-2005. This compares to 13 deaths in the 20-year period from 1979-1998. Firearms remain a leading cause of intentional injury death. Unintentional firearm injury deaths remain a public health problem and there is evidence of effective interventions to prevent these deaths. In a 2001 study by Jackman, Farah, Kellerman, and Simon observation of 8-12 year-old boys revealed that they couldn't behave responsibly around a firearm, even when the boys had been taught firearm safety. Engineering measures such as safe storage seem to have the most promise for reducing firearm injuries and deaths to children. Many people are not willing to take guns out of the home, so it is reasonable to believe that gun locks, lock boxes and gun safes would reduce the number of unintentional firearm injuries.

Overall, from 2002 to 2005 there were 19 hospitalizations to children due to unintentional firearm injuries. This is a 24 percent decrease in the number of firearm-related hospitalizations from 1996-1999, when 25 occurred. Males had more than 3.7 times the number of unintentional firearm injury hospitalizations compared to females. Black children had two times more firearm injury hospitalizations than white children.

The aggregate total charges of firearm injury hospitalization (intentional and unintentional) for 2002-2005 was \$1,581,185 and the average charge per discharge for each admission was \$22,270.



Selected Causes of Injury

Unintentional Firearm Injury

Unintentional Firearm Deaths
by Sex and Race 1996-2005, Ages 0-19

Sex	Number	Percent	Rate
Male	4	80.0	*
Female	1	20.0	*
Total	5	100.0	*

Race	Number	Percent	Rate
White	2	40.0	*
Black	3	60.0	*
Other	0	0.0	0
Total	5	100.0	*

Firearm Hospitalizations
by Sex and Race 2002-05, Ages 0-19

Sex	Number	Percent	Rate
Male	15	78.9	*
Female	4	21.1	*
Total	19	100.0	*

Race	Number	Percent	Rate
White	6	31.6	*
Black	12	63.1	*
Other	1	5.3	*
Total	19	100.0	*

*Indicates not enough cases to determine an accurate rate.

- Unintentional Firearm Injury Prevention**
- Eliminate children’s access to guns. Implement community-based firearm safety programs.
 - Teach children not to touch guns, and to tell a responsible adult if they see a gun.
 - Do not encourage children to play with toy guns.
 - If guns are in the home, teach owners to lock guns and ammunition in separate places. Store the keys to the gun chest or closet in a locked box.
 - Encourage primary health care providers to assess if guns are in the home and to promote safe gun storage.
 - Teach parents to ask friends’ parents if guns are in the home and verify that they are stored properly.
 - Increase the use of gun locks.
 - Ask police for advice on safe storage of guns.



Selected Causes of Injury

Unintentional Bicycle/Pedal Cycle Injury

Fortunately, there are no bicycle injury deaths to report for Delaware children ages 0-19 from 1996-2005. This compares to 27 deaths in the 20-year period from 1979-1998. The lower number of child deaths from bicycle injury is thought to be related to a bicycle helmet law that took effect April 1, 1996. This important child safety legislation required children less than 16 years of age to wear a properly fitted bicycle helmet or their guardian could be fined \$25 for the first offense and \$50 for each subsequent offense.

Overall, from 2002-2005 there were 74 hospitalizations to children due to bicycle injuries. This is a 37 percent decrease in the number of bicycle-related hospitalizations from the last period reported (118 were

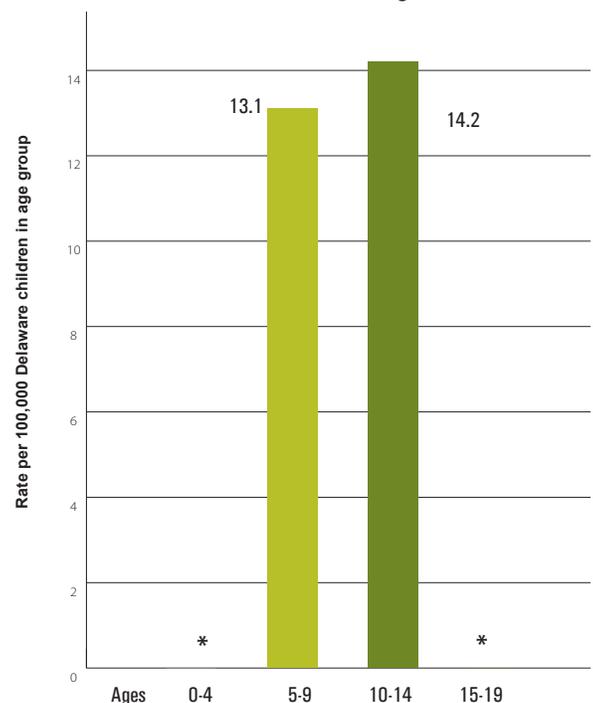
reported from 1996-1999). Males had more than two times the number of bicycle injury hospitalizations than females. White children had 3.8 times more bicycle injury hospitalizations than black children.

The rate for bicycle injury hospitalizations for children ages 5-9 from 1996-1999 was 14.8 hospitalizations per 100,000. The 2002-2005 rate decreased to 13.1 hospitalizations per 100,000. The rate also decreased from 17.8 to 14.2 per 100,000 in the 10-14 age group.

The total charge for bicycle hospitalization injuries for 2002-2005 was \$692,057 with the average charge per discharge for each admission was \$9,352.



**Unintentional Bicycle/Pedal Injury
Hospital Discharge Rates by Age**
Delaware, 2002-2005 , Ages 0-19



*Indicates not enough cases to determine an accurate rate.

Selected Causes of Injury

Unintentional Bicycle/Pedal Cycle Injury

Bicycle/Pedal Cycle Hospitalizations by Sex and Race 2002-2005, Ages 0-19			
Sex	Number	Percent	Rate
Male	53	71.6	11.7
Female	21	28.4	4.8
Total	74	100.0	8.3
Race	Number	Percent	Rate
White	49	66.2	7.9
Black	13	17.6	*
Other/ unknown	12	16.2	*
Total	74	100.0	8.3

*Indicates not enough cases to determine an accurate rate.

Bicycle/Pedal Cycle Injury Prevention

- Promote the use of helmets and other safety gear.
- Never allow young children to ride their bicycles without adult supervision.
- Integrate bicycle safety into school curricula. Promote bicycle training programs and bicycle safety programs in the community.
- Teach adults and children how to properly wear bicycle helmets and safety gear.
- Teach children to wear bright colors so they can be seen by motorists when riding their bicycles. No baggy clothing.
- Encourage adults to serve as role models by wearing safety equipment when riding bicycles.
- Support and enforce current law that all children must wear helmets or parents will be fined.
- Change the perception that bicycles are toys and promote safety standards as with motor vehicles.
- Make communities more bicycle friendly, install lighting, bicycle trails and paths.
- Design roads so that bicycle paths are separated.
- Lower motor vehicle speed limits in residential communities.
- Increase awareness of the bicycle helmet bank program for children in low-income families through the State Office of Highway Safety and free helmet giveaway programs throughout the state.



Selected Causes of Injury

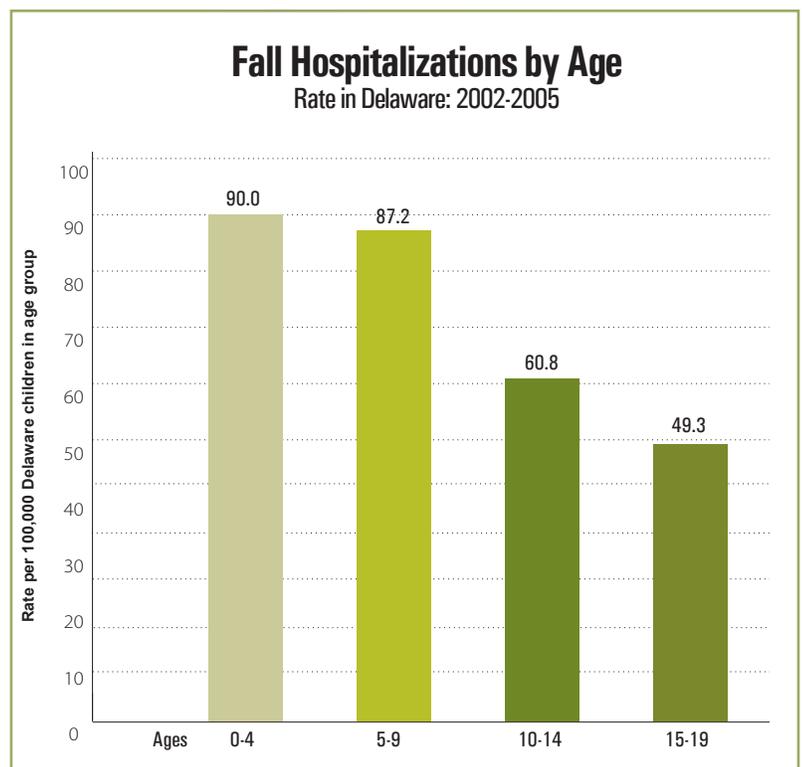
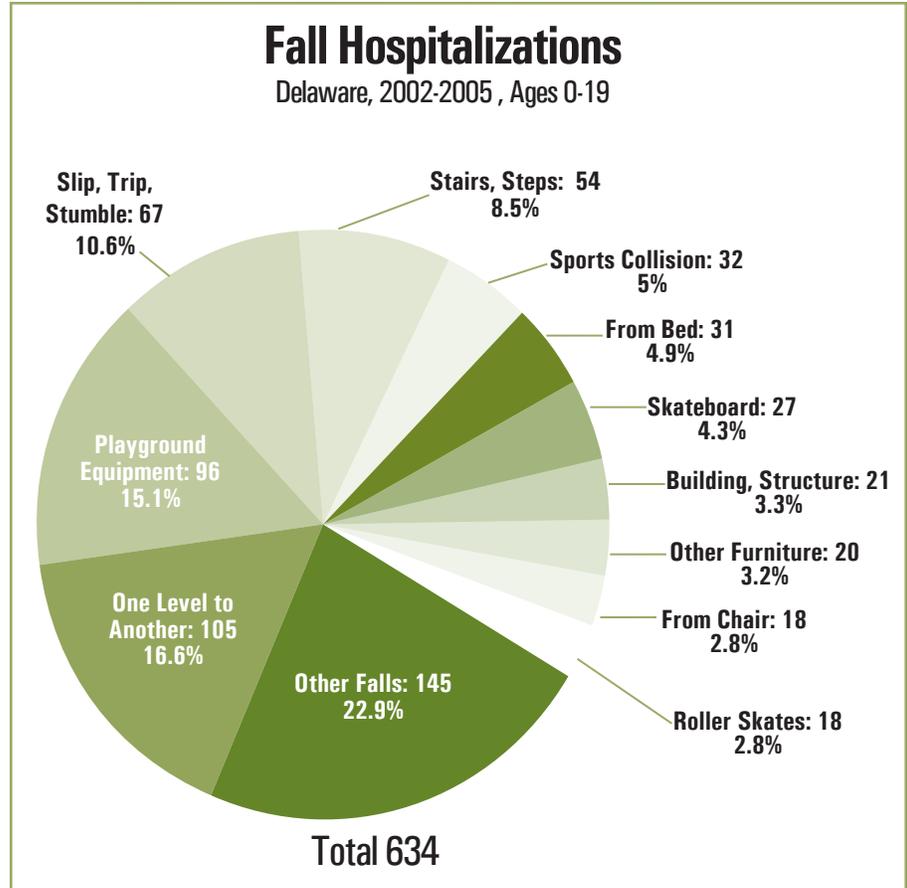
Unintentional Fall Injury

Overall, from 2002 to 2005 there were 634 hospitalizations to children due to fall injuries. This is a 20 percent increase from the last period reported (530 were reported from 1996-1999). There was a 28 percent increase in the number of fall hospitalizations from playgrounds alone (from 75 falls to 96). The other category of falls also increased significantly from 78 hospitalizations to 145, an 86 percent increase. The most significant decrease in fall injury hospitalizations was related to roller skates, skateboards, non-motorized scooters, skis and snowboards, which went from 111 hospitalizations in 1996-1999 to 61 hospitalizations (45% less) in 2002-2005.

Males had fall injury hospitalizations almost two times more frequently than females. White children had 3.2 times more fall injury hospitalizations than black children.

The 1996-1999 rate for fall injury hospitalizations for children ages 0-4 was 79.7 per 100,000. The 2002-2005 rate increased to 90.0 hospitalizations per 100,000, representing a 13 percent increase in rate of hospitalization due to fall injury. The rate also increased by 15.9 per 100,000 in the 5-9 age group. Conversely, the rate decreased by 12.5 per 100,000 in the 10-14 age group and was rose to 7.6 in the 15-19 year-old group.

Overall the number of deaths from fall injuries in children was four for the ten-year period (1996-2005).



Selected Causes of Injury

Unintentional Fall Injury

Fall Hospitalizations by Sex and Race 2002-2005, Ages 0-19			
Sex	Number	Percent	Rate
Male	411	64.8	90.8
Female	223	35.2	51.2
Total	634	100.0	71.4
Race	Number	Percent	Rate
White	391	61.7	62.9
Black	122	19.2	52.1
Other/ unknown	121	19.1	*
Total	634	100.0	71.4

**Indicates not enough cases to determine an accurate rate.*

- ### Fall Injury Prevention
- Educate parents and caregivers about fall hazards.
 - Young children should be supervised at all times.
 - Install locks on windows.
 - Install releasable window guards on second and higher story windows. All programs addressing use of window guards must consider fire safety a priority.
 - Discourage children from playing in areas that are hazardous, such as roofs and balconies.
 - Ensure that playgrounds are safe and inspected by a nationally certified playground inspector.
 - Ensure that children play on playground equipment that is appropriate for their size and age.
 - If playground equipment is at a private residence, assure that it is properly anchored and soft material is spread underneath.
 - Building codes must ensure that balconies, decks, porches, bleachers, and fire escapes have railings with vertical openings not greater than four inches apart.
 - Assure children wear proper safety equipment at all times while playing sports.
 - Promote community playground safety programs.
 - Integrate fall prevention into school curricula.



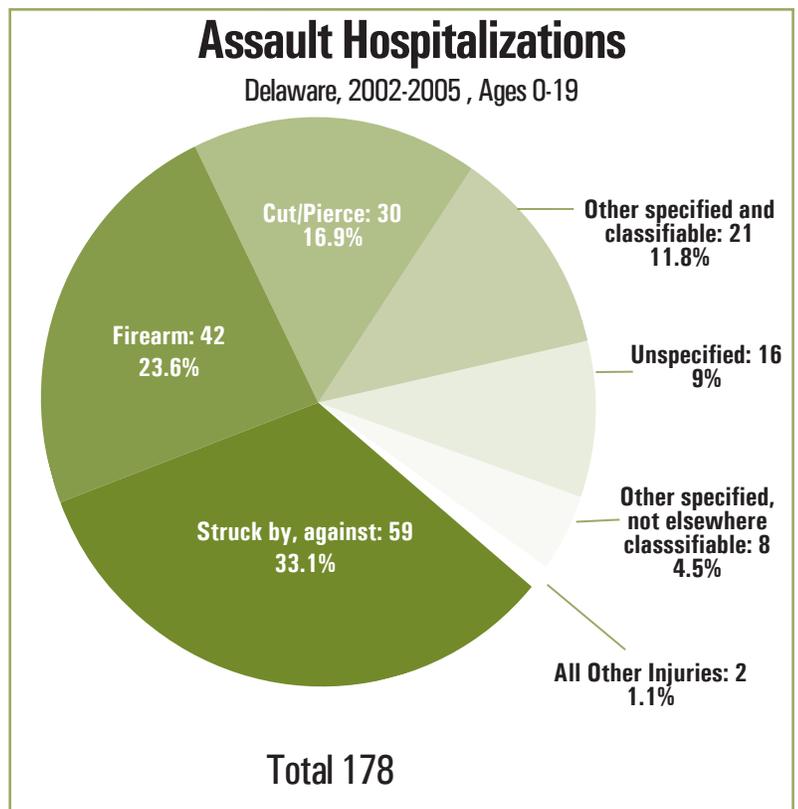
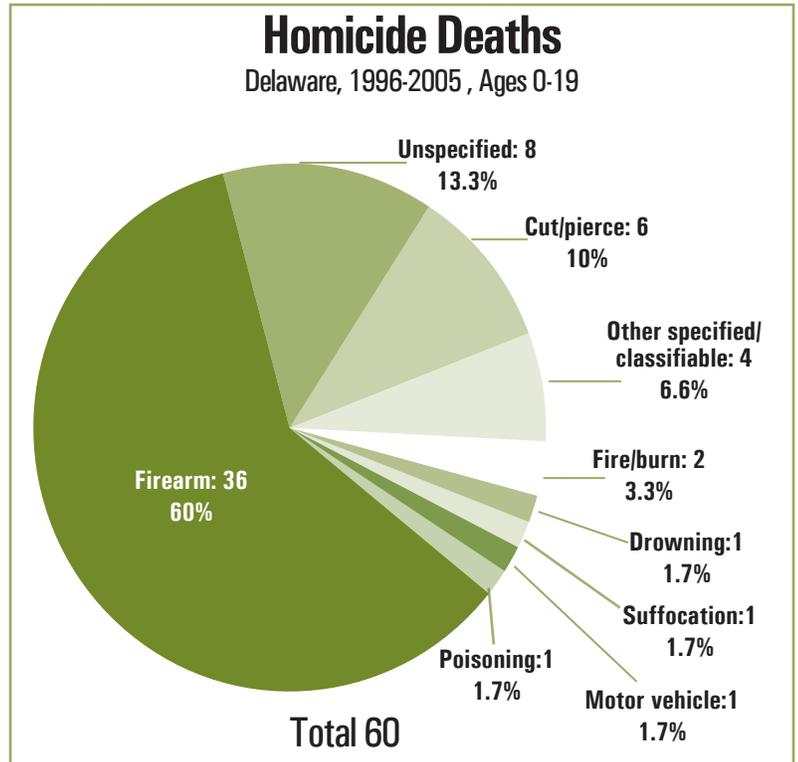
Selected Causes of Injury

Homicide and Assault

Firearms remain the most frequent mechanism of injury in child homicides. While firearm deaths made up 34.6 percent of homicides from 1979-1998, they were involved in 60 percent of the deaths from 1996-2005. Firearms were the most common mechanism of homicide (78.5 percent) for children ages 15-19. Homicides involving a cutting or piercing injury were 10 percent of the total, with the remaining portion divided among a wide variety of injury categories.

Most of the hospitalizations were due to being struck, firearms, or cutting injuries. These made up 73.6 percent of all hospitalization injuries. This is similar to 74.9 percent from 1996-1999.

The aggregate charges for all firearm hospitalizations among Delaware's children totaled \$1,581,185 with an average of \$22,270 per discharge for the 2002-2005 period. Whereas, in 1996-1999 hospital charge was significantly lower at \$948,034 and average discharge was \$11,286. The charges of admission for firearm injury hospitalization have roughly doubled within the last ten years.



Selected Causes of Injury

Homicide/Assault

Homicide Deaths			
by Sex and Race 1996-2005, Ages 0-19			
Sex	Number	Percent	Rate
Male	49	81.7	4.42
Female	11	18.3	*
Total	60	100.0	2.76
Race	Number	Percent	Rate
White	22	36.7	1.43
Black	38	63.3	6.83
Other	0	0.0	0
Total	60	100.0	2.76

Assault Hospitalizations			
by Sex and Race 2002-05, Ages 0-19			
Sex	Number	Percent	Rate
Male	143	80.3	31.6
Female	35	19.7	8.0
Total	178	100.0	20.0
Race	Number	Percent	Rate
White	63	35.4	10.1
Black	88	49.4	37.6
Other/ unknown	27	15.2	*
Total	178	100.0	20.0

*Indicates not enough cases to determine an accurate rate.

- ### Homicide and Assault Injury Prevention
- Increase parental involvement as role models for children. Educate parents and children regarding conflict resolution, problem-solving and effective communication.
 - Decrease exposure to violence at home and in the media.
 - Restrict youth access to guns.
 - Children should have responsible adult supervision at all times.
 - If internet access is allowed, parents should utilize parental control features. Promote internet safety programs in the community.
 - Educate parents, caregivers and students on bullying and gang violence.
 - Teach children to be aware of their surroundings at all times.
 - Teach children to report any suspicious behavior to a responsible adult.
 - Promote participation in healthy after-school programs.
 - Implement school-and-community based violence prevention programs.



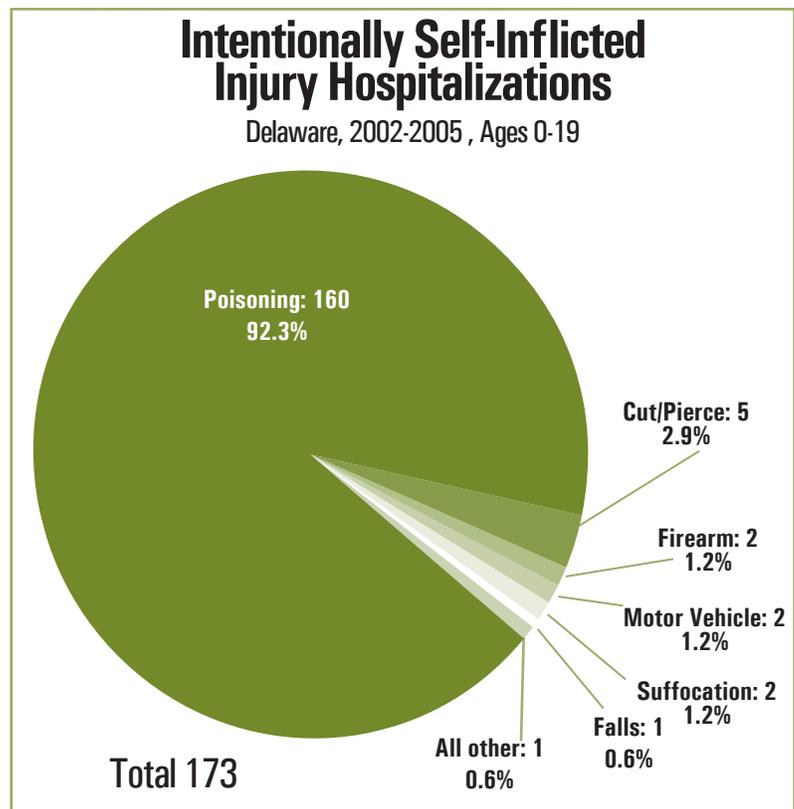
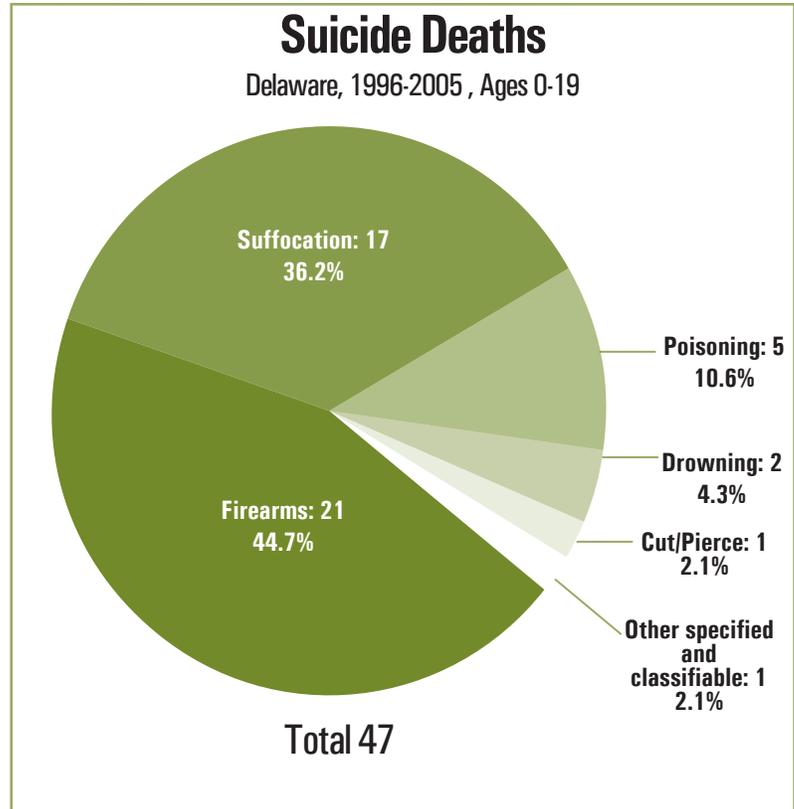
Selected Causes of Injury

Suicide and Intentionally Self-Inflicted Injury

From 1996-2005 suicide made up 10 percent of all pediatric injury deaths. Nearly half of all suicides involved firearms, similar to the trend from 1979-1998. Suffocation and poisoning suicides ranked second and third for 10-19 year olds during both time periods.

While 68.8 percent of self-inflicted injury hospitalizations occur among girls, 85.1 percent of suicides are among boys. The majority of these deaths and injuries occur in white children.

Poisoning comprised 93 percent of self-inflicted injury hospitalizations, similar to 1979-1998 when 97 percent were due to poisoning.



Selected Causes of Injury

Suicide and Intentionally Self-Inflicted Injury

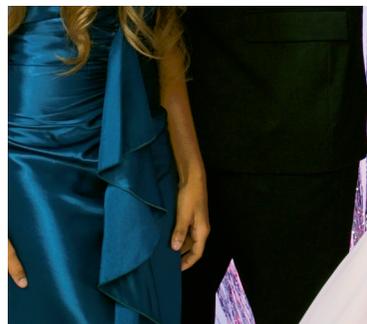
Suicide Deaths			
by Sex and Race 1996-2005, Ages 0-19			
Sex	Number	Percent	Rate
Male	40	85.1	3.61
Female	7	14.9	*
Total	47	100.0	2.16
Race	Number	Percent	Rate
White	38	80.9	2.48
Black	7	14.9	*
Other	2	4.3	0
Total	47	100.0	2.16

Self-Inflicted Injury Hospitalizations			
by Sex and Race 2002-05, Ages 0-19			
Sex	Number	Percent	Rate
Male	54	31.2	11.9
Female	119	68.8	27.3
Total	173	100.0	19.5
Race	Number	Percent	Rate
White	115	66.5	18.5
Black	36	20.8	15.4
Other/ unknown	22	12.7	*
Total	173	100.0	19.5

*Indicates not enough cases to determine an accurate rate.

Suicide and Self-Inflicted Injury Prevention

- Improve the identification and treatment of children with behavioral health problems.
- Educate health care providers, parents and school staff to identify children at risk and the signs of depression and suicidal tendency.
- Never leave children with suspicious behavior without adult supervision.
- Promote healthy children’s mental health programs in the community.
- Give parents, caregivers and children information on mental health resources in the community. Publicize suicide prevention resources in the community.
- Encourage involvement of teens with positive peer and adult role models.
- Increase youth involvement in structured after school programs, including team sports and other team activities.
- Restrict youth access to guns, drugs and alcohol.
- Build the self-esteem of children by teaching them decision making skills, conflict resolution and improving their communication skills.



Appendix



Appendix

Methodology

A. Sources of Data

Data for this report were compiled by the Delaware Health Statistics Center using data from death certificates and inpatient hospital discharges. Data reflect events involving Delaware residents only. Deaths or hospitalizations of non-residents are excluded.

Population data used to calculate rates were obtained from the Delaware Population Consortium (Delaware Population Projections, Version 2006).

B. Classification of Injuries and Poisonings

Injuries and poisonings were classified using a framework recommended by the National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (see E-code Matrix on page 41 for details). Categories are assigned using the ICD-9-CM E-code (code for external cause of injury and poisoning) for each event. Injuries and poisonings were classified along two dimensions, Mechanism/Cause (one of over two dozen categories and subcategories) and Manner/Intent (unintentional, intentionally self-inflicted, assault, undetermined, and other).

C. Completeness and Limitations of Data

Death data

Injury death data in this report were compiled from 1996-2005. A certificate is filed with the Office of Vital Statistics in the Division of Public Health for each death that occurs in the state (Delaware Code Title 16, Chapter 31). An exchange agreement with the other 49 states and the District of Columbia ensures that deaths to Delaware residents that occur in those jurisdictions are sent to Delaware for the purpose of compiling reports. As such, death data can be considered 100 percent complete. Data is compiled into an electronic database and analyzed by the Delaware Health Statistics Center.

Hospital discharge data

Injury hospitalization data in this report were compiled from 2002-2005 Delaware hospital discharge records of Delaware residents. As a result, out-of-state hospitalizations of Delaware residents are not captured in the data. Hospital discharge, refers to any discharge from a non-federal, short-stay, acute-care hospital in Delaware. These figures are expressed as numbers of discharges, not as unduplicated patients; as a result, a single patient with multiple hospitalizations can be counted more than once. Delaware hospital discharge data are based upon inpatient hospitalizations and do not include outpatient, clinic, or emergency department data.

Hospital discharges for injuries were identified by the presence of a primary diagnosis that fell within the STIPDA (State & Territorial Injury Prevention Directors Association) case definition. Once identified, the E-code, or external cause of injury code, was used to describe the intent and mechanism of injury. Approximately 10 percent of childhood injury hospitalizations did not have an accompanying E-code and were excluded from the analysis.

Appendix

E-code Matrix

Recommended framework of E-code groupings for presenting injury mortality and morbidity data

Mechanism/Cause	Intent of Injury/Poisoning				
	Unintentional	Intentionally Self-inflicted	Assault	Undetermined	Other ¹
Cut/pierce	E920.0-9	E956	E966	E986	E974
Drowning/submersion	E830.0-9, E832.0-9 E910.0-9	E954	E964	E984	
Fall	E880.0-E886.9, E888	E957.0-9	E968.1	E987.0-9	
Fire/burn ³	E890.0-E899, E924.0-9	E958.1, .2, .7	E961, E968.0, .3, E979.3	E988.1, .2, .7	
Fire/flare ³	E890.0-E899	E958.1	E968.0, E979.3	E988.1	
Hot object/substance	E924.0-9	E958.2, .7	E961, E968.3	E988.2, .7	
Firearm ³	E922.0-3, .8, .9	E955.0-4	E965.0-4, E979.4	E982.0-4	E970
Machinery	E919 (.0-9)				
Motor vehicle traffic ^{2,3}	E810-E819 (.0-9)	E958.5	E968.5		
Occupant	E810-E819 (.0, .1)				
Motorcyclist	E810-E819 (.2, .3)				
Pedal cyclist	E810-E819 (.6)				
Pedestrian	E810-E819 (.7)				
Unspecified	E810-E819 (.9)				
Pedal cyclist, other	E800-E807 (.3) E820-E825 (.6), E826.1, .9 E827-E829 (.1)				
Pedestrian, other	E800-807 (.2) E820-E825 (.7) E826-E829 (.0)				
Transport, other	E800-E807 (.0, .1, .8, .9) E820-E825 (.0-5, .8, .9) E826.2-8 E827-E829 (.2-9) E831.0-9, E833.0-E845.9	E958.6		E988.6	
Natural/environment	E900.0-E909, E928.0-2	E958.3		E988.3	
Bites/stings ³	E905.0-6, .9, E906.0-4, .5, .9				
Overexertion	E927				
Poisoning	E850.0-E869.9	E950.0-E952.9	E962.0-9, E979.6, .7	E980.0-E982.9	E972
Struck by, against	E916-E917.9		E960.0; E968.2		E973, E975
Suffocation	E911-E913.9	E953.0-9	E963	E983.0-9	
Other specified and classifiable ^{3,4}	E846-E848, E914-E915 E918, E921.0-9, E922.4, .5 E923.0-9, E925.0-E926.9 E928(.3-.5), E929.0-5	E955.5, .6, .7, .9 E958.0, .4	E960.1, E965.5-9 E967.0-9 E968.4, .6, .7 E979 (.0-2, .5, .8, .9)	E985.5, .6, .7 E988.0, .4	E971, E978, E990-E994, E996 E997.0-2
Other specified, not elsewhere classifiable	E928.8, E929.8	E958.8, E959	E968.8, E969, E999.1	E988.8, E989	E977, E995, E997.8 E998, E999.0
Unspecified	E887, E928.9, E929.9	E958.9	E968.9	E988.9	E976, E997.9
All Injury ³	E800-E869, E880-E929	E950-E959	E960-E969, E979 , E999.1	E980-E989	E970-E978, E990- E999.0
Adverse effects					E870-E879 E930.0-E949.9
Medical Care					E870-E879
Drugs					E930.0-E949.9
All external causes					E800-E999

Note: Codes in bold refer to morbidity only.
Source: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention

Appendix

Children's Injury Prevention Resources

National

The Children's Safety Network (CSN)
National Injury and Violence Resource Center
 Educational Development Center, Inc.
 55 Chapel Street
 Newton, MA 02458-1060
 Phone: 202-884-4927
 Web: www.ChildrenSafetyNetwork.org

Emergency Medical Services for Children
EMSC National Resource Center
 8737 Colesville Rd.
 Suite 400
 Silver Spring, MD 20910
 Phone: 202-476-4927
 Web: <http://bolivia.hrsa.gov/emsc>

Health Resources and Services Administration
 Maternal Child Health Bureau
 Parklawn Building Room 18-05
 5600 Fishers Lane, Rockville, MD 20857
 Web: www.hrsa.gov

Risk Watch
 NFPA, Public Education Division
 One Batterymarch Park
 Quincy, MA 02269-9101
 Phone: 617-984-7285
 Web: www.riskwatch.org

Partners for Child Passenger Safety
The Children's Hospital of Philadelphia
 34th Street and Civic Center Boulevard
 Philadelphia, Pa. 19104
 Main Number: 215-590-1000
www.chop.edu/carseat

National Highway Traffic Safety Administration
 NHTSA Headquarters
 1200 New Jersey Avenue, SE
 West Building
 Washington, DC 20059
 Phone: 202-366-5440
 Web: www.nhtsa.dot.gov

SAFE KIDS Worldwide
 1301 Pennsylvania Avenue, NW
 Suite 1000
 Washington, DC 20004
 Phone: 202-662-0600
 Web: www.safekids.org

US Consumer Product Safety Commission
 4330 East West Highway
 Bethesda, MD 20814
 Phone: 301-504-7923
 Web: www.cpsc.org

THINK FIRST Foundation
 29W120 Butterfield Road
 Suite 105
 Warrenville, IL 60555
 Phone: 800-THINK-56 (844-6556)
 Web: www.thinkfirst.org

The American Academy of Pediatrics (AAP)
 141 Northwest Point Boulevard
 Elk Grove Village, IL 60007-1098
 Phone: 847-434-4000
 Web: www.aap.org

American Professional Society on the Abuse of Children (APSAC)
 350 Poplar Avenue
 Elk Grove Village, IL 60007-1098
 Phone: 847-434-4000
 Web: www.aap.org

National Center on Shaken Baby Syndrome (NCSBS)
 2955 Harrison Blvd #102
 Ogden, UT 84403
 Phone: 888- 273-0071
www.dontshake.org

Farm Safety 4 Just Kids
 11304 Aurora Avenue
 Urbandale, IA 50322
 (800) 423-5437
www.fs4jk.org

The Annie E. Casey Foundation
 701 St. Paul Street
 Baltimore, MD 21202
 Phone: 410-547-6600
www.aecf.org

National Association of Children's Hospitals & Related Institutions (NACHRI)
 401 Wythe Street
 Alexandria, VA 22314
 Phone: 703/684-1355
www.childrenshospitals.net

Washington State Department of Health Injury and Violence Prevention Program
 P.O. Box 47832
 Olympia, WA 98504-7832
 Phone: (360)236-2828
www.doh.wa.gov/hsqa/emstrauma/injury

National Shooting Sport Foundation, Inc.
 11 Mile Hill Road
 Newtown, CT 06470
 Phone: (203) 426-1320
www.projectchildsafefoundation.org

Appendix

Children's Injury Prevention Resources

The State and Territorial Injury Prevention Director's Association

2200 Century Parkway, Suite 700
Atlanta, GA 30345
Phone: (770) 690-9000
www.stipda.org

National Program for Playground Safety University of Northern Iowa

Human Performance Center 103
Cedar Falls, IA 50614-0618
Phone: (800) 554-Play
www.playgroundsafety.org

Emergency Nurses Association Injury Prevention Institute (ENCARE)

915 Lee Street
Des Plaines, IL 60016-6569
Phone: (800) 900-9659
www.ena.org/ipinstitute

Local

Alfred I. duPont Hospital for Children

PO Box 269
1600 Rockland Road
Wilmington, DE 19899
Phone 302-651-5437
Web: www.nemours.org

Children's Fire Safety Foundation

P.O. Box 7767
Wilmington, DE 19803
Phone: (302) 479-9000
www.safetbear.org

Delaware Fire Marshal's Office

1537 Chestnut Grove Road
Dover, DE 19904-9610
Phone: (302) 739-5665
www.statefiremarshal.delaware.gov

Delaware Child Death, Near Death, and Stillbirth Commission

900 King Street, Suite 220
Wilmington, DE 19801
Phone: (302) 255-1760
<http://courts.delaware.gov/childdeath/index.htm>

Children & Families First

2005 Baynard Boulevard
Wilmington, Delaware 19802
Phone: 302-658-5177
www.cffde.org

Delaware State Fire School

1461 Chestnut Grove Rd
Dover, DE 19904
Phone: (302) 739-4773
<http://statefireschool.delaware.gov>

Delaware Office of Highway Safety

Community Relations Officer
PO Box 1321
Dover, DE 19904
Phone: (302) 744-2743
<http://ohs.delaware.gov>

Kent County Cooperative Extension

University of Delaware
69 Transportation Circle
Dover, DE 19901
Phone: (302) 697-4000
<http://ag.udel.edu/extension>

Emergency Medical Services for Children Blue Hen Corporate Center

Suite 4H
655 South Bay Rd.
Dover, DE 19901
Phone: (302) 744-5410
www.dhss.delaware.gov/dhss/dph/ems.html

Kids Count In Delaware

298K Graham Hall
University of Delaware
Newark, DE 19716-7350
Phone: (302) 831-4966
www.dekidscount.org

New Castle County Cooperative Extension

University of Delaware
910 S. Chapel Street
Newark, DE 19716-1303
Phone: (302) 831-4973
<http://ag.udel.edu/extension>

Poison Control Center

Children's Hospital of Philadelphia
3400 Civic Center Blvd
Philadelphia, PA 19104
Phone: 215-386-2100
Web: poisoncontrol.chop.edu

Sussex County Cooperative Extension

University of Delaware
16483 County Seat Highway
Georgetown, DE 19947
Phone: (302) 856-7303
<http://ag.udel.edu/extension>

YMCA of Delaware

120 North State Street
Dover, DE 19901
Phone: (302) 735-7530
<http://www.ymcade.org>

Space for resources was limited. Any omissions of agencies that serve as children's injury prevention resources are unintentional. Please contact the Office of EMS at 302-744-5400 if you would like to be listed as a resource in future publications.

Acknowledgements

References

Bergen, G., Chen, L.H., Warner, M. & Fingerhut, L.A. (2008). *Injury in the United States: 2007 Chartbook*. Hyattsville, MD: National Center for Health Statistics.

Bonnie, R.J., Fulco, C.E., & Liverman, C.T. (1999). *Reducing the Burden of Injury: Advancing Injury Prevention and Treatment*. Washington, DC: National Academy Press.

Christoffel, T., & Gallagher, S.S. (1999). *Injury Prevention and Public Health*. Gaithersburg, MD: Aspen Publishers, Inc.

Corso, P., Finkelstein, E., Miller, T., Fiebelkorn, I., & Zaloshnja, E. (2006). Incidence and lifetime costs of injuries in the United States. *Injury Prevention*, 12(4):212-8.

Doll, L.S., Bonzo, S.E., Mercy, J.A., & Sleet, D.A. (2007). *Handbook of Injury Prevention and Violence*. New York, NY: Springer.

Renzi, M. (2001). *Childhood Injury in Delaware*. Dover, DE: Division of Public Health.

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