

Vermont Facts, 2001-2005

Injury affects Vermonters in many forms and represents an important cause of morbidity and mortality. On average, there are nearly 350 injury deaths, more than 4,250 injury-related hospitalizations and 68,420 injury-related emergency department visits each year among Vermont residents. Unintentional injury was the fourth leading cause of death in Vermont in 2005 (it had been the fifth leading cause of death in the state since 1999). Only heart disease, cancer and chronic lower respiratory disease (COPD) accounted for more deaths in 2005. Suicide was the ninth leading cause of death for Vermonters in 2005.

Mortality: Motor vehicles, falls, poisoning, firearms, and suffocation are the highest ranking causes of injury-related death in Vermont. Vermont has a significantly higher rate of falls death than the U.S. as a whole – in fact, the Vermont average rate is more than one and half times that of the U.S. Mortality rates for motor vehicle-related injury and firearm injury are lower in Vermont than across the U.S. On average, twice as many Vermont males die from injury-related causes than Vermont women. Vermont’s elders (those 65 years of age and older) have the largest number of injury deaths, and falls are the leading cause of those deaths. One-quarter of Vermont’s injury deaths are self-inflicted injury.

Hospitalization: Falls are, by far, the leading cause of injury-related hospitalizations in Vermont. They are more than three and a half times more common than the next leading cause of injury-related hospitalization (motor vehicles). Overall, Vermont’s injury hospitalization rates are significantly lower than U.S. rates for many causes. Women are hospitalized more often than men for injury in Vermont. Injury-related hospitalizations increase with age – they are highest among Vermont’s seniors (65 years of age and older) and lowest among Vermonters younger than age 15. One in ten injury-related hospitalization is due to self-inflicted injury.

Emergency Department (ED) Visits: Falls are the leading cause of injury-related ED visits in Vermont. There are nearly twice as many ED visits due to falls than there are for the next leading cause (struck by an object). Other leading injury-related causes for ED visits are overexertion, cut or piercing and motor vehicle injury. Vermont has a statistically higher

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rate of injury-related ED visits overall and specifically for falls, overexertion, being cut or pierced and motor vehicles. Men make more ED visits due to injury-related incidents than do women. Vermonters between 25 and 44 years of age have the most injury-related ED visits. Most ED visits are due to unintentional injury (92%) and less than one percent are due to self-inflicted injury.

Vermont Injury Prevention Program

Nearly 350 Vermonters lose their lives to injuries each year, and thousands more suffer serious, sometimes permanent disabilities as a result of their injuries. It is often injury – not disease – that is the leading killer of children, adolescents, and young adults. The Injury Prevention program was established in 1999 with a grant from the Centers for Disease Control and Prevention (CDC). The Injury Prevention program functions to provide a coordinated response to injury prevention throughout the state. The Program's infrastructure is based on the State and Territorial Injury Prevention Directors Association's (STIPDA) Safe States five component public health approaches to injury prevention.

The Injury Prevention Coordinator facilitates the Vermont Injury Prevention Community Planning Group meeting that occurs quarterly to address issues relevant to injury prevention in Vermont, advise the program regarding program activities, promote integration and coordination of injury prevention-related activities, and to market/promote the VT Injury Prevention Plan (2001). The plan contains injury data, the identified priority areas, and recommended strategies for injury prevention.

The Vermont Injury and Violence Prevention Program develops and maintains programs designed to reduce injuries. The program has three program initiatives: Unintentional injuries, intentional injuries and the overall injury surveillance data on both types of injuries.

Whether the injuries are intended or accidental, most physical injuries can be prevented by identifying their causes and working towards reducing people's exposure to them.

The Impact of Injury on Vermont

Injury Deaths

Leading Causes of Injury-Related Death in Vermont, 2001-2005

- ❖ From 2001 to 2005, an average of 348 Vermonters died each year from injury, corresponding to an annual all-cause injury death rate of 56.4 per 100,000 Vermonters. This is similar to the U.S. rate, which is an average rate of 56.6 per 100,000 persons dying from injury each year.
- ❖ Motor vehicles are the leading cause of injury death for Vermonters. On average, motor vehicles cause 77 deaths each year (12.5 per 100,000 Vermonters). Falls are the second leading cause of injury death, accounting for an average of 70 each year (11.3 deaths per 100,000 Vermonters).
- ❖ The five leading causes of injury death are rounded out by poisonings (both accidental and intentional, 57 deaths per year), firearms (53 deaths per year) and suffocation (29 deaths per year).
- ❖ Vermont has a statistically higher average death rate from falls than the U.S. as a whole – 11.3 deaths per 100,000 per year in Vermont versus 6.3 deaths per 100,000 nationally. However, Vermont's average motor vehicle and firearms death rates are statistically lower than the national rates (12.5 versus 14.9 per 100,000 for motor vehicles, 8.6 versus 10.3 per 100,000 for firearms).

Table 1. Injury-Related Death Annual Averages, 2001 – 2005, Combined

	VT Number of Deaths	VT Rate per 100,000		U.S. Rate per 100,000
All Causes	348	56.4		56.6
Motor Vehicles	77	12.5	★	14.9
Falls	70	11.3	✕	6.3
Poisoning	57	9.2		9.7
Firearm	53	8.6	★	10.3
Suffocation	29	4.8		4.6

Source: U.S. WISQARS; Vermont Vital Statistics; rates presented are crude rates.

★ Means statistically lower than the U.S. rate; ✕ means statistically higher than the U.S. rate

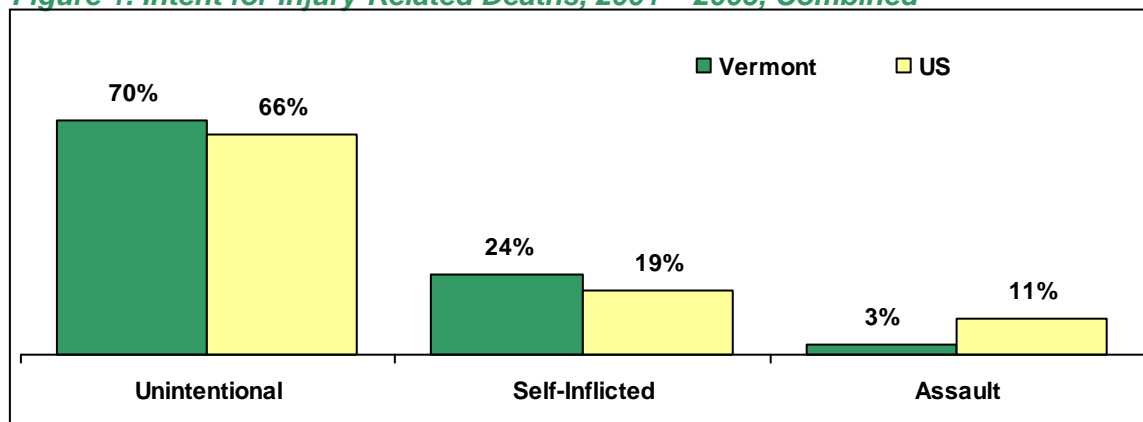
- ❖ On average, nearly twice as many Vermont men as women die from injury (228 men versus 120 women) each year. Injury fatalities among men are mostly due to motor vehicle injury or self-inflicted firearm injury (an average of 52 and 49 deaths per year, respectively). Other important causes for male injury deaths are poisoning (38 deaths per year) and falls (32 deaths per year).

- ❖ Falls are the leading cause of injury death for Vermont women (an average of 38 deaths per year). Motor vehicle injury and poisoning are the next leading causes of injury death among women (an average of 25 women die from motor vehicle injuries and 19 die from poisoning each year).
- ❖ The largest number of injury deaths occurs in Vermonters age 65 and older, with an overall average of 122 injury deaths per year. Falls are the leading cause, accounting for an average of 60 deaths per year. For Vermont youth, the leading cause of injury death is motor vehicles—among Vermonters under age 15, there are 3 deaths per year, on average. Among Vermonters ages 15-24, motor vehicle injury deaths average 22 per year.
- ❖ Among Vermonters ages 25 to 64, poisoning is the leading cause of injury death (an average of 26 (25-44 year olds) and 21 (45-64 year olds) deaths per year). Motor vehicle injury and firearm injury are the second and third leading causes of injury death for Vermonters in this age group. Among the younger group, 25-44 year olds, motor vehicles account for an average of 21 injury deaths per year and firearms account for 18 deaths per year on average. For the older group, 45 to 64 year olds, firearms are the second leading cause with an average of 18 deaths per year and motor vehicles account for an average of 17 deaths per year.

Intent of Injury-Related Death

- ❖ Most injury deaths among Vermont residents are unintentional (70%). Nearly one-quarter of injury deaths are self-inflicted (24%). Vermont residents have a statistically higher proportion of self-inflicted injury death compared to all U.S. residents (19%). In Vermont, the percentage of assault deaths is statistically lower compared to the U.S. (3% vs. 11%). In both Vermont and the U.S., 3% of injury death intent is undetermined (not shown in graph).

Figure 1. Intent for Injury-Related Deaths, 2001 – 2005, Combined



Source: U.S. WISQARS; Vermont Vital Statistics; rates presented are crude rates.

Injury-Related Hospitalizations

Injury-related measures of hospitalization and emergency department visits are broad definitions of injury in that they include treatment for the injuries themselves and for any complications developing as a result. In short, *injury-related* definitions estimate the burden of both injury and injury sequelae (after effects or secondary results of an injury) on Vermont's population. A classic example of an injury with sequelae would be a hip fracture from a fall followed by the development of pneumonia.

This report provides the *number* of hospitalizations/emergency department visits or the rate per 100,000 population, rather than a count of *individual Vermonters* who were hospitalized or the rate of persons hospitalized. The hospitalization database does not allow for individual identification. Thus, it is not possible to note if a single individual was hospitalized for the same injury multiple times or if multiple people were hospitalized for a specific injury. (See Data Sources and Definitions for more information.)

In instances where an emergency department visit results in a hospitalization, the data is accounted for in the hospitalization data and not included in the counts and rates shown in the next section dealing with Emergency Department visits.

Leading Causes of Injury-Related Hospitalizations in Vermont, 2001-2005

- ❖ Nearly 4,300 hospitalizations occur each year for injury-related causes, corresponding to an average annual rate of 695.1 hospitalizations for each 100,000 Vermonters.
- ❖ Falls are the leading cause of injury-related hospitalizations in Vermont and the nation. On average, falls cause 2,049 injury-related hospitalizations in Vermont each year.
- ❖ Motor vehicle injury is the second leading cause of injury-related hospitalizations in Vermont. However, motor vehicles account for just one-quarter the number of injury hospitalizations compared to falls. Motor vehicles account for an average of 553 injury hospitalizations per year. Unspecified injury accounts for nearly as many injury-related hospitalizations (an average of 545 per year).
- ❖ Unintentional and intentional poisoning cause an average of 534 injury-related hospitalizations annually. Hospitalizations related to being struck by an object are the fifth leading cause (an average of 150 per year).
- ❖ For all causes combined, Vermont's injury-related hospitalization rate is lower than the U.S. rate (an overall annual average of 695.1 versus 1244.1 per 100,000 population). Vermont's rates are lower than the U.S. for injury hospitalizations related to falls, motor vehicles, poisoning (See Table 2). The U.S. rate is three times the Vermont rate for hospitalizations related to 'struck by' injuries.

Table 2. Injury-Related Hospitalization Annual Averages, 2001 – 2005, Combined

	VT Number of Hospitalizations	VT Rate per 100,000		U.S. Rate per 100,000
All Causes	4,298	695.1	★	1244.1
Falls	2,049	331.4	★	346.6
Motor Vehicles	553	90.6	★	109.8
Other, Unspecified	545	88.2	★	109.1
Poisoning	534	86.3	★	113.1
Struck by	150	24.3	★	78.3

Source: U.S. HCUP, Vermont Uniform Hospital Discharge Dataset, rates presented are crude rates.

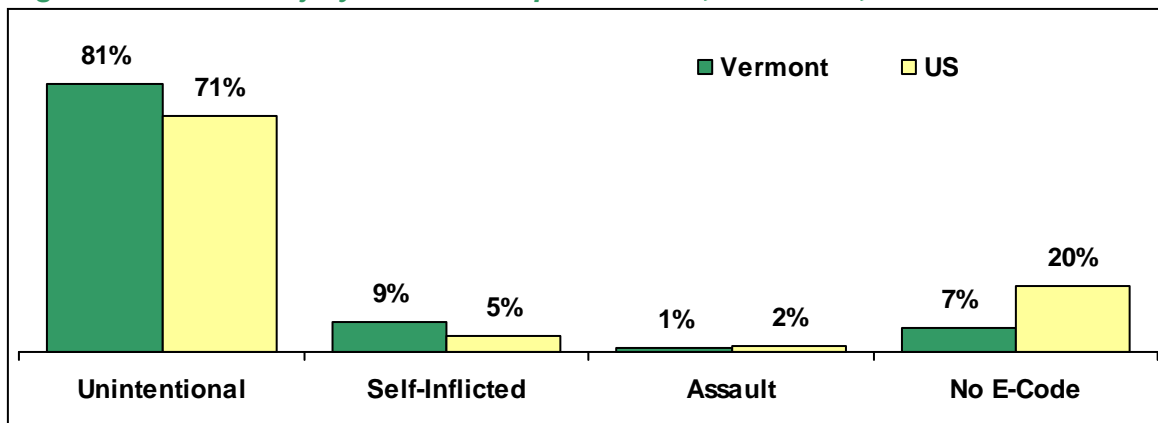
★ Means statistically lower than the U.S. rate; ✕ means statistically higher than the U.S. rate

- ❖ Between 2001 and 2005, injury-related hospitalizations of Vermont women were slightly higher than those for Vermont men (2,271 average female injury hospitalizations versus 2,027 male hospitalizations per year).
- ❖ In Vermont, falls are the leading cause of injury hospitalization for both men and women. Women have more than one and one-half times as many hospitalizations related to falls compared to men (an average of 1,284, compared to 765 per year for men).
- ❖ Motor vehicles are the second leading cause of injury hospitalization for men, with an average of 357 per year, women have just 196 motor vehicle hospitalizations per year.
- ❖ Poisoning is the second leading cause of injury hospitalization for women, they have an average of 330 injury-related hospitalizations per year and men have 204 per year.
- ❖ The number of injury-related hospitalizations increases with age. Injury-related hospitalizations are nearly ten times higher in Vermonters age 65 and older (an average of 1,889 hospitalizations per year) than among those children under age 15 (an average of 195 hospitalizations per year).
- ❖ Falls are the leading cause of injury-related hospitalizations for both younger and older Vermonters. Adults over age 45 are primarily hospitalized due to falls (an average of 1,786 hospitalizations per year), as are children under age 15 (an average of 56 hospitalizations per year).
- ❖ For Vermonters between ages 15 and 45, motor vehicle incidents and poisoning are leading causes of injury-related hospitalizations. Motor vehicles are the leading cause of injury-related hospitalizations for young adults (ages 15 to 24) and the second leading cause for Vermonters ages 25 to 44, accounting for an average of 320 hospitalizations each year for the two age groups combined.
- ❖ Poisoning is the leading cause of injury-related hospitalization for Vermonters ages 25 to 44 and the second leading cause for Vermonters ages 45 to 64. Poisoning-related injuries result in an average of 318 hospitalizations each year for these two age groups combined.

Intent of Injury Hospitalizations

- ❖ More than four out of five injury-related hospitalizations among Vermont residents are for unintentional injury (81%). This is higher than the proportion of unintentional injury across the U.S. (71%). The rates of self-inflicted are injury also higher (9% in Vermont versus 5% nationally). Injury-related hospitalizations from assault are low (1% in Vermont versus 2% nationally).
- ❖ Determining intent of an injury depends on the presence of an “e-code” in the data set. Overall, the Vermont hospital data has more complete reporting of e-codes provided in the data than does the national data. One-fifth (20%) of U.S. hospitalization records for injury-related incidents are missing an e-code. In contrast, only 7% of Vermont injury-related hospitalization records are missing that information.
- ❖ In both Vermont and the U.S., 2% of injury hospitalization intent is undetermined (not shown in graph).

Figure 2. Intent for Injury-Related Hospitalizations, 2001-2005, Combined



Source: U.S. HCUP, Vermont Uniform Hospital Discharge Dataset

Injury-Related Emergency Department Visits

Vermont began collecting emergency department data in January 2001 under the authority of the Department of Banking, Insurance, Securities and Health Care Administration (BISHCA). Beginning in 2003, emergency department records were defined using revenue codes. Prior to 2003, the definition was based on a different, less reliable variable. Therefore, data prior to 2003 is not considered comparable to more recent data. For this reason, emergency department data is only presented for the years 2003 through 2005.

As mentioned earlier, injury-related measures of hospitalization and emergency department visits are broad definitions of injury in that they include treatment for the injuries themselves and for any complications developing as a result. Additionally, this report provides the *number* of hospitalizations/emergency department visits or the rate per 100,000 populations, rather than a count of *individual Vermonters* who were hospitalized or the rate of persons hospitalized. Finally, in instances where an emergency department visit results in a hospitalization, that data is accounted for in the hospitalization data and thus, not included in the counts and rates shown here.

Leading Causes of Injury-Related Emergency Department Visits in Vermont, 2003-2005

- ❖ Between 2003 and 2005, Vermont residents made an average of 68,420 emergency department (ED) visits annually for injury-related causes, corresponding to an annual average rate of 11,014.5 visits per 100,000 persons. Vermont's rate is statistically higher than the U.S. rate, which averages 9,208.2 ED visits per 100,000 annually.
- ❖ The leading causes of injury-related ED visits are falls (an average of 19,514 visits per year), being struck by (10,851 visits per year), overexertion (8,191 visits per year), cut/pierce (7,695 visits per year) and motor vehicles (6,383 visits per year).
- ❖ Vermont injury-related ED visit rates are statistically higher than the U.S. for falls, overexertion, cut/pierce and motor vehicles. The Vermont rate for struck by injury-related ED visits is statistically lower for Vermont compared to the U.S.

Table 3. Injury-Related Emergency Department Visits Annual Averages, 2003–2005, Combined

	VT Number of ED Visits	VT Rate per 100,000		U.S. Rate per 100,000
All Causes	68,420	11,014.5	ℵ	9,208.2
Falls	19,514	3,141.5	ℵ	2,457.9
Struck by	10,851	1,686.6	★	1,912.1
Overexertion	8,191	1,318.7	ℵ	1,112.3
Cut / Pierce	7,695	1,238.8	ℵ	796.7
Other, Unspecified	7,003	1,127.4		442.7
Motor Vehicles	6,383	1,027.4	ℵ	924.6

Source: U.S. WISQARS, Vermont Uniform Hospital Discharge Dataset; rates are crude rates.

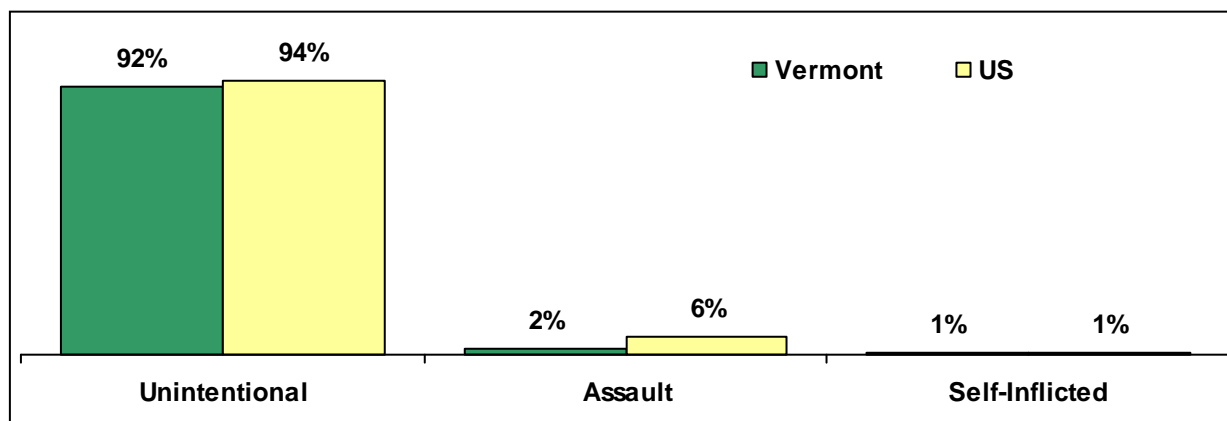
★ Means statistically lower than the U.S. rate; ℵ means statistically higher than the U.S. rate

- ❖ Between 2003 and 2005, Vermont men made an average of 38,044 injury-related ED visits each year, approximately 8,000 more visits each year than Vermont women (who average of 30,376 injury-related ED visits per year).
- ❖ The top two leading causes for injury-related ED visits are the same in both men and women: falls (9,479 visits for men vs. 10,035 visits for women) and struck by (6,891 visits for men vs. 3,960 visits for women).
- ❖ For men, the third leading cause of injury-related ED visits is cut/pierce (an average of 5,159 visits per year). The fourth leading cause of visits is overexertion (4,278 visits per year) and the fifth leading cause is motor vehicle injury (3,288 visits per year).
- ❖ Among women, the third through fifth leading causes of injury-related ED visits are: overexertion (3,913 visits per year), motor vehicles (3,095 visits per year), and cut/pierce (2,536 visits per year).
- ❖ Vermonters age 25 to 44, have the most injury-related ED visits – with an average of 20,278 visits per year. Vermonters ages 15 to 24 average 16,452 ED visits per year. Those between the ages of 45 and 64 have the third largest average number of ED visits (11,726 per year).
- ❖ Vermont seniors, age 65 and older, have, on average, 6,329 injury-related ED visits each year. While this age group has the lowest numbers of ED visits related to injury, they have the highest hospitalization rate. Since ED visits resulting in hospitalization are categorized as “hospitalizations” and not as ED visits, this data shows that when older Vermonters fall, they are more likely to be hospitalized for their injury.
- ❖ For most ages, falls are *the* leading cause of ED visits. The only age group where falls is *not* the leading cause of death is 15 to 24 year olds, where being struck by an object is the leading cause of ED visits.

Intent of Injury-Related Emergency Department Visits

- ❖ Unintentional injury accounts for nearly all injury-related ED visits among both Vermont (92%) and U.S. residents (94%). Vermont injury-related emergency department visits are statistically less likely to be due to assaults than U.S. injury-related emergency department visits (2% vs. 6% nationally). Self-inflicted injury accounts for 1 percent of injury-related emergency department visits among both Vermont and U.S. residents. In both Vermont and the U.S., 1% is undetermined (not shown in graph).

Figure 3. Intent for Injury-Related Emergency Department Visits, 2003–2005, Combined



Source: U.S. WISQARS, Vermont Uniform Hospital Discharge Dataset

Special Topics in Injury

The following sections discuss priority areas for injury prevention and control in Vermont. Each section presents an in-depth discussion of an area identified through the Centers for Disease Control and Prevention *Leading Injury Indicators Report*, discussion with Vermont's Injury Prevention Community Planning Group (IPCPG) and careful analysis of the Vermont injury data.

Falls

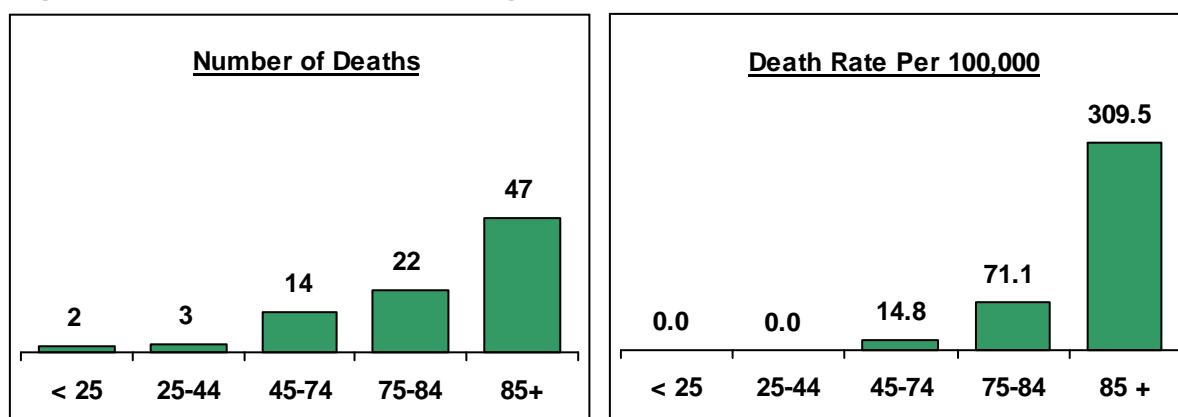
Falls are the second leading cause of injury death (20% of all injury deaths) and the leading cause of injury hospitalizations and emergency department visits (48% and 29% respectively). Between 2001 and 2005, the BRFSS survey asked Vermonters age 60 and older if they had fallen in the past year – nearly one-fifth indicated they had (17%).

Vermont has a statistically higher rate of falls deaths (11.3 per 100,000 compared to 6.3 per 100,000 in the U.S.) and emergency department visits (3,141.5 per 100,000 compared to 2,457.9 per 100,000, U.S.) than the U.S. as a whole. However, Vermont has a lower rate for falls hospitalizations (331.4 per 100,000 compared to 346.6 per 100,000, U.S.).

Fall-Related Deaths

- ❖ As mentioned above, falls account for 20% of all injury deaths and are second only to motor vehicles as a cause of injury-related death in Vermont. Overall, 11.3 Vermonters for every 100,000 die as a result of a fall. This is comparable to 12.5 per 100,000 killed by a motor vehicle and approximately 9 per 100,000 killed by either a firearm or by poisoning (8.6 and 9.2, respectively).
- ❖ Between 2001 and 2005, there were a total of 348 fall-related deaths in Vermont; an average of 70 per year. Most fall-related deaths occur to Vermonters 65 years of age or older (86%), and just more than half the falls deaths are female (54%). Falls are the leading cause of injury death for women and for seniors (ages 65 and older) in Vermont.
- ❖ Fall death rates are higher in older Vermonters. In 2005, there were only 15 deaths attributed to falls in persons younger than age 65. Nearly all falls-related deaths were seniors (73 of the 88 fall deaths). Those in the oldest age group (85 and older) have twice the number of falls as those in the next youngest age group (75 to 84 year olds). However, the rate of falls in these two age groups differs vastly (76.1 per 100,000 for 75-84 year olds versus 394.4 per 100,000 for those 85 years of age and older).

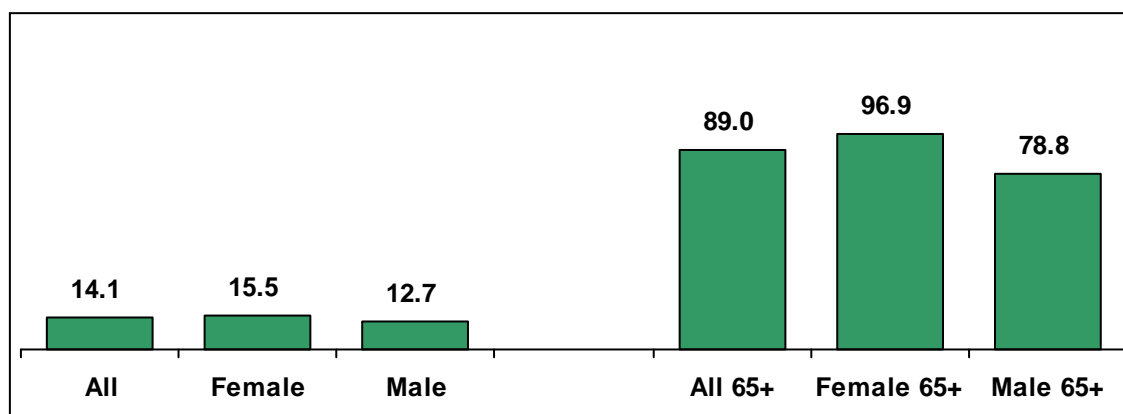
Figure 4. Fall-Related Deaths and Age, 2005



Source: Vermont Vital Statistics

- ❖ Overall, women had slightly higher numbers of deaths from falls and slightly higher overall rates per 100,000 persons. In 2005, 49 Vermont women died from fall injuries; which translates to 15.5 fall-related deaths per 100,000 Vermont women. Among men, there were 39 deaths due to falls, for a rate of 12.7 per 100,000 Vermont men.
- ❖ Differences emerge among men and women in the later years of life. Among Vermont seniors, females have twice as many deaths due to falling than men. Seventy-three of the 88 falls in 2005 occurred among seniors (age 65 and older): 45 female deaths and 28 male deaths. For Vermont's senior women this is a fall-related death rate of 96.9; while the men have a rate of 78.8.

Figure 5. Fall-Related Death Rate per 100,000 by Gender and Age, 2005

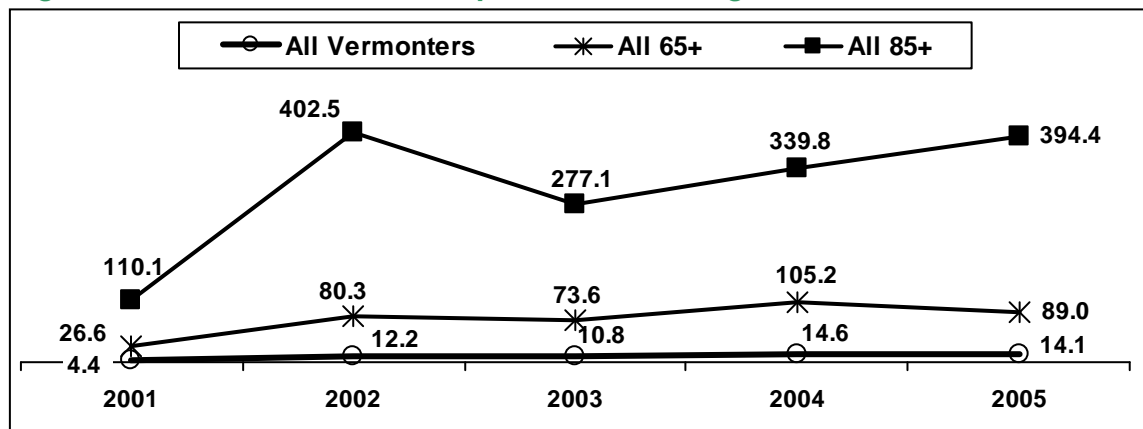


Source: Vermont Vital Statistics

- ❖ Over time, the number and rate of fall related deaths among Vermonters has been rising, but it appears this increase may have leveled off in 2005. In 2001, the falls death rate among all Vermonters was 4.4 per 100,000. By 2005, the rate had more than tripled to 14.1 per 100,000. There is some speculation that coding on death certificates improved between 2001 and 2002, resulting in a clearer picture of fall-related injury death.

- ❖ Between 2004 and 2005, the rate of falls death among all Vermonters declined slightly (from 14.6 to 14.1 per 100,000). Among Vermonters 65 years of age and older, the decline was more dramatic – from 105.2 per 100,000 to 89.0 in 2005. The oldest Vermonters (those 85 and older) did not see a decline in their rate of death from falls. Among this group there was an increase from 339.8 per 100,000 in 2004 to 394.4 per 100,000 in 2005.

Figure 6. Fall-Related Death Rate per 100,000 and Age, 2001 – 2005



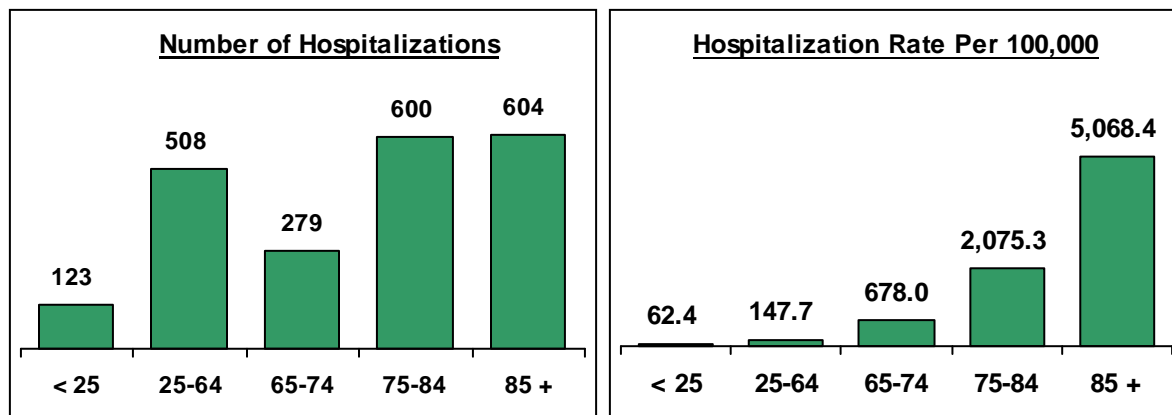
Source: Vermont Vital Statistics

- ❖ During 2001 through 2005, half of all fall-related deaths occur ‘on the same level’ which means a person tripped, slipped or stumbled (49%). It also includes falls from scooters, skateboards, skis and snowboards. However, skiing and snowboarding account for only 1% of the falls deaths that occur on the same level. Just less than one in ten fall-related deaths occur on stairs (9%), on furniture (7%) or by falling from one level to another (5%). Few of the fall-related deaths are due to falling from a building or off a ladder (2% each). One quarter of fall-related deaths do not specify the nature of the fall (25%).

Fall-Related Hospitalizations

- ❖ Falls are the leading cause of injury hospitalizations in Vermont, accounting for nearly half of all injury hospitalizations (48%). In addition, falls are the leading cause of injury hospitalization at more than three and a half times the rate of the next most common causes (at 331.4 per 100,000) – which include motor vehicles (90.6), poisoning (86.3) and unspecified injuries (88.2). Statistically, Vermont has a lower rate of fall-related hospitalizations as compared to the U.S. (346.6 per 100,000).
- ❖ From 2001 to 2005 there were 10,246 fall-related hospitalizations in Vermont – an average 2,049 per year. Falls are a leading cause of injury-related hospitalization for Vermonters 14 and younger and those over the age of 45.
- ❖ In 2005, the number of fall-related hospitalizations was lowest among those younger than 25 and among those between 65 and 74 years of age. However, as with the death rate, hospitalization rates increase as Vermonters age. Those 85 and older are hospitalized due to falls at a rate 82 times higher than Vermont’s youngest residents (younger than 25). Seven out of ten (70%) of all fall-related hospitalizations are Vermonters 65 years of age or older.

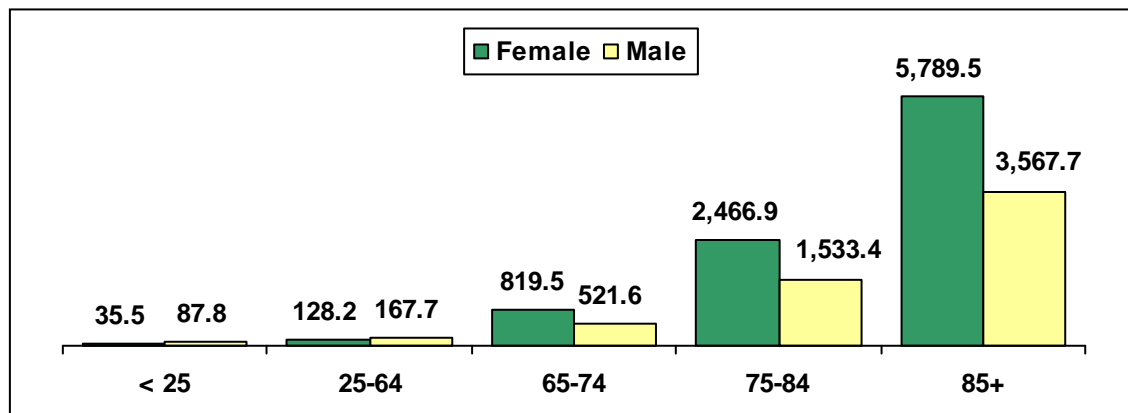
Figure 7. Fall-Related Hospitalizations and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ In younger years, men are hospitalized for falls at a higher rate than women. However, this proportion changes during the later years. After age 65, women are hospitalized due to falls at a higher rate than men.

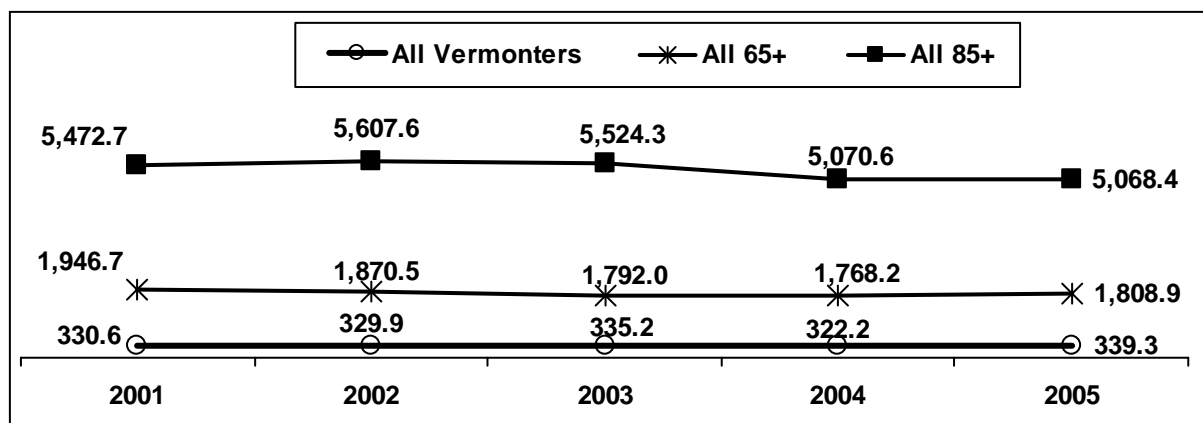
Figure 8. Fall-Related Hospitalization Rate per 100,000 by Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Over the years, rates of fall-related hospitalization have stayed relatively stable. In 2001, Vermont’s overall rate of fall-related hospitalization was 330.6 per 100,000 persons. Despite a slight bit of fluctuation, by 2005, the rate was at 339.3 per 100,000. Rates for Vermonters 65 years of age and older, although much higher, show a similar pattern of slight movement, but relative stability. Among the oldest Vermonters (those 85 years of age and older), the rate of fall-related hospitalizations is similar through 2003, and then shows a slight drop to 5,068.4 per 100,000 in 2005.

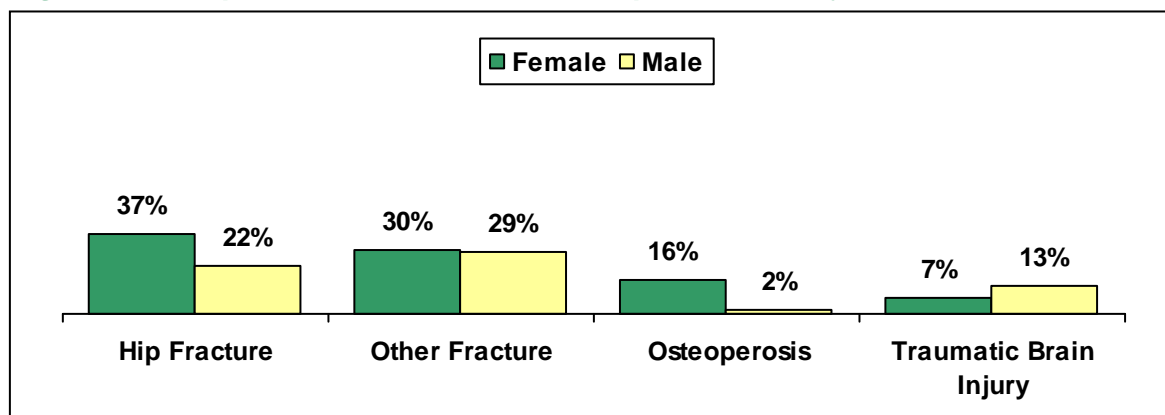
Figure 9. Fall-Related Hospitalization Rate per 100,000 and Age, 2001 - 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Similar to fall-related deaths, most falls resulting in hospitalization occur ‘on the same level’ (i.e., tripping, slipping or stumbling). This accounts for 36% of all falls. A significant number of fall hospitalizations do not indicate a place of occurrence (38%). Seven percent occur on stairs and 6% are furniture-related. Half as many are the result of falls from one level to another (4%), a ladder (3%), skiing/snowboarding (3%) or a building (2%).
- ❖ It appears that most falls happen in residential settings, but 43% have no information regarding the location of the injury. Among those fall-related incidents that have location information, more than four out of five occur at home or in a residential facility (81%).
- ❖ Hip fracture is the most common complication of a fall requiring hospitalization (31% of all falls). Hip fracture is more likely to occur in women (37%) than in men (22%). Men are nearly twice as likely to encounter Traumatic Brain Injury (TBI) as a result of a fall than are women (13% versus 7%). Women are eight times more likely to encounter Osteoporosis as a complication of a fall requiring hospitalization (16% versus 2%).
- ❖ In Vermont, among all falls-related hospitalizations, 38% are discharged to skilled care facility (i.e., a nursing home). Among older adults (65 and older), that number increases to half (50%).

Figure 10. Complications of Fall-Related Hospitalizations by Gender, 2001-2005, Combined



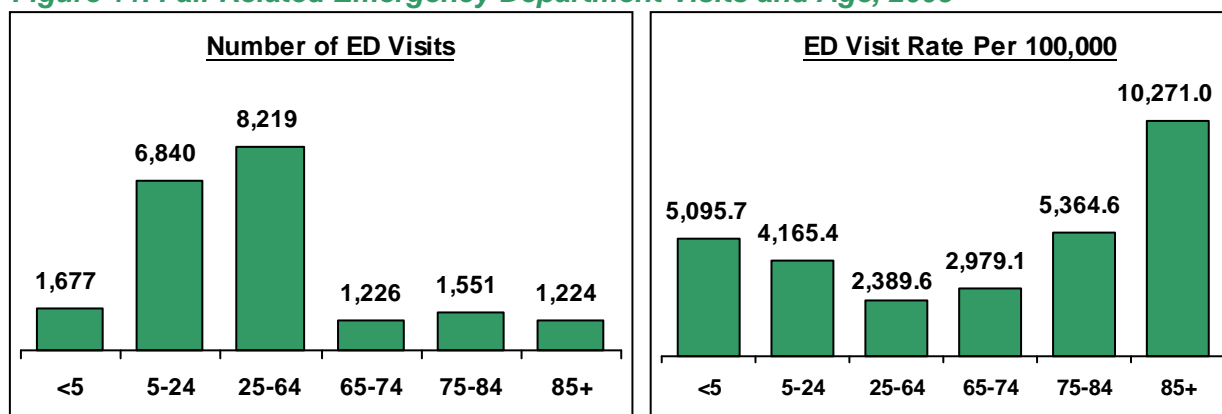
Source: Vermont Uniform Hospital Discharge Dataset

Fall-Related Emergency Department Visits

- ❖ Falls are the leading cause of injury-related emergency department (ED) visits, accounting for more than one-quarter of all injury-related ED visits (29%). From 2003 to 2005, ED visits related to falling occurred one and a half times more often than the next most common cause of injury-related ED visits – being struck by something, overexertion, cut/pierce and other unspecified injury related reasons. Vermont’s rate of ED visits for falls is statistically higher than the rate across the nation (3,141.5 per 100,000 in Vermont, as compared to 2,457.9 per 100,000 in the U.S.).
- ❖ Between 2003 and 2005, there were a total of 58,543 fall-related ED visits in Vermont for an average of nearly 19,500 per year. Unlike the pattern for hospitalizations and deaths from falls, where the oldest age groups are the most heavily affected, emergency department visits for falls are common in all age groups. In national emergency room data, falls are consistently highest in the youngest and oldest age groups.¹ This trend is also reflected in Vermont’s data.
- ❖ While the absolute number of ED visits for falls among the youngest and oldest age groups are smaller than the absolute number in the middle age groups, the rate of ED visits are higher for children under the age of five and for adults over 75. Vermont’s oldest residents have the highest rates of ED visits for falls, at 10,271.0 per 100,000 persons. Children younger than five visit the ED due to a fall at about half that rate, 5,095.7 per 100,000. Vermonters between the ages of 25 and 64 have the lowest rate of ED visits for falls at 2,389.6 per 100,000.

¹ Injury Surveillance Falls Workgroup Recommendations. Atlanta (GA): State and Territorial Injury Prevention Directors Association, 2006.

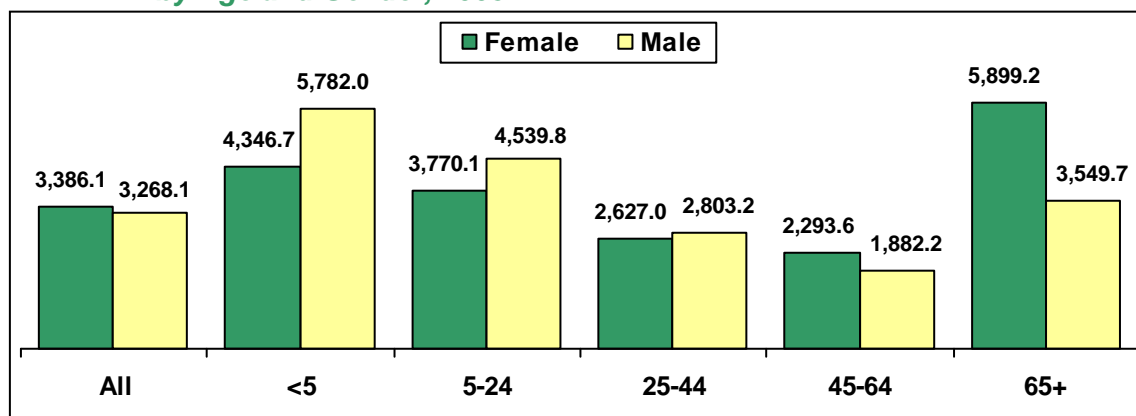
Figure 11. Fall-Related Emergency Department Visits and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Overall, men and women have very similar numbers and rates of ED visits due to falls. In 2005, 10,707 women and 10,030 men visited the ED for a fall-related injury. In terms of rates per 100,000, Vermont women have an ED visit rate of 3,386.1 versus men whose rate is 3,268.1.
- ❖ A closer look at gender differences by age show that young men and older women are the most likely persons to need ED care due to falls. Prior to the age of 5, males visit the ED more than females (5,782.0 visits per 100,000 boys, as compared to 4,346.7 visits for girls). For seniors, those proportions are reversed: women make more visits than men (5,899.2 visits among women over 65, versus 3,549.7 visits among senior men).

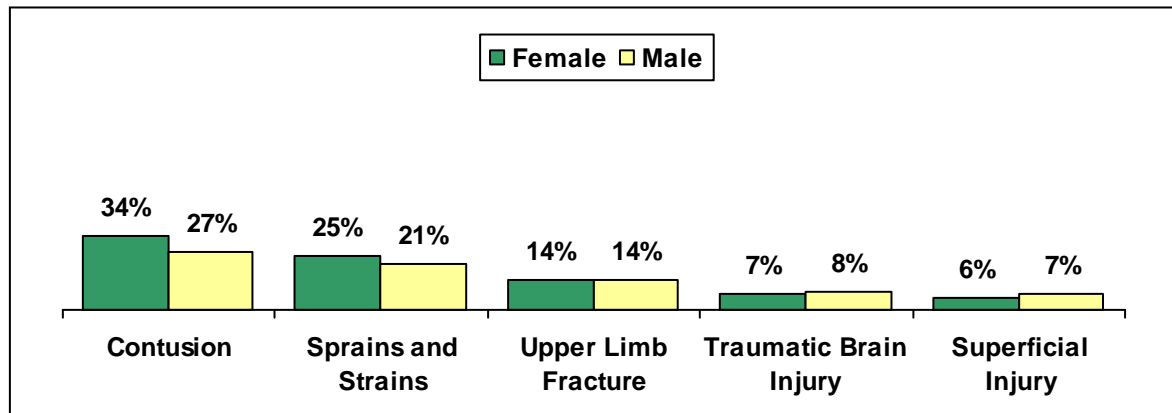
Figure 12. Fall-Related Emergency Department Visit Rates per 100,000, by Age and Gender, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Common complications of a fall requiring an ED visit are: contusions (30%), sprains and strains (24%), upper limb fractures (14%), TBI (7%) and superficial injury (7%). Men and women experiences the complications in relatively equal proportions.

Figure 13. Complications of Fall-Related ED Visits by Gender, 2003-2005, Combined



Source: Vermont Uniform Hospital Discharge Dataset

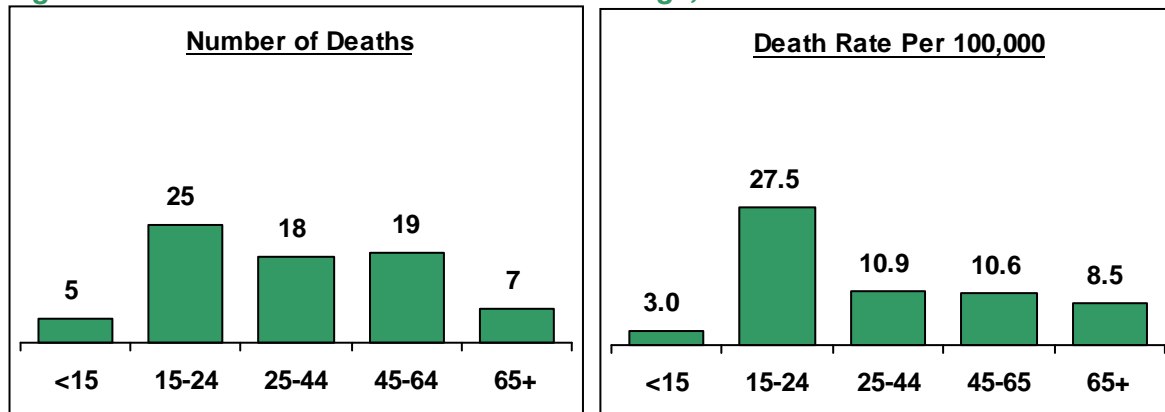
Motor Vehicle Injuries

Motor vehicles are the leading cause of injury death among Vermonters (22% of all injury deaths) and one of the five leading causes of injury hospitalizations and emergency department visits (13% and 9% respectively). Vermont has a statistically lower rate of motor vehicle injury deaths (12.5 per 100,000 compared to 14.9 per 100,000 in the U.S.) and hospitalizations (90.6 per 100,000 compared to 109.8 per 100,000, U.S.) than the U.S. as a whole. Vermont's emergency department visits for motor vehicle injury are higher than those across the U.S. (1027.4 per 100,000 compared to 924.6 per 100,000, U.S.).

Motor Vehicle-Related Deaths

- ❖ Motor vehicles are the leading cause of injury-related death in Vermont. Between 2001 and 2005, there was an average of 77 motor vehicle deaths per year. This equates to an annual average rate of 12.5 deaths per 100,000 Vermonters, which is a statistically lower rate than the overall U.S. rate of 14.9 deaths per 100,000. More than half of those motor vehicle injury deaths occur to Vermonters between the ages of 15 and 44 (56%). Two-thirds of the motor vehicle deaths are male (68%).
- ❖ Though the absolute number of deaths is similar across age groups from 15 to 64, young adults (ages 15-24) have the highest motor vehicle death rates in Vermont, at 27.5 per 100,000. The next highest death rate occurs among those between 25 and 65 years at 10.9 (for those 25-44) and 10.6 (for those 45-64) per 100,000.

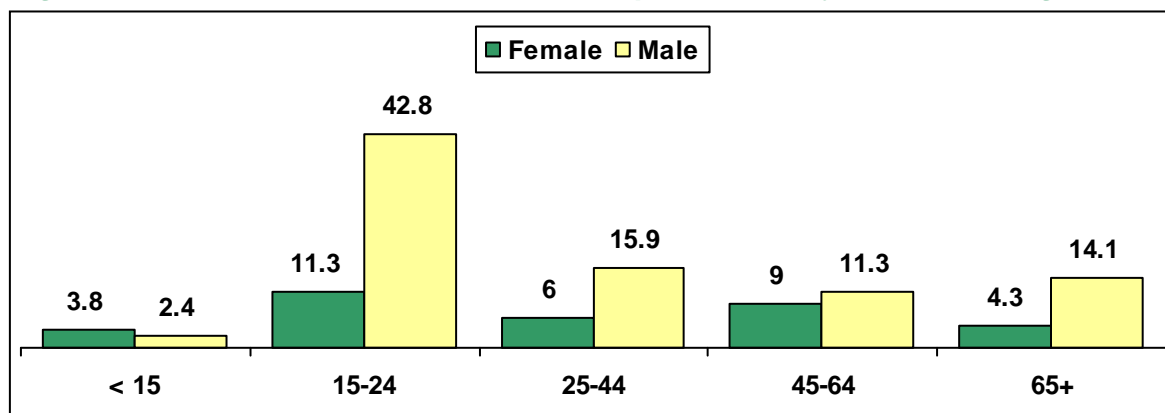
Figure 14. Motor Vehicle-Related Deaths and Age, 2005



Source: Vermont Vital Statistics

- ❖ In Vermont, males have the higher rates of fatal motor vehicle injuries for all age groups except those younger than 15, where girls have the higher rates. While the highest rates of motor vehicle related death are in the 15-24 year old male age group at 42.8 deaths per 100,000; for women, the highest rates occur in the 85 and older age group (12.4 per 100,000).

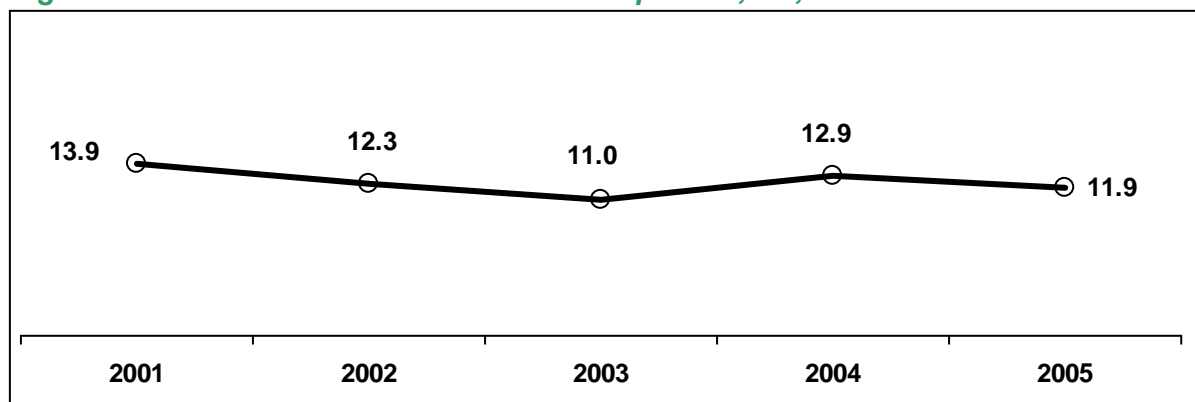
Figure 15. Motor Vehicle-Related Death Rate per 100,000 by Gender and Age, 2005



Source: Vermont Vital Statistics

- ❖ Motor vehicle-related deaths rates in Vermont have changed very little since 2000, when the rate was 13.9 deaths per 100,000 Vermonters.
- ❖ Of the 74 motor vehicle-related deaths in 2005, most occur with automobiles and their drivers. Just fewer than half of the deaths (46%) occurred inside of a car, pick-up truck or van. Among the car occupant deaths, nearly two-thirds were the automobile's driver (64%). Almost one-fifth of motor vehicle related deaths in 2005 were motorcyclists (19%).

Figure 16. Motor Vehicle-Related Death Rate per 100,000, 2001 - 2005



Source: Vermont Vital Statistics

- ❖ According to the Vermont Governor's Highway Safety Program, two out of five crash deaths on Vermont highways are alcohol-related (40%). The Healthy Vermonters 2010 goals include an objective for reducing alcohol-related motor vehicle deaths to 4.8 per 100,000. According to the VT Governor's Highway Safety Program data, Vermont has met that goal with a 2005 alcohol-related crash death rate of 4.7 per 100,000.
- ❖ The Behavioral Risk Factor Surveillance Survey (BRFSS, years 2001-2005) reports that four percent of Vermonters have driven a car when they had too much to drink in the last 30 days. Twice as many men (6%) than women (3%) indicate this to be the case. One Vermonters in ten between the ages of 18 and 24 have driven after drinking too much (10%).

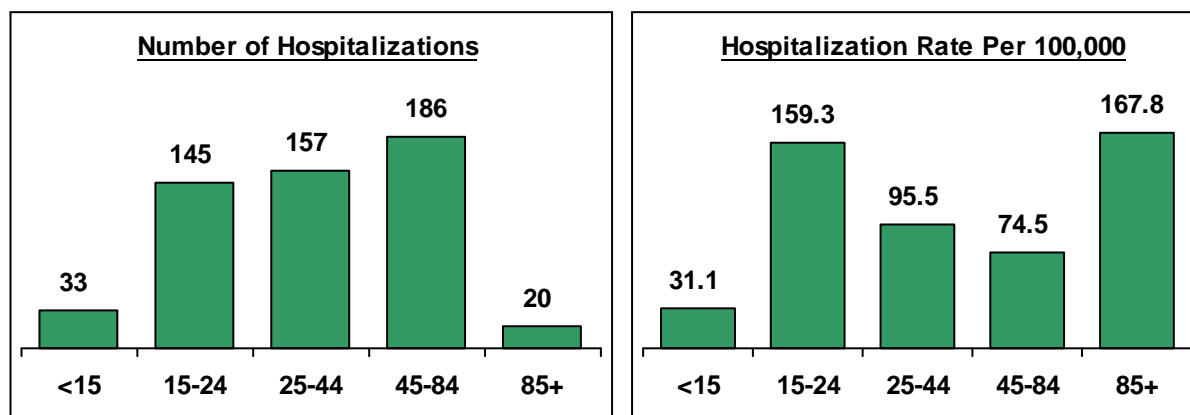
- ❖ Vermont's 2005 Youth Risk Behavior Survey shows that, despite decreased drinking and driving among high school students since 1993, more than one student in five reports they have ridden in a car driven by someone who had been drinking (22%). Eight percent report driving a car themselves when they had been drinking alcohol (8%). Male students are twice as likely as female students to report this (10% versus 5%).
- ❖ Similar numbers of students report they have been in a car driven by someone who was using marijuana (23%) or have driven a car after they have used marijuana themselves (11%). Again, males are more likely than females to indicate they have driven under the influence of marijuana (14% versus 8%).

Healthy Vermonters 2010	
Reduce alcohol-related motor vehicle deaths	
	Rate per 100,000
Goal:	4.8
VT 2000	5.1
VT 2005	4.7

Motor Vehicle-Related Hospitalizations

- ❖ Motor vehicle-related hospitalizations are the third leading cause of injury-related hospitalizations in Vermont, accounting for about one in eight injury-related hospitalizations (13%). Vermonters are hospitalized at an average rate of 90.6 per 100,000 persons for motor vehicle injuries. This is statistically lower than the overall U.S. rate of 109.8 per 100,000.
- ❖ Between 2001 and 2005, there were a total of 2,766 motor vehicle related hospitalizations in Vermont – an average of 553 per year.
- ❖ In Vermont, the highest rates of hospitalization for motor vehicle injuries occur among 15 to 24 year olds and among those 85 years of age and older. Among those aged 15 to 24, the motor vehicle hospitalization rate is 159.3 per 100,000, more than one and a half times that of the next oldest age group (25 to 44 year olds, 95.5 per 100,000). Injury rates also spike among Vermont's oldest citizens, with 167.8 per 100,000 of those 85 years and older being hospitalized for a motor vehicle injury.

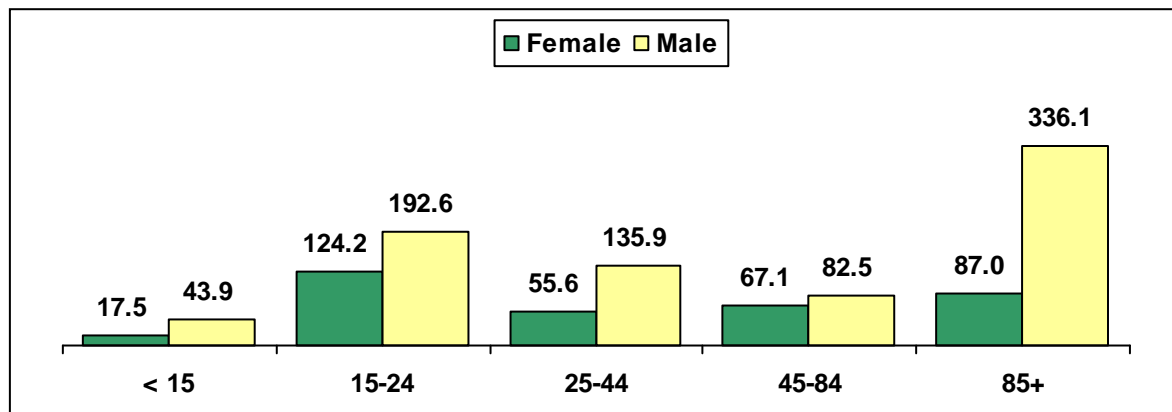
Figure 17. Motor Vehicle-Related Hospitalizations and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ In Vermont, boys and men have higher rates of hospitalizations for motor vehicle injuries in all age groups. Prior to the age of 15, the male rate of hospitalization for motor vehicle injury is two and a half times that of females (43.9 per 100,000 compared to 17.5 among females). Between the ages of 15 and 24 the rate of injury hospitalization for males is slightly higher – 192.6 per 100,000 men compared to 124.2 per 100,000 women. Among the oldest Vermonters, men are hospitalized at more than three and a half times that of women (336.1 per 100,000 for males, compared to 87.0 per 100,000 females).

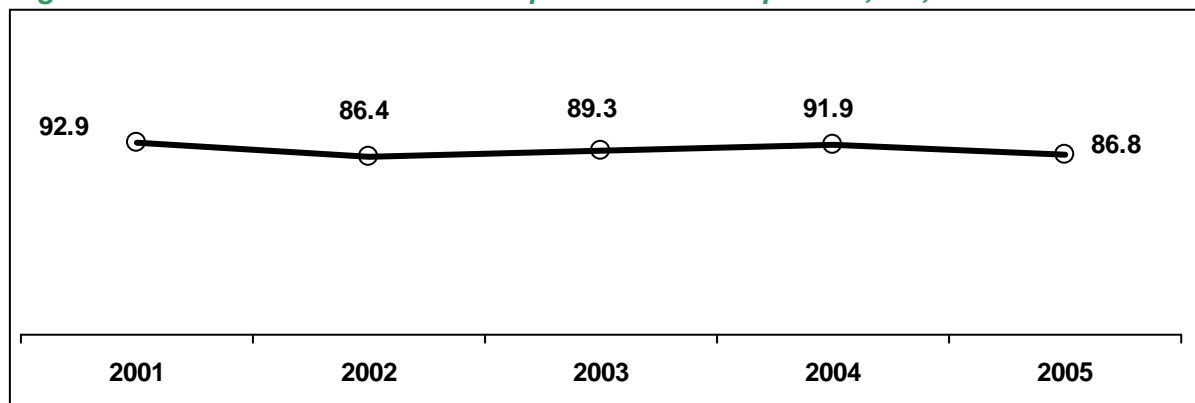
Figure 18. Motor Vehicle-Related Hospitalization Rate per 100,000 by Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Since 2001, the overall rate of motor vehicle injury-related hospitalizations has declined somewhat. In 2001, the rate was 92.9 per 100,000, but the rate had dropped to 86.8 per 100,000 in 2005.

Figure 19. Motor Vehicle-Related Hospitalization Rate per 100,000, 2001 - 2005

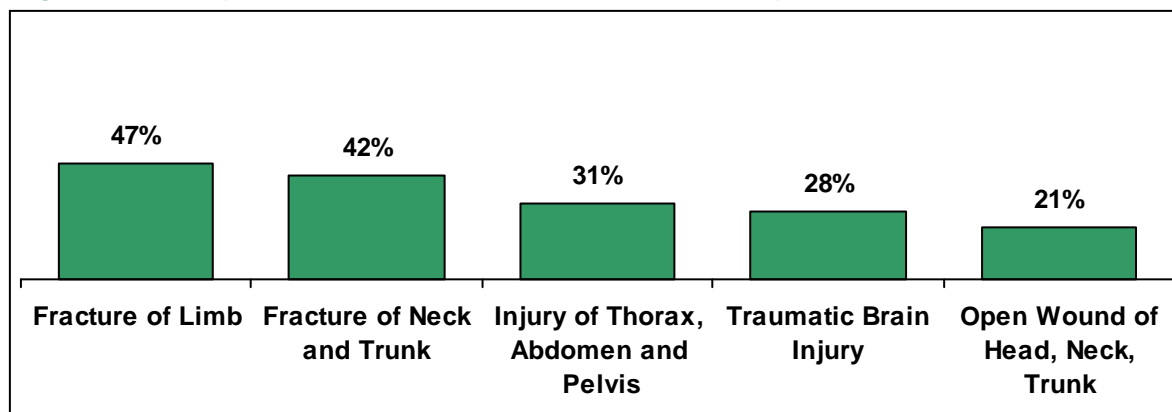


Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Most of the injuries in traffic-related motor vehicle hospitalizations are incurred by the person operating the vehicle or motorcycle (68% of all motor vehicle hospitalizations in 2005 were for the driver of a vehicle or a motorcycle). About one-fifth were passengers (22%). Six percent were cyclists or pedestrians.

- ❖ Common complications from motor vehicle related hospitalizations include: fractured limbs (47%), fractured neck or trunk (42%) or injury to the thorax, abdomen or pelvis (31%). In one-quarter of the hospitalizations, traumatic brain injury (TBI) is a complication (28%). Open wounds are also a complication in one hospitalization in five (21%).

Figure 20. Complications of Motor Vehicle-Related Hospitalizations, 2001-2005, Combined



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Non-traffic motor vehicle incidents – such as those incurred on snowmobiles or ATVs – can also be considered in a discussion of Vermont’s motor vehicle related injuries. Between 2001 and 2005, there were 157 hospitalizations for snowmobile crashes – an average of 31 per year. A majority of these hospitalizations occurred to men between the ages of 15 and 44. On average, 24 men are hospitalized per year due to a snowmobiling incident; as compared to 7 women.
- ❖ Non-snowmobile, non-traffic, motor vehicle injury incidents that lead to hospitalization follows a similar pattern to that of the snowmobile incidents. On average, there are about 53 hospitalizations per year, with most occurring among men between 15 and 44. However, non-snowmobile, non-traffic incidents also affect Vermont’s 5-14 year olds as well.
- ❖ One way to reduce fatality and injury related to motor vehicle incidents is the use of safety belts when riding in a vehicle. According to the National Highway Traffic Safety Administration, 85% of Vermonters used their seat belts in 2005. This is slightly higher than the national seat belt usage proportion of 82%. However, it falls short of the Healthy Vermonters 2010 goal of 92%.
- ❖ Among Vermont youth, more than four out of five report wearing their safety belt when riding in a car driven by someone else (83%). Slightly more always buckle up when they are driving (86%). However, about of third of students who report being injured in a car crash indicate they were not wearing a seat belt when the crash occurred (36%). (According to the 2005 Youth Risk Behavior Survey.)

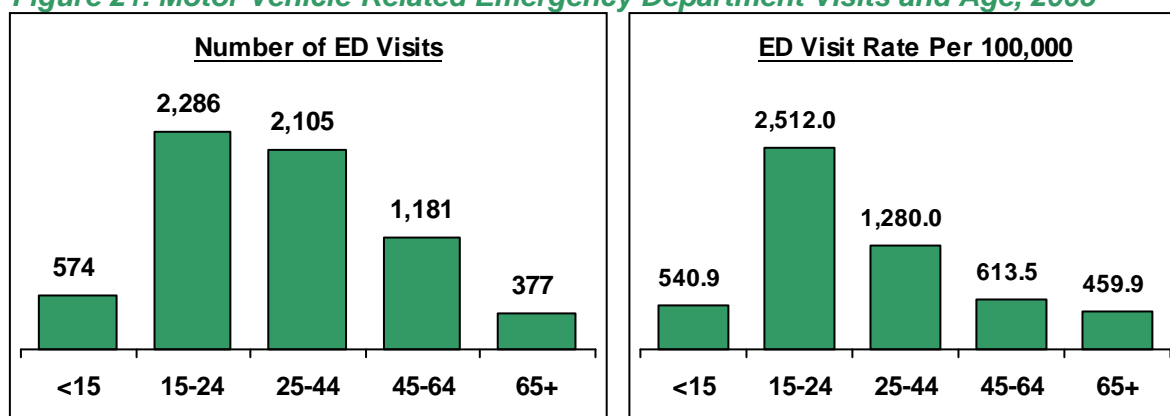
Healthy Vermonters 2010
 Increase the percentage of people who always use safety belts

	Adults	HS Students
Goal:	92%	92%
VT 2000	62%	79% (2001)
VT 2005	85%	83%

Motor Vehicle-Related Emergency Department Visits

- ❖ Motor vehicle related Emergency Department (ED) visits are the fifth leading cause of injury ED visits in Vermont, accounting for just less than ten percent of all injury-related ED visits (9%). Overall, in 2003 through 2005, there were 19,147 motor vehicle related visits to Vermont emergency rooms (an average of 6,382 ED visits per year).
- ❖ In 2005, there were 6,523 ED visits for motor vehicle injuries in Vermont. In contrast to falls, which affect the older populations more, motor vehicle injury affects teenagers and young adults most, and then becomes less prevalent in the older age groups. Vermonters between 15 and 24 have the highest ED visit rate of 2,512.0 per 100,000 persons. This is more than four and a half times the rate of those younger than 15 (540.9 per 100,000) and twice as high as the rate of 25 to 44 year olds (1,280.0 per 100,000).

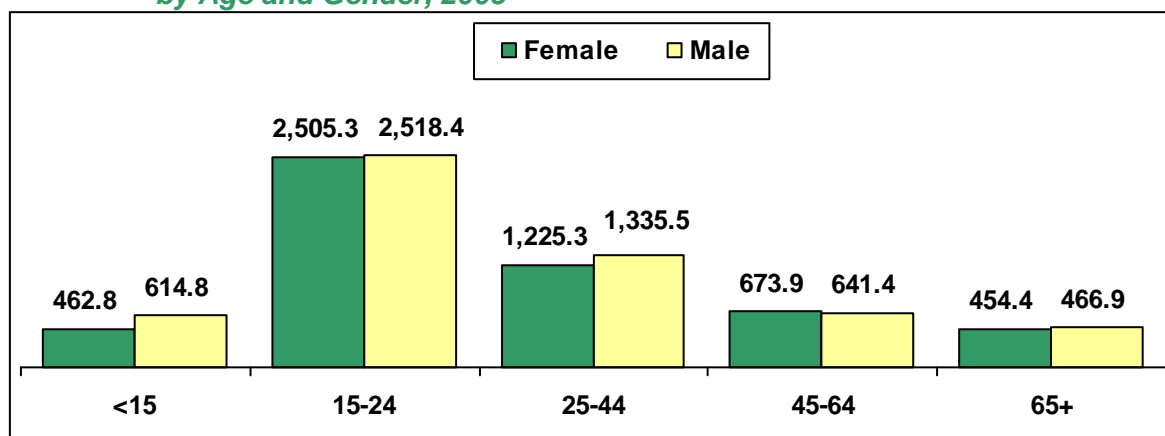
Figure 21. Motor Vehicle-Related Emergency Department Visits and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Across most age groups, ED visit rates are very similar. Overall, males have a slightly higher rate than women (1,087.1 versus 1,008.0 per 100,000).

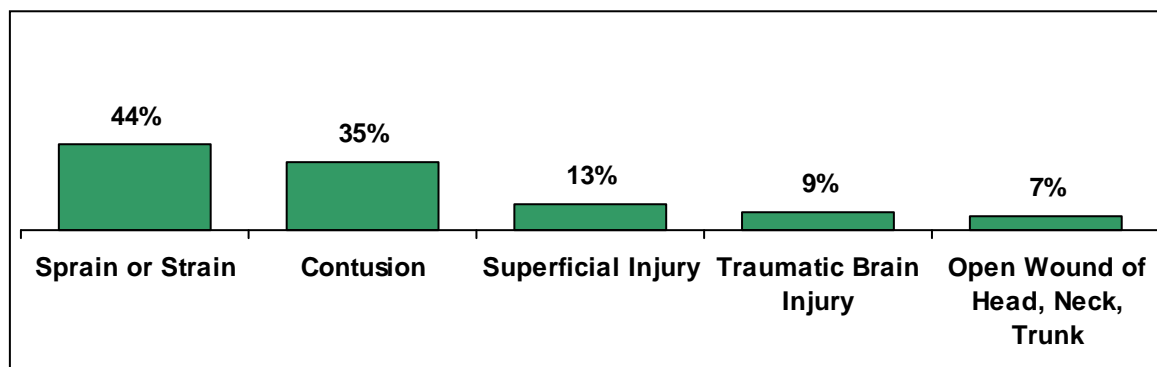
Figure 22. Motor Vehicle-Related Emergency Department Visit Rate per 100,000, by Age and Gender, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ As with hospitalizations, a large proportion of the ED visits are made by the operator of the vehicle. Of all the ED visits for motor vehicle-related injury in 2005, three out of five times the operator of the vehicle was treated (61%). About one-quarter of the ED visits were to treat a passenger (25%) and 5% of the visits were cyclists or pedestrians injured by a motor vehicle.
- ❖ Common complications of motor vehicle-related ED visits were sprains or strains (44%) and contusions (35%). For 13% of visits, superficial injuries were treated. One in every ten in ED visits related to motor vehicle injury was a traumatic brain injury (9%) and slightly fewer were open wounds (7%).

Figure 23. Complications of Motor Vehicle-Related Emergency Department Visits, 2003-2005, Combined



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ As with hospitalizations, non-traffic motor vehicle accidents – such as those incurred on snowmobiles or ATVs – are also part of Vermont’s motor vehicle related injuries. From 2003 to 2005, there were 654 ED visits related to snowmobile accidents – an average of 131 per year. As with the hospitalizations, a majority of these visits were males between the ages of 15 and 44. In this time frame, there were 504 visits for men (due to a snowmobiling accident) compared to 150 visits for women.
- ❖ Other non-traffic incidents that result in ED visits follow a similar pattern of age and gender division. There are approximately 903 ED visits per year for non-traffic, non-snowmobile accidents and most are male, between the ages of 15 and 44. There are also a number of these incidents that occur among Vermont’s 5-14 year old boys, as well.

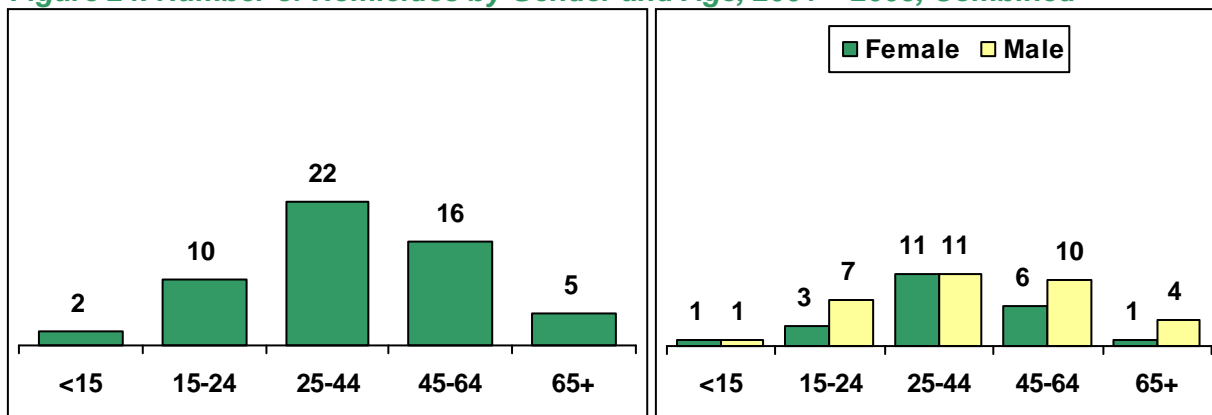
Homicide and Assault

In 2005, Vermont's homicide rate was 1.9 per 100,000 persons (an average of 11 homicides per year), while the national rate was more than three times higher, at 6.1 per 100,000. Additionally, assault-related injury is not one of the five leading causes of injury hospitalizations or emergency department visits in Vermont. In Vermont, the rate of assault-related hospitalizations is nearly three times lower than the U.S. rate (11.2 per 100,000 compared to 34.8 per 100,000 nationally), and while the rate of ED visits is half that of the U.S. rate (242.8 per 100,000 versus 560.1 per 100,000).

Homicide Deaths

- ❖ Homicide is *not* one of the five leading injury-related causes of death in Vermont. Between 2001 and 2005 there were a total of 55 homicides in the state (an average of 11 per year). In 2005, Vermont's homicide rate was 1.9 per 100,000, lower than the national homicide rate 6.1 per 100,000. Most homicides occur to individuals between the ages of 15 and 64 and 10 of the 12 homicides in Vermont in 2005 were men.
- ❖ Due to the small number of homicide deaths in Vermont, five years of data have been combined in order to evaluate homicide differences between age groups and gender. Overall, more than four out of five homicides in Vermont since 2001 have occurred to individuals between the ages of 15 and 64 (87%).
- ❖ Three out of five homicides in Vermont have occurred to males (60%) since 2001.

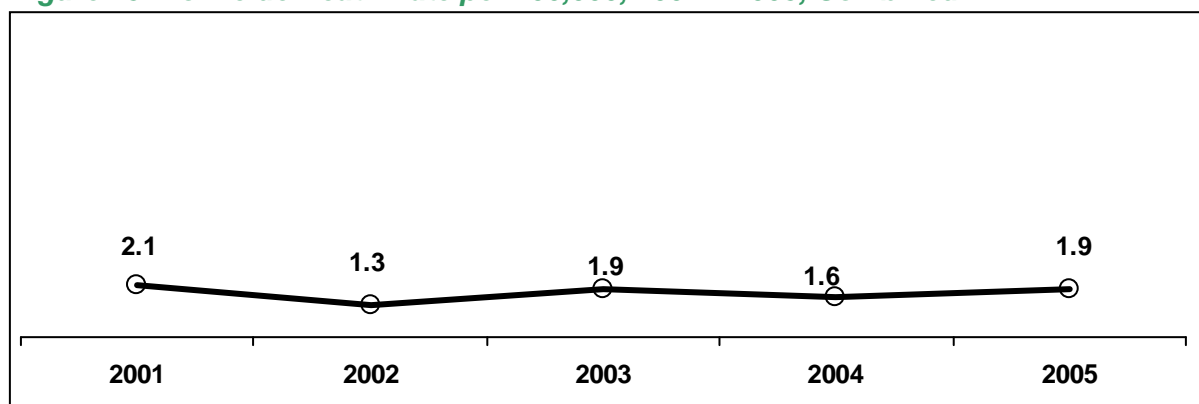
Figure 24. Number of Homicides by Gender and Age, 2001 – 2005, Combined



Source: Vermont Vital Statistics

- ❖ The rate of homicide in Vermont has been consistently low. In 2001, Vermont's homicide rate peaked at 2.1 per 100,000 and dipped to its' lowest point in 2002 (1.3 per 100,000). In 2005, the rate of homicide was at 1.9 per 100,000 in Vermont.

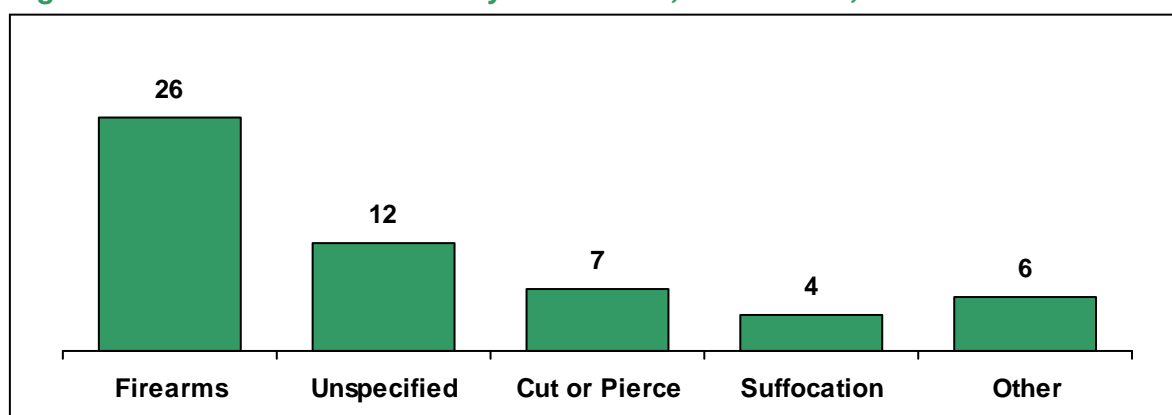
Figure 25. Homicide Death Rate per 100,000, 2001 – 2005, Combined



Source: Vermont Vital Statistics

- ❖ Firearms were the mechanism of death in nearly half of the homicides (26 of 55) in 2005. In instances of homicide by firearm, three out of four deaths are male (19 of the 26); one in four are female (7 of the 26). Other homicides were attributed to: cutting or piercing (7); suffocation (4); or some other cause (6).
- ❖ In 12 of the 55 homicides, no mechanism of death was specified because the medical examiner did not have enough information to determine the homicide mechanism.

Figure 26. Number of Homicides by Mechanism, 2001 – 2005, Combined



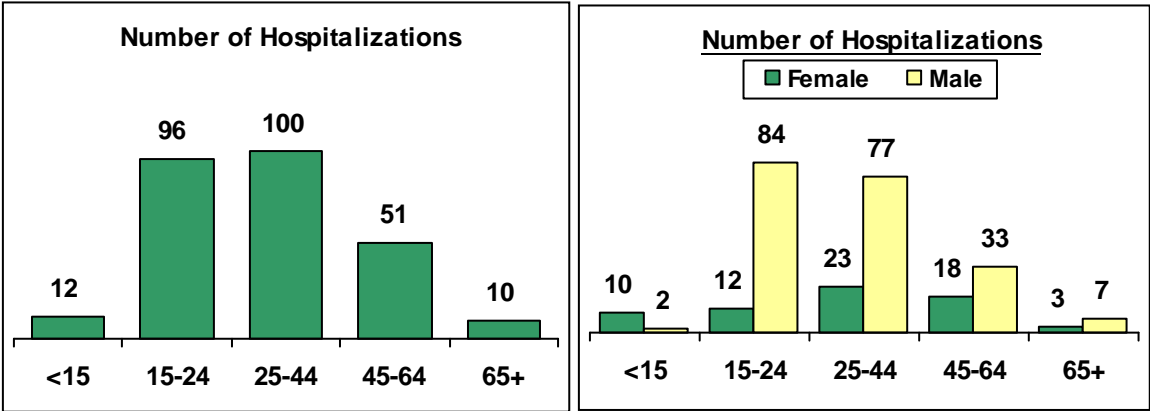
Source: Vermont Vital Statistics

Assault-Related Hospitalizations

- ❖ As with homicide, assault is *not* one of the five leading injury-related reasons for hospitalization in Vermont. Between 2001 and 2005 there were a total of 269 hospitalizations for assault (average of 54 per year). In 2005, Vermont's rate of assault-related hospitalizations was 11.2 per 100,000 and the comparative national rate was 38.4 per 100,000. Similar to homicides, most of the hospitalizations for assault are between the ages of 15 and 44 and three-quarters of the assault hospitalizations are males (75%).

- ❖ Due to the small number of annual assault hospitalizations in Vermont, five years of data have been combined in order to evaluate differences between age groups and gender. Overall, nearly three out of four hospitalizations for assault in Vermont since 2001 have occurred to individuals between the ages of 15 and 44 (73%) and four out of five of those were males (82%). Just four percent of hospitalizations for assault is a Vermonter younger than 15 years of age and nearly all of these young assault hospitalizations are female (10 of 12).
- ❖ Among Vermonters age 15-24, men are seven times more likely to be hospitalized for assault than are women. For ages 25-44, men are hospitalized three times more often for assault than women.

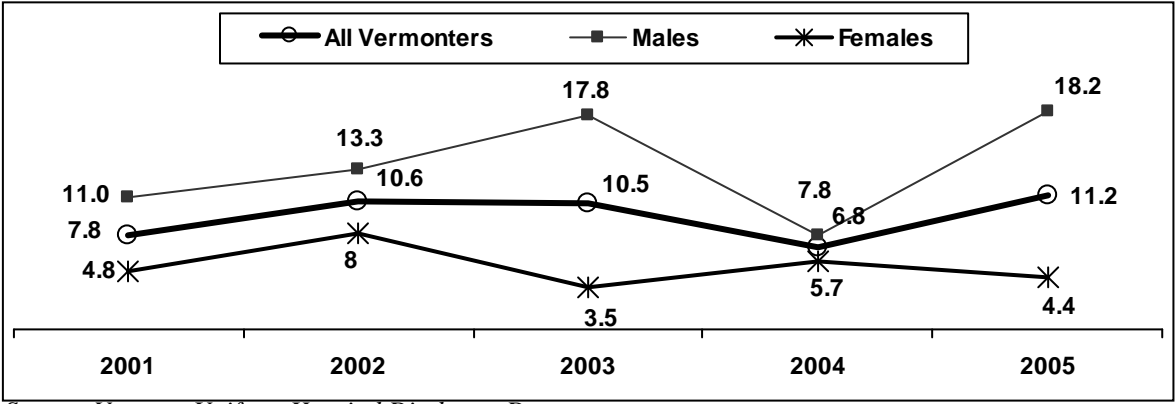
Figure 27. Assault-Related Hospitalizations by Age and Gender, 2001 – 2005, Combined



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Between 2001 and 2005, the rate of hospitalization for assault fluctuated. In 2001, Vermont had an overall assault-related hospitalization rate of 7.8 per 100,000. In 2005, that rate had increased to 11.2 per 100,000. Males have consistently had a higher rate of assault hospitalization than females.
- ❖ Between 2003 and 2005 both the overall assault hospitalization rate and the male assault hospitalization rate show a significant decline (from 2003 to 2004) and a subsequent increase (from 2004 to 2005). In 2003, there had been 61 assault-related hospitalizations, and in 2004, there were 38. The total increased again in 2005 to 70. Due to these small total number of hospitalizations, it is not surprising to see a large fluctuation in the rates.

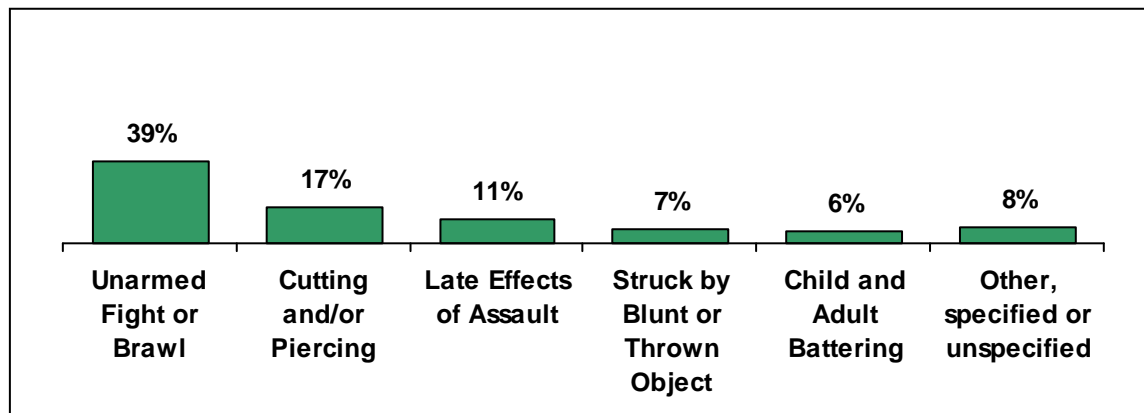
Figure 28. Assault-Related Hospitalization Rates, Overall and by Gender, 2001 – 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Assault-related hospitalizations are due to a number of different mechanisms. More than one-third are due to an unarmed fight or brawl (39%). This is the largest single category of mechanism. The next largest category is cutting and/or piercing which accounts for fewer than half of the hospitalizations (17%). One in ten are the result of latent effects of an assault (11%).
- ❖ There are multiple other mechanisms for assault-related hospitalization, but none account for more than 5% of Vermont’s hospitalizations. Some of these are: human bites; firearms injury; poisoning; injury as a result of hot liquid; being pushed from a high place; and, rape.

Figure 29. Mechanism for Assault-Related Hospitalization, 2001 – 2005, Combined

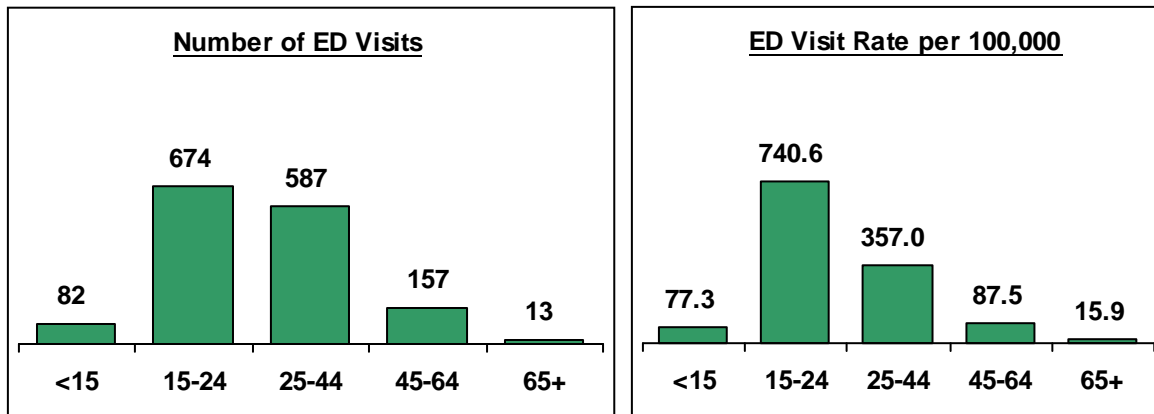


Source: Vermont Uniform Hospital Discharge Dataset

Assault-Related Emergency Department Visits

- ❖ As with homicide and assault-related hospitalization, ED visits due to assault are *not* among the top five reasons for injury-related ED visits in Vermont. From 2003 to 2005 there were a total of 4,422 ED visits due to assault. The Vermont rate of ED visits for assault in 2005 was 242.8 per 100,000 and the U.S. rate was 560.1 per 100,000. Similar to homicides and assault hospitalizations, more than four out of five of Vermont ED visits for assault are individuals between the ages of 15 and 44 (84%). A majority of the assault ED visits are made by males (60%).
- ❖ Vermonters between the ages of 15 and 24 have the highest rate of ED hospitalization due to assault – 740.6 per 100,000. Those between 25 and 44 have the second highest rate at 357.0 per 100,000. Vermont’s youngest residents (those 5 to 15) have a rate of ED assault visits of 105.2 per 100,000. Vermont’s older populations, those 45 and older, have the lowest rates of ED assault visits.

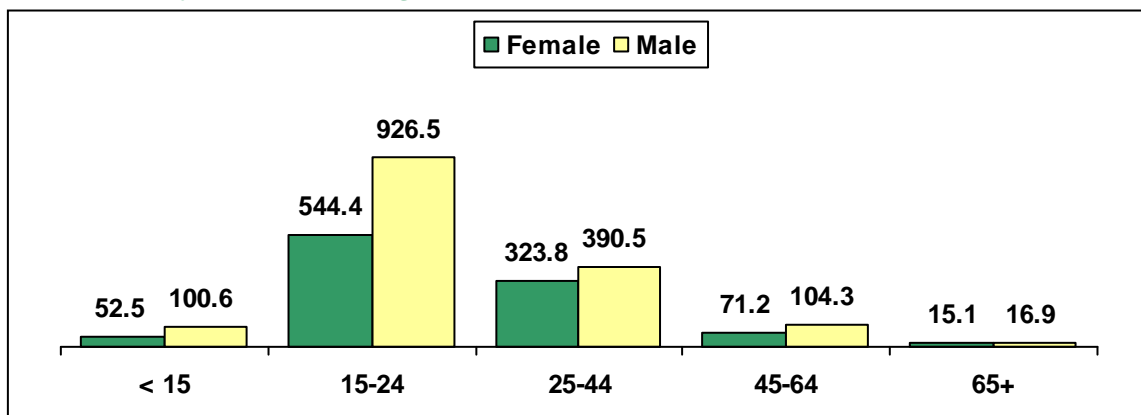
Figure 30. Assault-Related Emergency Department Visits by Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Overall, males have an ED visit rate for assault that is one and a half times higher than females. Among the youngest Vermonters, the rate for males is twice that of females (100.6 versus 52.5 per 100,000). In the 15-24 year old age group, where the male rate (926.5 per 100,000) is nearly double that of the female rate (544.4 per 100,000).

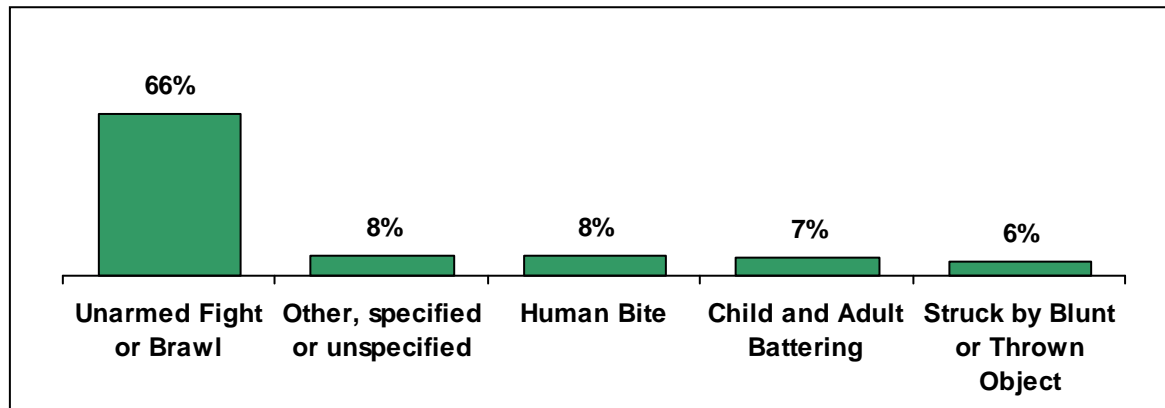
Figure 31. Assault-Related Emergency Department Visit Rate per 100,000 by Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Two-thirds of assault-related ED visits are due to an unarmed fight or brawl (66%). This is the largest single category of mechanisms. The next largest category is human bites and 'other' causes, which account for 8% each. Less than one in ten is the result of child and/or adult battery (7%) or being struck by an object (6%).
- ❖ There are multiple other mechanisms for assault-related hospitalization, but none account for more than 5% of Vermont's hospitalizations. Some of these include cutting or piercing, firearms injury, poisoning, injury as a result of hot liquid, being pushed from a high place, and rape.

Figure 32. Mechanism for Assault-Related Emergency Department Visit, 2003 – 2005, Combined



Source: Vermont Uniform Hospital Discharge Dataset

Assault among Vermont Youth

- ❖ While reports of physical fighting in Vermont high schools has declined since 1993, more than one student in four reported being in a physical fight in the 2005 Youth Risk Behavior Survey (27%). Male students are more likely to report physical fighting than female students (35% versus 19%). Only 3% of students report being in a physical fight that resulted in a need to be treated by a doctor or nurse and 14% reported they were in a physical fight on school property.
- ❖ Nine percent of all students report they carried a weapon on school property (9%). Male students were four times more likely than females to report carrying a weapon on school property (13% versus 3%). Six percent of all students indicate they were threatened with a weapon on school property in the past year (6%), and male students are more likely to have been threatened (8% versus 5%).
- ❖ Nearly one-fifth of students report they have been bullied (18%) and younger students were more likely to report this is the case (26% of 8th graders versus 10% of 12th graders). Slightly more students (21%) report they have bullied someone. Five percent of students indicate they did not go to school recently because they felt unsafe.

Intimate Partner Violence

Intimate Partner Violence (IPV) can be defined as a pattern of abusive behavior that one person uses to gain and maintain power and control over an intimate partner. Tactics may include physical, sexual, emotional and economic abuse and isolation.²

Intimate Partner Violence has emerged as a risk factor for chronic health problems and is associated with 8 out of 10 of the leading indicators for Healthy People 2010. Identification, early intervention, and prevention of domestic violence in the public health setting can lead to significant savings and improved effectiveness for many public health services.³

IPV Related Deaths

- ❖ The State of Vermont Domestic Violence Fatality Review Commission Report, 2006, indicates nearly half of all homicides in Vermont between 1994 and 2005 were related to domestic violence (49%). If suicide following a domestic violence incident is included, that proportion rises to 61%.⁴

Healthy Vermonters 2010	
Further reduce physical assaults by intimate partners	
	Per 1,000
Goal:	3.3
VT 2001	2.6
VT 2005	1.5

Other Related Data

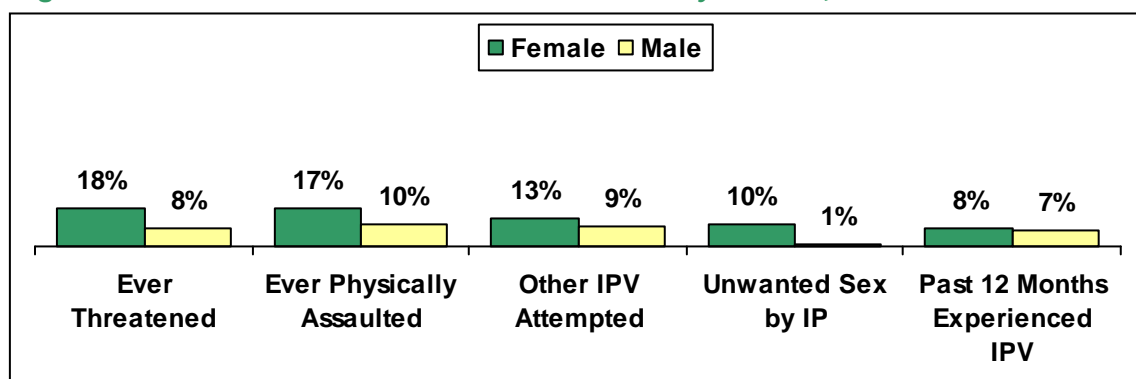
- ❖ According to the 2005 BRFSS, 13% of adult Vermonters (age 18 and older) indicate that, at some point in their life, they were threatened with physical violence by an intimate partner. Fourteen percent report they have been physically assaulted (hit, slapped, pushed, kicked or physically hurt in any way) by an intimate partner. These results are similar to those found in all 12 state that conducted the BRFSS IPV modules – where 14% indicated they had been threatened and 16% had been physically assaulted.
- ❖ Women are more likely than men to report ever being threatened or physically assaulted by an intimate partner (18% versus 8% threatened; 17% versus 10% assaulted). They are also more likely to report experiencing unwanted sex with their partner (10% versus 1%).
- ❖ However, when asked about experiencing intimate partner violence and/or unwanted sex with a partner, *in the past 12 months* women and men report such incidents in nearly equal measure (8% of women versus 7% of men).

² Vermont Network Against Domestic and Sexual Violence, <http://www.vtnetwork.org/main.php//DomesticViolence>.

³ The Missing Link: A Coordinated Public Health Response to Domestic Violence; Linda Chamberlain, for the Family Violence Prevention Fund.

⁴ State of Vermont Domestic Violence Fatality Review Commission Report 2006. www.atg.state.vt.us/upload/1146654319_2006_Domestic_Violence_Report.pdf

Figure 33. Intimate Partner Violence in Vermont by Gender, 2005



Source: Vermont Behavioral Risk Factor Surveillance Survey, 2005

- ❖ Vermont's 2004 Pregnancy Risk Assessment Monitoring System (PRAMS) found that a total of 6% of women who had a live birth in the past 12 months experienced some kind of abuse – either physical assault or psychological abuse – during their pregnancy. This includes 4% who indicated physical abuse by an intimate partner, 4% who felt threatened or unsafe during pregnancy, and 3% who reported controlling behavior by an intimate partner during pregnancy.
- ❖ In the 2003 PRAMS survey, more than one-third of new mothers said that a health care worker talked with them about physical abuse during their pregnancy (36%).
- ❖ According to the 2005 Vermont Youth Risk Behavior Survey, six percent of 8th to 12th graders, report being physically hurt by a boyfriend or girlfriend in the past 12 months (6%). There were no significant differences between male and female students.
- ❖ One student in ten reports being touched against their wishes or being forced to touch someone else (10%) and half as many reported being forced to have sexual intercourse (5%). Female students were three times more likely than male students to report being touched or being forced to touch someone else (16% versus 5%).

Suicide

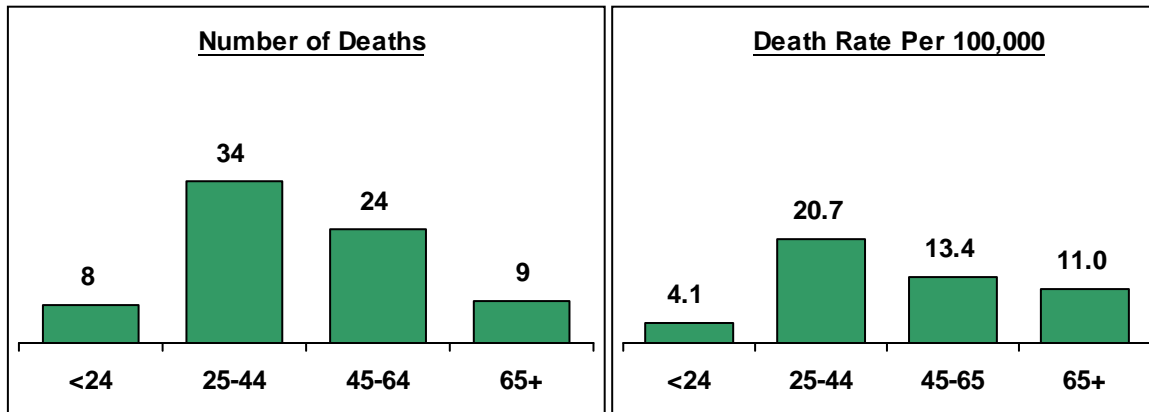
In 2005, Vermont's suicide death rate was 12.0 per 100,000 persons (with an average of 82 suicide deaths per year). Vermont's 2005 rate was similar to the national 2005 suicide mortality rate of 11.0. Additionally, attempted suicide is not a leading cause of injury hospitalizations or emergency department visits in Vermont. In Vermont, the rate of suicide attempt hospitalizations is similar to that of the U.S. rate (71.1 per 100,000 compared to 73.5 per 100,000 nationally). The 2005 Vermont ED rate is nearly twice as high as the U.S. rate (140.4 per 100,000 versus 73.6 per 100,000 nationally).

Suicide Deaths

- ❖ In the years 2001 to 2005, there were a total of 412 suicides in Vermont (average of 83 suicide deaths per year). Most suicides are individuals between the ages of 25 and 64. However, seniors between the ages of 75 and 85 have the highest rate of suicide of any age group for these years.
- ❖ In 2005, Vermont had a suicide mortality rate of 12.0 per 100,000, which is similar to the national rate of 11.0 per 100,000.
- ❖ In 2005, there were 75 suicides in Vermont. Three-quarters of those suicides were persons between the ages of 25 and 64. The rate of suicide was highest among those 25 to 44 (20.7 per 100,000), but those between 45 and 64 have the next highest suicide rate of 13.4 per 100,000.

Healthy Vermonters 2010	
Reduce suicide deaths	
	Per 100,000
Goal:	4.8
VT 2000	12.8
VT 2005	12.0

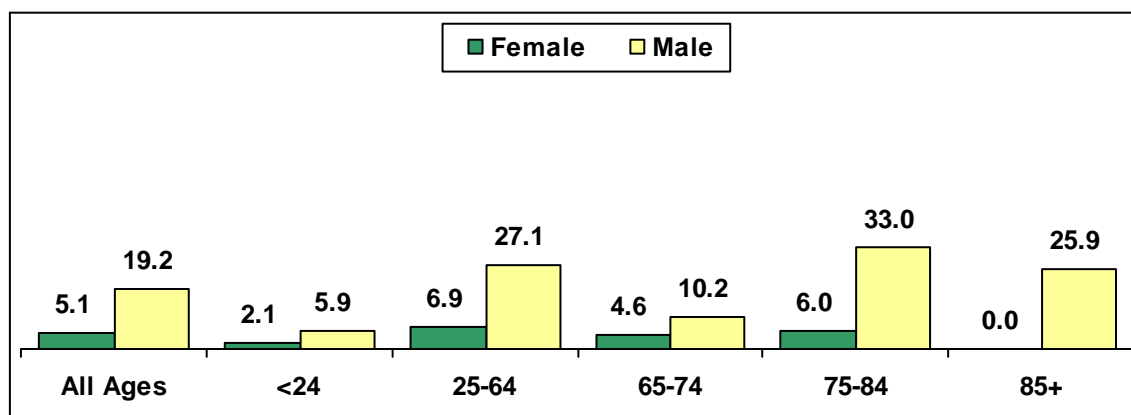
Figure 34. Suicide Death and Age, 2005



Source: Vermont Vital Statistics

- ❖ In 2005, Vermont males have a suicide rate that is nearly four times the rate of Vermont women (19.2 versus 5.1 per 100,000). In every age category, men have a higher rate of suicide than women.

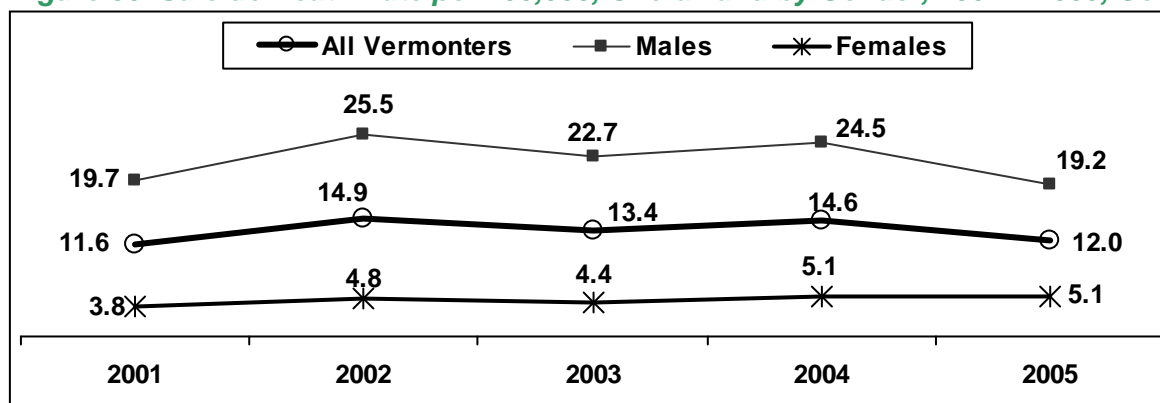
Figure 35. Suicide Death Rate per 100,000 by Gender and Age, 2005



Source: Vermont Vital Statistics

- ❖ Since 2001, the suicide mortality rate for all Vermonters has remained relatively stable. In 2001, the overall rate for suicide was 11.6 per 100,000 and rose only slightly to 12.0 per 100,000 in 2005. The highest suicide rate in that time period was in 2002, when 14.9 per 100,000 Vermonters died from suicide.
- ❖ In 2001, men had a suicide rate of 19.7 per 100,000. In 2005, that number was down slightly to 19.2 per 100,000. The highest suicide rate in the time frame was in 2002 when 25.5 per 100,000 Vermont men died from suicide.
- ❖ Women’s rate of suicide is significantly lower than the male rate of suicide. In 2001, 3.8 women in 100,000 died from suicide -- the lowest rate in the time period. By 2005, 5.1 women in 100,000 died from suicide.

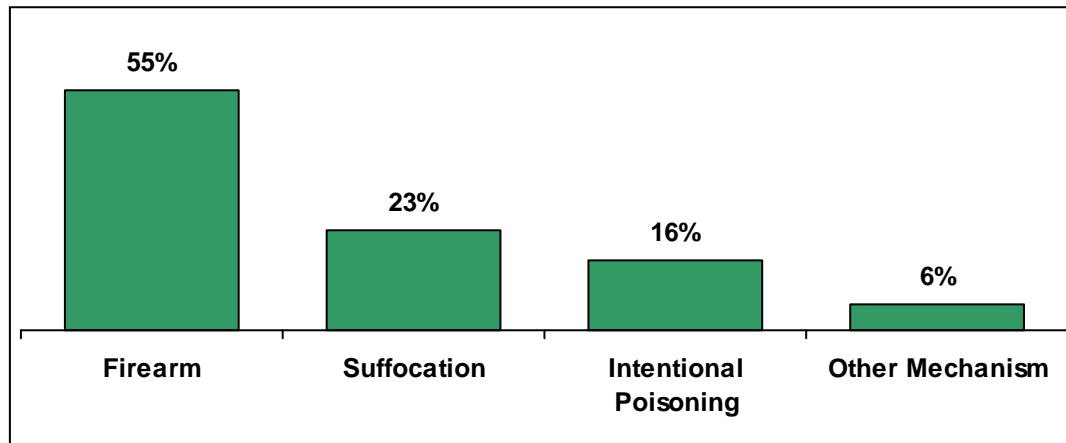
Figure 36. Suicide Death Rate per 100,000, Overall and by Gender, 2001 – 2005, Combined



Source: Vermont Vital Statistics

- ❖ A majority of suicide deaths in Vermont between 2001 and 2005 were caused by firearms (55%). Approximately, one in five were caused by suffocation (23%) and one in six were caused by intentional poisoning (16%).
- ❖ Of all deaths attributable to firearms in Vermont between 2001 and 2005, more than four out of five were suicide (85%).

Figure 37. Mechanism for Suicide Death, 2001 – 2005, Combined

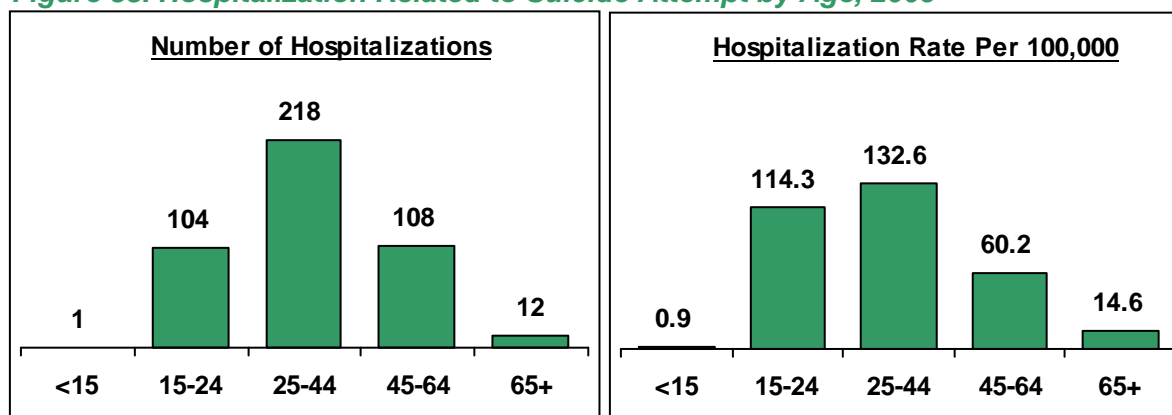


Source: Vermont Vital Statistics

Attempted Suicide-Related Hospitalizations

- ❖ In the years 2001 to 2005, there were a total of 2,139 hospitalizations due to attempted suicide (average of 428 per year). Most suicide attempt hospitalizations are individuals between the ages of 25 and 44. Two-thirds of the hospitalizations for attempted suicide are female.
- ❖ As with suicide mortality, Vermont has a similar rate of hospitalization for suicide attempts compared to the national rate: 71.1 per 100,000 in Vermont and 73.5 per 100,000 nationally.
- ❖ In 2005, there were 443 hospitalizations for a suicide attempt in Vermont. The largest proportion of suicide attempts occurred among persons between the ages of 25 and 44 (218). The next highest proportion of suicide attempts were between the ages of 45 and 64 (108) and 15 and 24 (104).
- ❖ The rate of suicide attempts is lowest in Vermont's youngest population – those under the age of 15 (0.9 per 100,000). Those between ages 15 and 24, and 25 and 44 have similar rates (114.3 and 132.6 per 100,000). These are the highest rates of any age group.

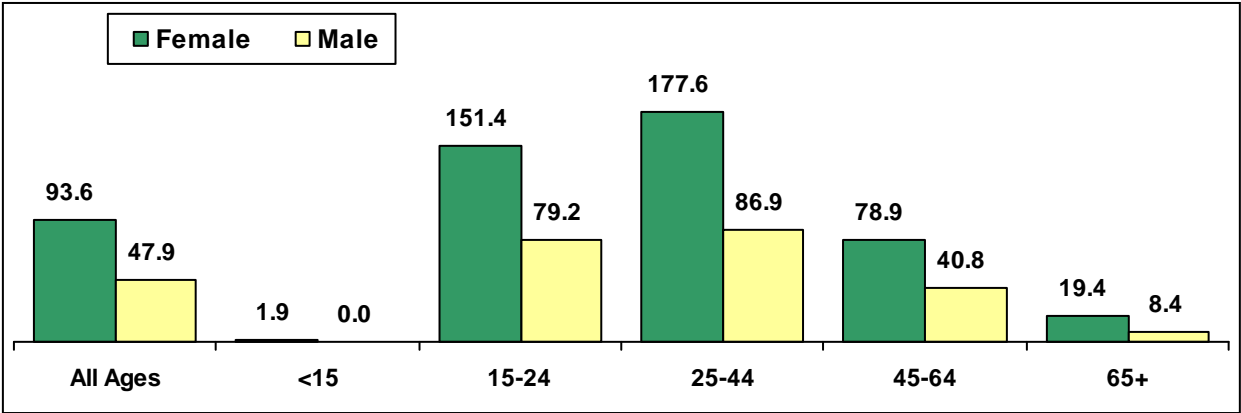
Figure 38. Hospitalization Related to Suicide Attempt by Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ In 2005, women had a higher rate of hospitalization for attempted suicide than men (93.6 versus 47.9 per 100,000). Women have a higher hospitalization rate in every age group. The largest difference is between the ages of 25 and 44, where women are hospitalized for suicide attempts at more than twice the rate of men (177.6 versus 86.9 per 100,000).

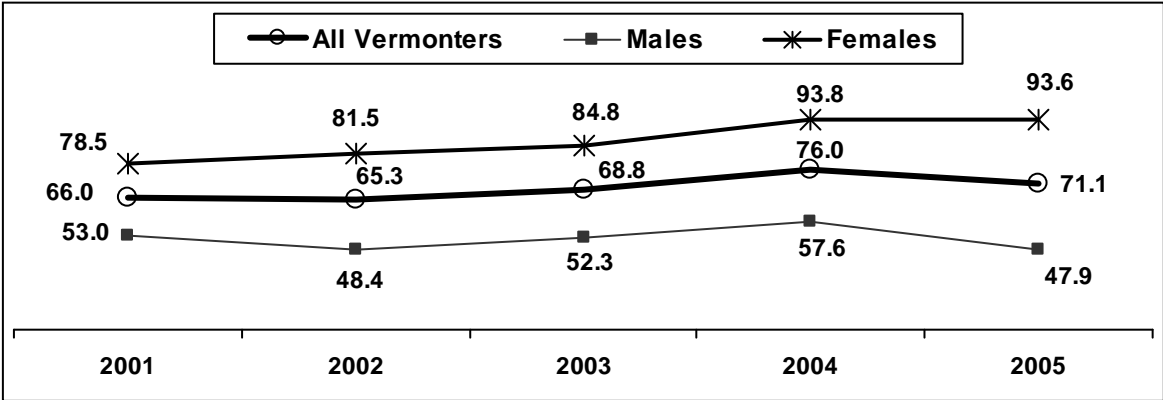
Figure 39. Attempted Suicide Hospitalization Rate per 100,000 by Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Since 2001, the rate of hospitalization for suicide attempts has risen among all Vermonters. In 2001, the overall rate for suicide attempts hospitalization was 66.0 per 100,000. The rate had risen to 71.1 per 100,000 in 2005. The highest rate in this time period was 76.0 per 100,000 in 2004.
- ❖ In 2001, 53.0 men for every 100,000 were hospitalized for attempted suicide. By 2005, that had dropped to 47.9 per 100,000. Women had a hospitalization rate of 78.5 in 2001, which increased to 93.6 per 100,000 in 2005.

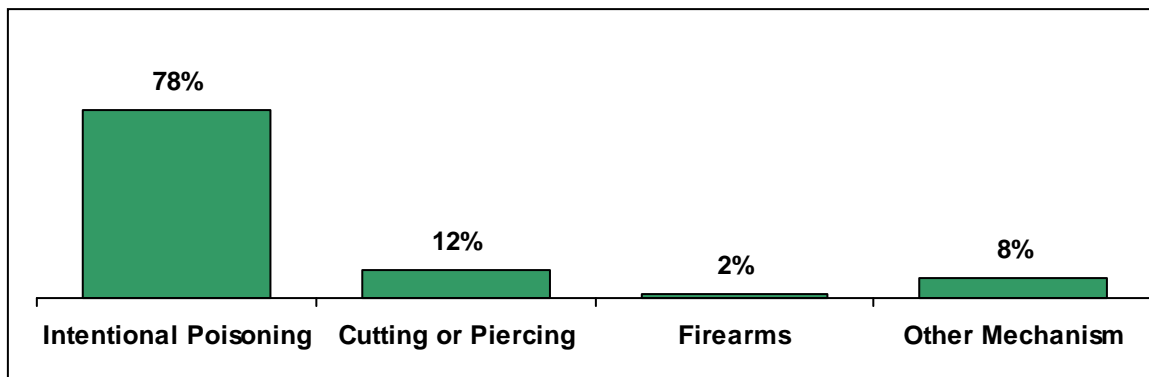
Figure 40. Attempted Suicide Hospitalization Rate per 100,000, Overall and by Gender, 2001 - 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ More than three out of four hospitalizations for attempted suicide were incidents of intentional poisoning (78%). The next most common suicide attempt method leading to hospitalization was cutting or piercing (12%). Firearms injury accounted for just 2% of the attempted suicide hospitalizations.

Figure 41. Mechanism for Attempted Suicide Hospitalization, 2001 – 2005, Combined

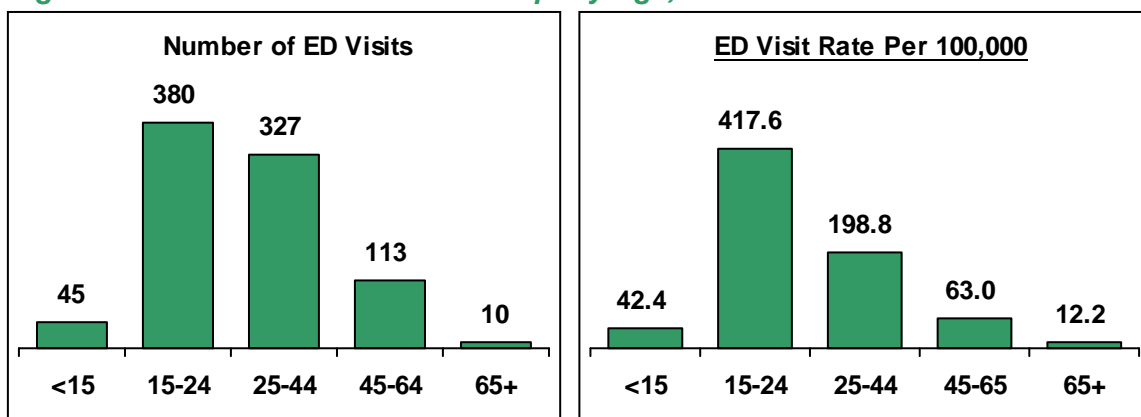


Source: Vermont Uniform Hospital Discharge Dataset

Attempted Suicide-Related Emergency Department Visits

- ❖ From 2003 to 2005, there were a total of 2,527 ED visits for self-inflicted injury in a suicide attempt (an average of 842 ED visits for a suicide attempt each year). Most suicide attempt ED visits are individuals between the ages of 15 and 44 and two-thirds are female.
- ❖ In 2005, there were 875 ED visits for a suicide attempt in Vermont, is a rate of 140.4 ED visits per 100,000 Vermonters. The U.S. rate of ED visits for suicide attempts is half that of Vermont's, at 73.6 per 100,000. The largest proportion of ED visits in Vermont due to attempted suicide occurred among persons between the ages of 15 and 24 (380) and among those between the ages of 25 and 44 (327).
- ❖ In 2005, the rate of attempted suicide ED visits is lowest in Vermont's oldest population – those 65 years of age and older (12.2 per 100,000). Those between 15 and 24 have the highest rate at 417.6 per 100,000. The next highest rate age group (those 25 to 44) have a ED visit rate less than half that, at 198.8 per 100,000. Vermont's youngest population (those under 15 years of age) has a rate of 42.4 ED visits for attempted suicide per 100,000 youth.

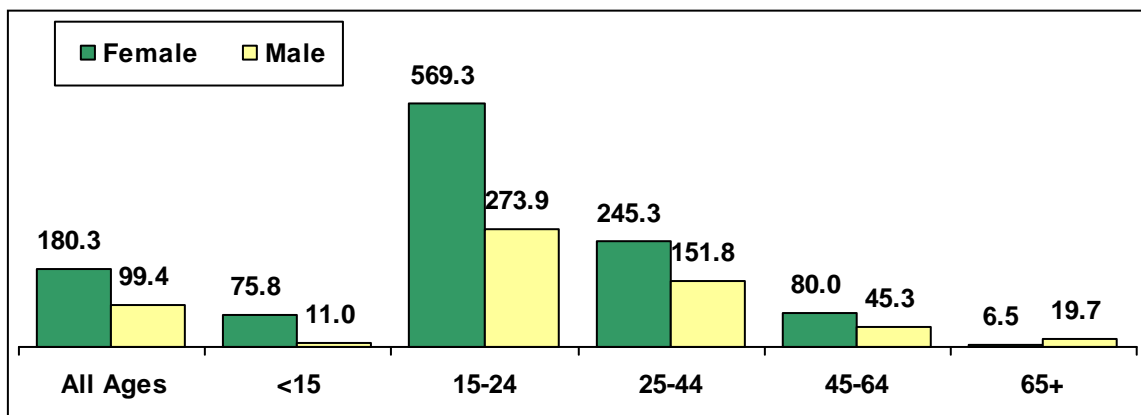
Figure 42. ED Visits for Suicide Attempt by Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ The pattern for suicide attempts treated in the emergency department is similar to that for suicide attempts that result in hospitalization. Overall, women have a higher rate of ED visits for attempted suicide than men (180.3 versus 99.4 per 100,000). Women have a higher suicide hospitalization rate in every age group – except seniors (65 and older). Among young adults – those between the ages of 15 and 24 – females have twice the rate of ED visits for suicide attempts that males do (569.3 versus 273.9 per 100,000).
- ❖ In the oldest age groups, men have a rate three times higher for ED visits for suicide attempts than women (6.5 for women versus 19.7 for men (per 100,000)).

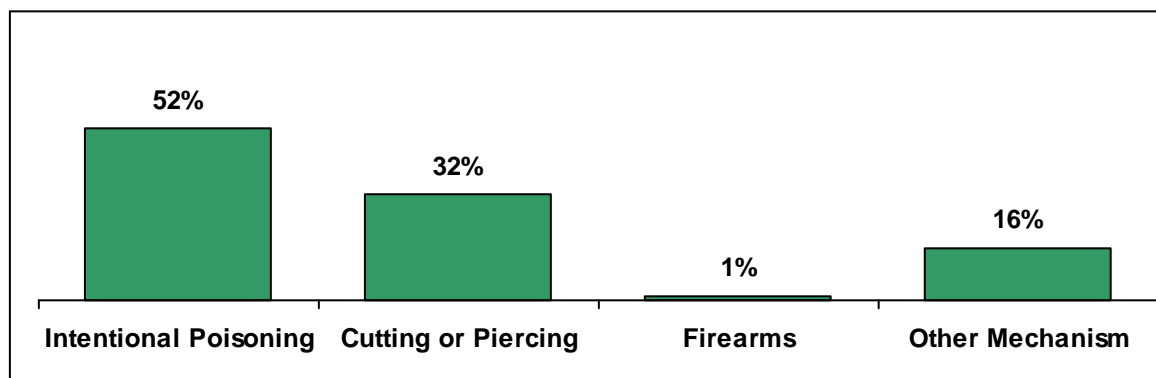
Figure 43. Attempted Suicide ED Visit Rate per 100,000 by Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Half of the ED visits due to attempted suicide were incidents of intentional poisoning (52%). One-third of the incidents were caused by cutting or piercing (32%). Firearms account for just 1% of the attempted suicide ED visits.

Figure 44. Mechanism for Attempted Suicide ED Visits, 2003 – 2005, Combined



Source: Vermont Uniform Hospital Discharge Dataset

Other Suicide-Related Data

- ❖ Five percent of Vermont adults indicate they have considered attempting suicide (5%), according to the 2005 BRFSS. Overall, two percent have actually attempted suicide (2%).
- ❖ In 2005, the Youth Risk Behavior Survey indicated that one-fifth of 8th through 12th graders felt sad or hopeless (22%) and half as many had made a suicide plan (11%). Six percent report they actually attempted suicide (6%) and two percent made a suicide attempt that required medical treatment (2%).
- ❖ Female students were more likely than male students to make a suicide plan (15% versus 8%) and actually attempt suicide (9% versus 4%).

Healthy Vermonters 2010

Reduce suicide attempts (that require medical attention) by youth in grades 9-12

	Percent
Goal:	1%
VT 2001	2%
VT 2005	2%

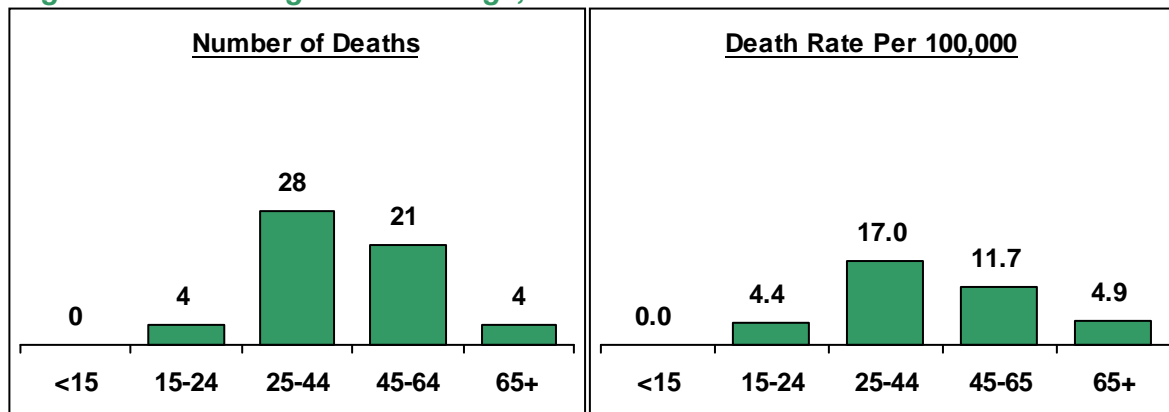
Poisoning

Poisoning is among the five leading causes of injury death among Vermonters (16% of all injury deaths) and one of the five leading causes of injury hospitalizations (12%). It is not one of the five leading causes of injury-related emergency department visits. Vermont has a similar rate of unintentional poisoning deaths to the U.S. as a whole (9.2 per 100,000 compared to 9.7 per 100,000 in the U.S.). Hospitalizations for poisoning are significantly lower in Vermont when compared to the nation (86.3 per 100,000 compared to 113.1 per 100,000, U.S.). As for ED visits, in 2005, Vermont's rate is similar to the U.S. rate (202.1 per 100,000 compared to 202.7 per 100,000, U.S.).

Poisoning Deaths

- ❖ In the years 2001 to 2005, there were a total of 284 deaths attributed to poisoning in Vermont (average of 57 per year). Nearly all poisoning deaths occurred to individuals between the ages of 25 and 64 and two-thirds of the poisoning deaths were men. The Vermont rate for poisoning death was 9.2 per 100,000, compared to the national rate of 9.7 poisoning deaths per 100,000.
- ❖ In 2005, there were 57 poisonings in Vermont. More than four out of five of those poisonings were persons between the ages of 25 and 64. Vermonters between the ages of 25 and 44 have the highest rate of death from poisoning (17.0 per 100,000), while those between ages 45 and 64 have a rate of 11.7 per 100,000. There were no poisoning deaths among Vermont youth (younger than 15).

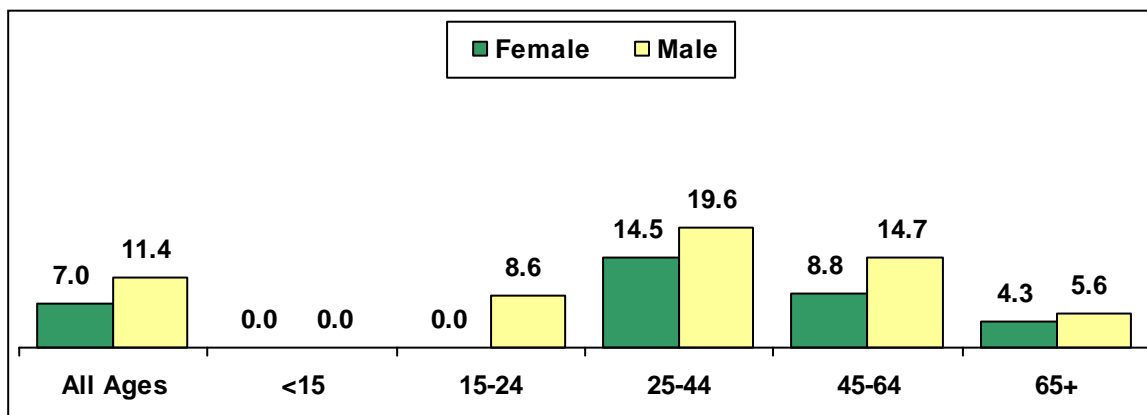
Figure 45. Poisoning Death and Age, 2005



Source: Vermont Vital Statistics

- ❖ Vermont males have a higher poisoning death rate than females (11.4 per 100,000 versus 7.0 per 100,000). This difference is largest for men and women of ages 45 to 64. In this age group, men have a poisoning death rate nearly twice that of women (14.7 per 100,000 for men; 8.8 per 100,000 for women).

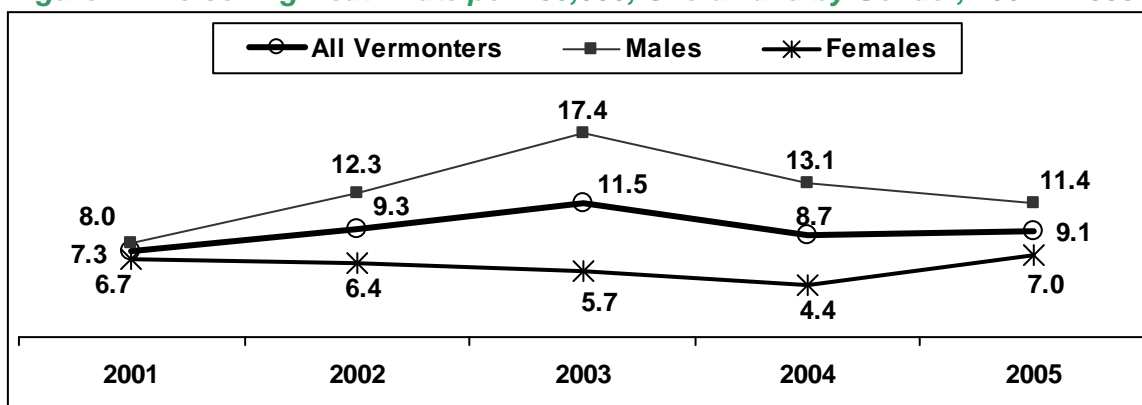
Figure 46. Poisoning Death Rate per 100,000 by Gender and Age, 2005



Source: Vermont Vital Statistics

- ❖ In 2001, the overall rate for poisoning death was 7.3 per 100,000, but had risen slightly to 9.1 per 100,000 by 2005. The highest poisoning rate in that time period was in 2003, when there were 11.5 poisoning deaths for every 100,000 Vermonters.
- ❖ Exactly 8.0 men for every 100,000 died from poisoning in 2001. By 2005, that number was 11.4 per 100,000. In 2003, men experienced their highest rate of poisoning death during this time frame, with 17.4 per 100,000.
- ❖ In 2001, 6.7 women per 100,000 died from poisoning. This has remained relatively stable through 2005 (7.0 women per 100,000).

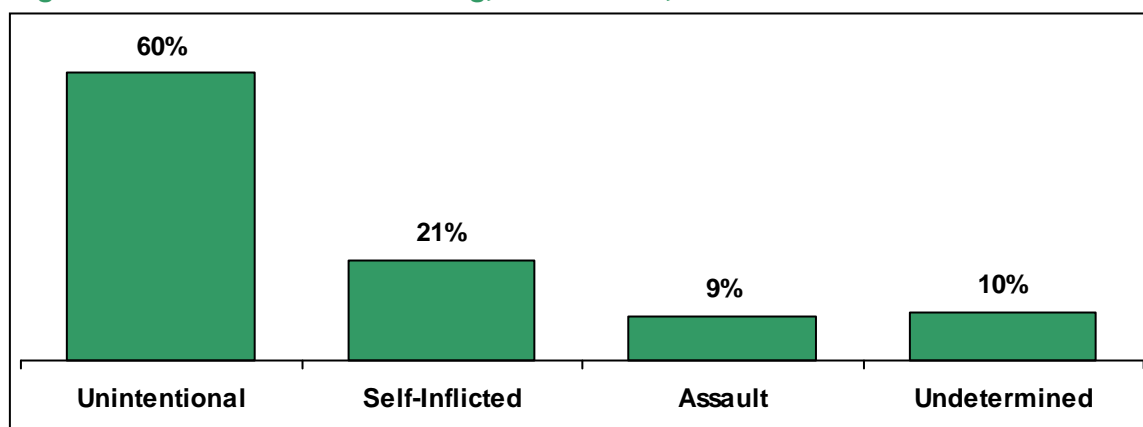
Figure 47. Poisoning Death Rate per 100,000, Overall and by Gender, 2001 – 2005



Source: Vermont Vital Statistics

- ❖ Overall, three out of five poisoning deaths are considered unintentional (60%), one in five are intentional (i.e., suicide) (21%), and one in ten are assault (homicide) (9%). No intention can be determined for 10% of the poisoning deaths.

Figure 48. Intention for Poisoning, 2001 – 2005, Combined

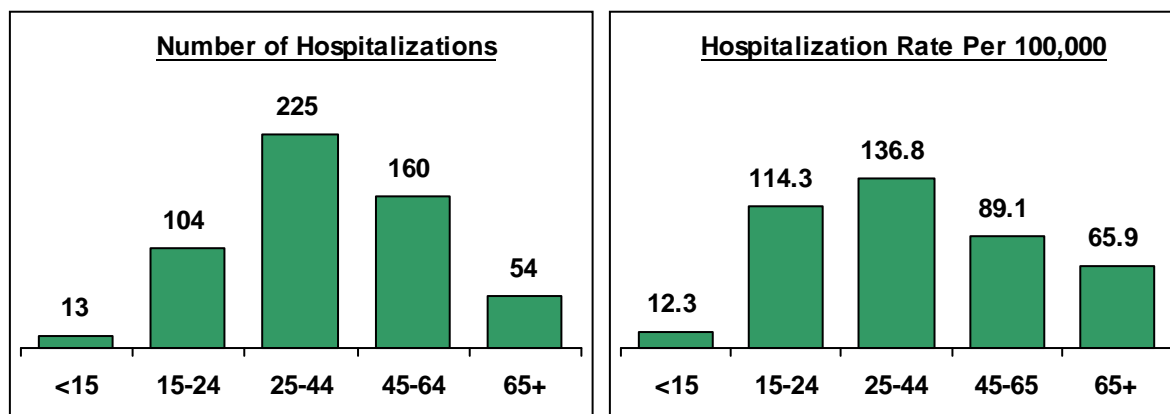


Source: Vermont Vital Statistics

Poisoning-Related Hospitalizations

- ❖ In the years 2001 to 2005, there were a total of 2,668 hospitalizations due to poisoning (an average of 534 per year). Most poisoning hospitalizations are individuals between the ages of 25 and 44. Also, nearly two-thirds of the hospitalizations are female.
- ❖ In Vermont from 2001 to 2005 the poisoning-related hospitalization rate was 86.3 per 100,000, which is significantly lower than the national rate of 113.1 per 100,000 hospitalizations for poisoning.
- ❖ In 2005, there were 556 hospitalizations due to poisoning in Vermont, resulting in a rate of 89.2 per 100,000 Vermonters. The largest proportion of poisonings resulting in hospitalization occurred among persons age 25 to 44 (41%), followed by 45 to 64 (29%) and 15 to 24 (19%).
- ❖ Also in 2005, Vermonters ages 25 to 44 had the highest rate of poisoning (136.8 per 100,000). Slightly younger Vermonters (ages 15 to 24) also had a high rate of poisoning hospitalization (114.3 per 100,000). These are the highest rates of any age group.

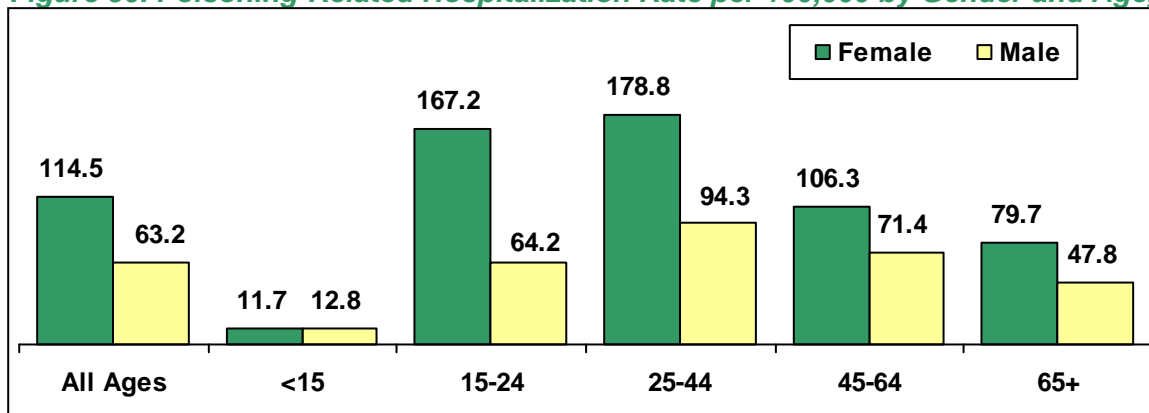
Figure 49. Poisoning-Related Hospitalization by Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ In 2005, women had a higher rate of hospitalization for poisoning than men (114.5 versus 63.2 per 100,000). In the youngest Vermonters (younger than 15) males and females have a similar poisoning hospitalization rate (11.7 per 100,000 among girls; 12.8 per 100,000 for boys).
- ❖ In the next highest age group, 15 to 24 year olds, the hospitalization rate for women is more than two and a half times that of men (167.2 versus 64.2 per 100,000). Between the ages of 25 and 44 women are hospitalized for poisoning at nearly twice the rate of men (178.8 versus 94.3 per 100,000).
- ❖ In the next older age groups, the rates between men and women are closer, but women still have a higher rate of hospitalization. Among those 45 years of age and older, women are hospitalized at about one and a half times the rate of men.

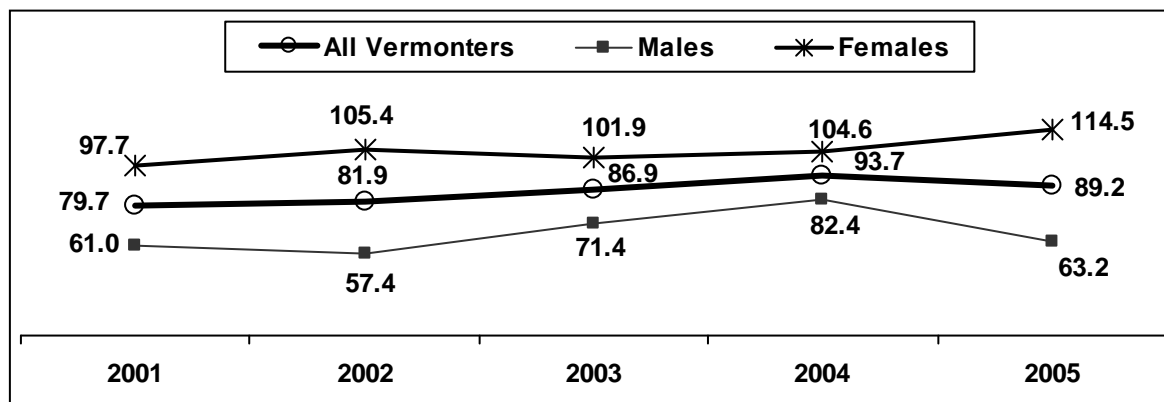
Figure 50. Poisoning-Related Hospitalization Rate per 100,000 by Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Since 2001, the rate of hospitalization for poisoning-related incidents has risen among all Vermonters. In 2001, the overall rate for poisoning hospitalization was 79.7 per 100,000, by 2005 the rate increased to 89.2 per 100,000.
- ❖ In 2001, 61.0 men for every 100,000 were hospitalized for poisoning. By 2004, that number had risen to 82.4 per 100,000. Interestingly, men saw a decline in their rate by 2005, back to a rate similar to 2001 (63.2 per 100,000).
- ❖ In 2001, women had a hospitalization rate of 97.7 per 100,000. By 2005, that rate has risen to 114.5 per 100,000.

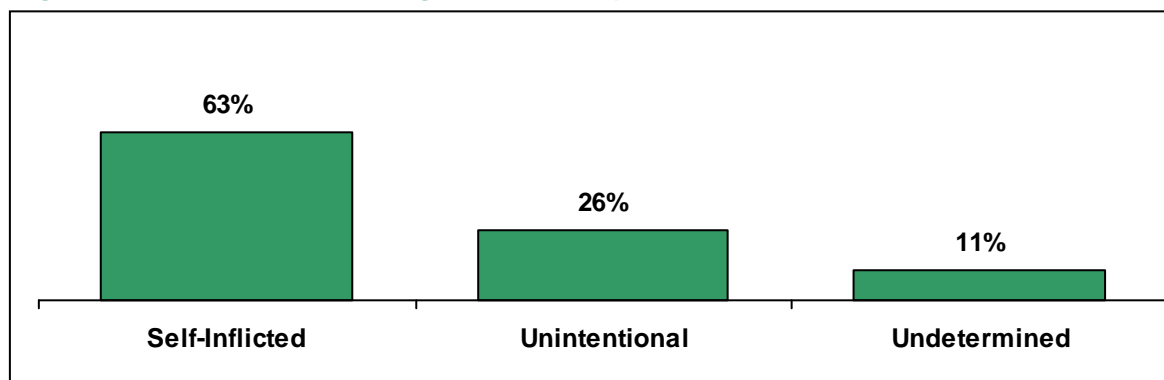
Figure 51. Poisoning Hospitalization Rates, Overall and by Gender, 2001 - 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Nearly two-thirds of the hospitalizations for poisoning are due to self-inflicted injury (i.e., suicide attempts) (63%). One-quarter of the poisoning hospitalizations are unintentional (26%) and another 11% are undetermined.
- ❖ As noted in the Suicide section, more than three-quarters of hospitalizations for suicide are due to self-inflicted poisoning (78%).

Figure 52. Intent for Poisoning-Related Hospitalization, 2001 – 2005, Combined



Source: Vermont Uniform Hospital Discharge Dataset

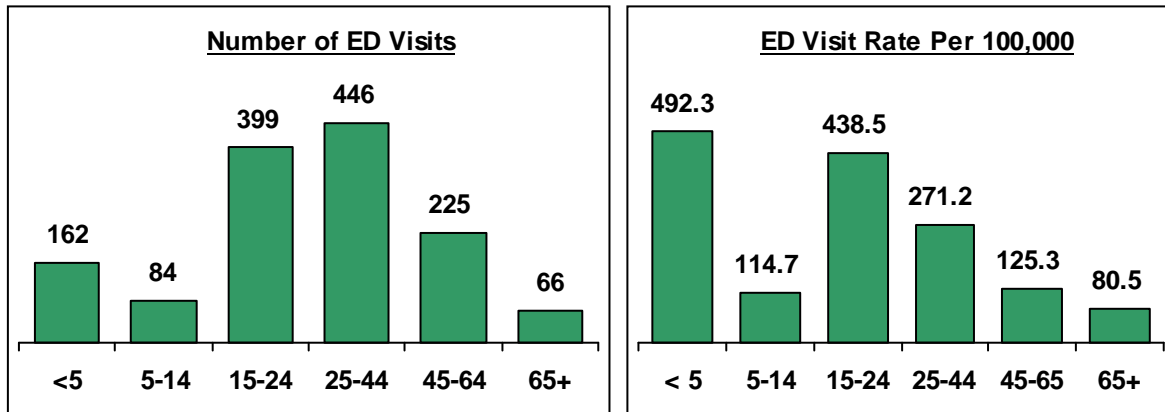
Poisoning-Related Emergency Department Visits

- ❖ From 2003 to 2005, there were a total of 3,875 ED visits for poisoning (an average of 1,292 per year). Most poisoning ED visits are individuals between the ages of 15 and 44 and over half are female. There are a significant number of poisoning ED visits among Vermonters younger than age five and those between the ages of 45 and 64.
- ❖ In 2005, there were 1,382 ED visits for poisoning in Vermont. This is a poisoning-related ED visit rate of 221.8 per 100,000 Vermonters. This is nearly identical to the U.S. rate of 202.7 per 100,000. The largest

proportion of ED visits from poisoning occurred among persons between the ages of 25 and 44 (271.2 per 100,000) and among those between the ages of 15 and 24 (438.5 per 100,000).

- ❖ The highest rates of poisoning ED visits are among Vermont's youngest population and among young adults. Vermonters under the age of five have a poisoning ED visit rate of 492.3 per 100,000. Young adults – those between 15 and 24 years of age – have a rate slightly lower (438.5 per 100,000). The rate of poisoning ED visits declines as age increases.

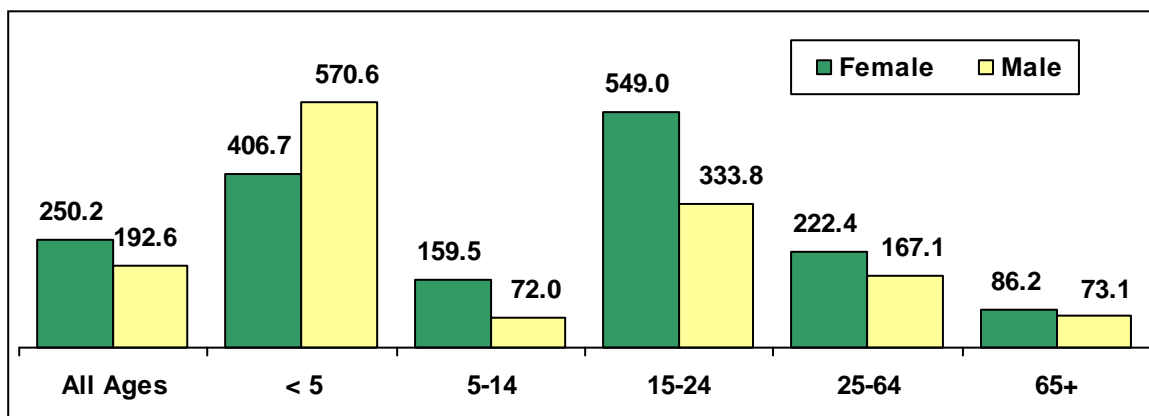
Figure 53. Poisoning-Related ED Visits by Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Overall, women have a higher rate of ED visits for poisoning than men (250.2 versus 192.6 per 100,000). In the youngest age group (younger than 5), boys have a higher rate of poisoning ED visits than girls (570.6 versus 406.7 per 100,000). In virtually every other age group women have a higher rate.
- ❖ The largest difference is among 15 to 24 year olds, where women visit the ED for poisoning at one-and-a-half times the rate of men (549.0 versus 333.8 per 100,000).

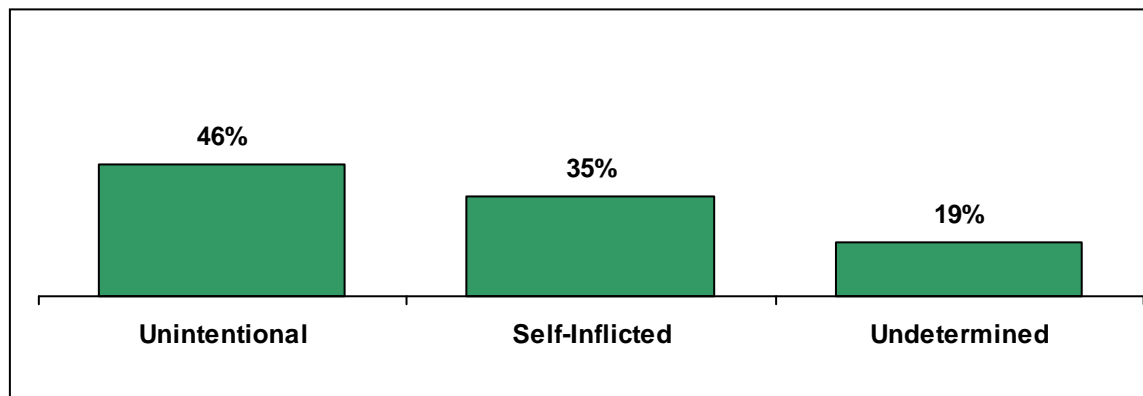
Figure 54. Poisoning-Related ED Visit Rate per 100,000 by Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Almost half of the ED visits due to poisoning were unintentional (46%) and more than one-third of the incidents were self-inflicted (35%). About one in five were of undetermined intent (19%).

Figure 55. Intent of Poisoning-Related ED Visits, 2003 – 2005, Combined



Source: Vermont Uniform Hospital Discharge Dataset

Traumatic Brain Injury

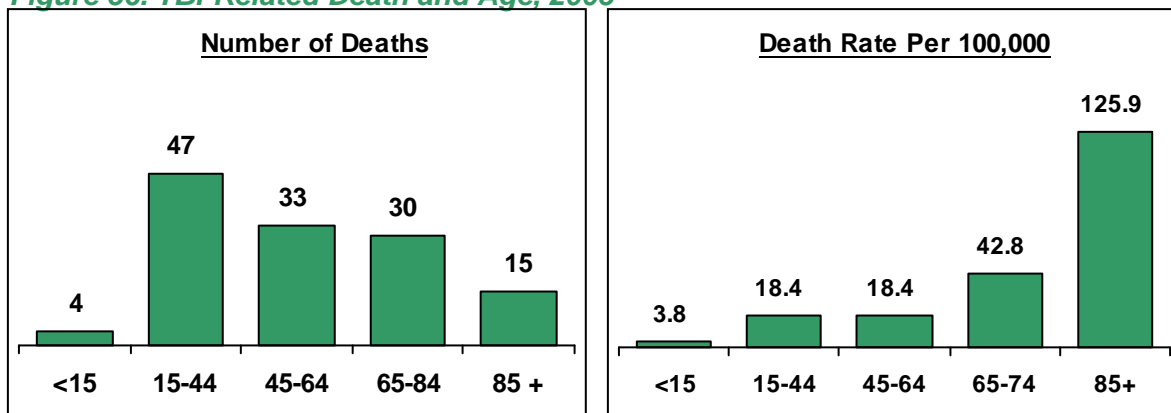
Traumatic Brain Injury (TBI) is not one of the five leading causes of injury death, hospitalization or ED visits among Vermonters. On average, there are 127 deaths related to TBI in Vermont each year. In 2005, Vermont's TBI-related death rate was 20.7 per 100,000 persons. The rate of TBI hospitalizations was 73.0 per 100,000 and the Vermont ED rate was 541.0 per 100,000.

National TBI numbers for 2005 are not yet available. The most recent national TBI rates for mortality, hospitalization and ED visits are from 2003. In 2003, the national rate of TBI-related death was 17.5 per 100,000, hospitalizations were at a rate of 99.9 per 100,000, and ED visits a rate of 420.9 per 100,000.

TBI-Related Deaths

- ❖ In the years 2001 to 2005, there were a total of 633 deaths attributed to TBI in Vermont (average of 127 per year). TBI deaths most commonly occur to young and mid-age adults (those between 15 and 44) and to Vermont's elders (65 and older). In contrast to poisoning and suicide, men are more likely than women to die of a TBI – nearly three out of four TBI deaths are male.
- ❖ In 2005, there were 129 TBI deaths in Vermont for an overall TBI-related death rate of 20.7 per 100,000 Vermonters. The largest proportion of those deaths occurred to persons between the ages of 15 and 44 (47 deaths), followed closely by those over the age of 65 (45 deaths).
- ❖ Vermont elders (65 and older) have the highest rate of TBI death (54.9 per 100,000); which is primarily driven by the rate of TBI death among the oldest Vermonters (85 years of age and older) whose rate is 125.9 per 100,000. Those between 15 and 44 have the highest absolute number of deaths, but their rate of TBI death is relatively low (18.4 per 100,000) because they are a large proportion of the population.

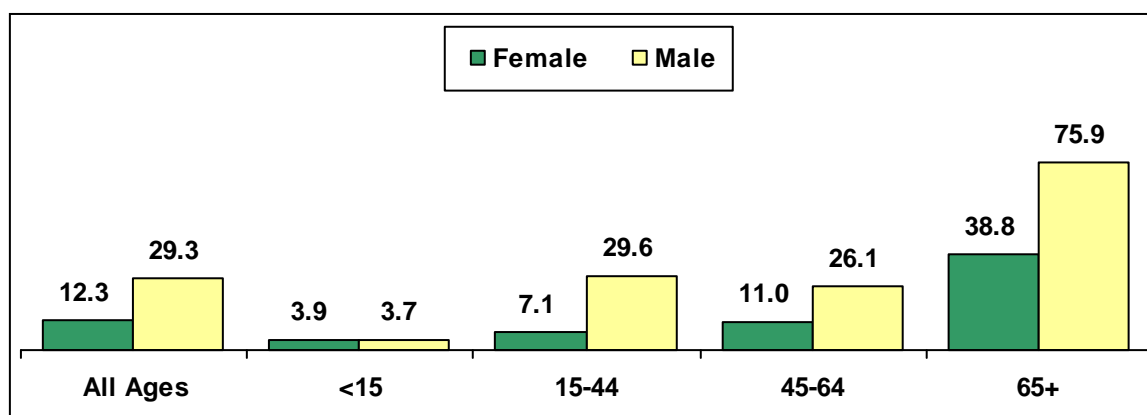
Figure 56. TBI-Related Death and Age, 2005



Source: Vermont Vital Statistics

- ❖ Vermont males have a TBI death rate more than two times the rate of females (29.3 versus 12.3 per 100,000 for females). Gender differences are most starkly noted in the rates of those 65 years of age and older, where men have a rate of 75.9 per 100,000, while women's rate is 38.8 per 100,000.

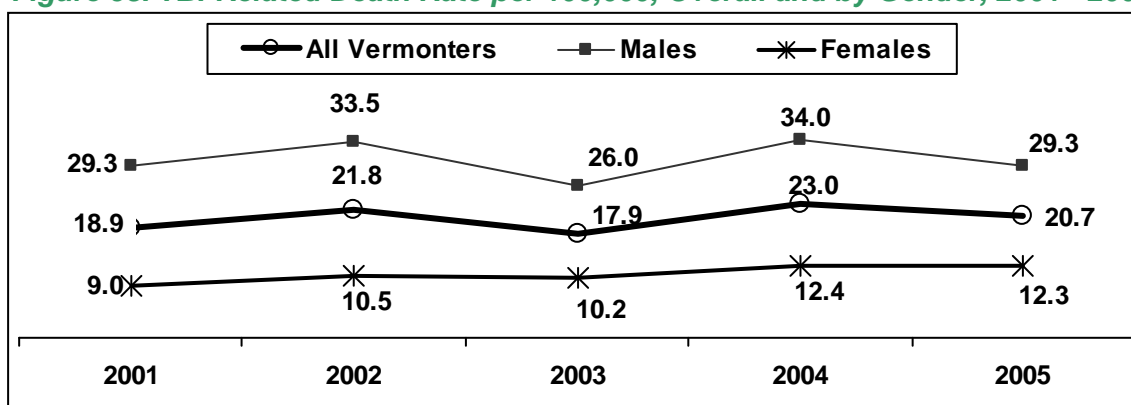
Figure 57. TBI-Related Death Rate per 100,000 by Gender and Age, 2005



Source: Vermont Vital Statistics

- ❖ Since 2001, the TBI mortality rate for all Vermonters has remained relatively stable. In 2001, the overall rate for TBI death was 18.9 per 100,000 and rose slightly by 2005 to 20.7 per 100,000. The lowest TBI death rate in that time period was in 2003, when there 17.9 deaths for every 100,000 Vermonters.
- ❖ Men follow a similar pattern, with slightly higher rates. In 2001, 29.3 men for every 100,000 died from a TBI. In 2005, that number was 29.3 per 100,000. In 2003, men experienced their lowest rate of TBI death during this time frame, with 26.0 per 100,000 dying of a TBI.
- ❖ Women's TBI mortality rates have stayed relatively consistent and a lower death rate than the statewide or male rate of TBI death. In 2001, 9.0 women in 100,000 died from TBI. In 2005, that number was 12.3 women per 100,000.

Figure 58. TBI-Related Death Rate per 100,000, Overall and by Gender, 2001 - 2005

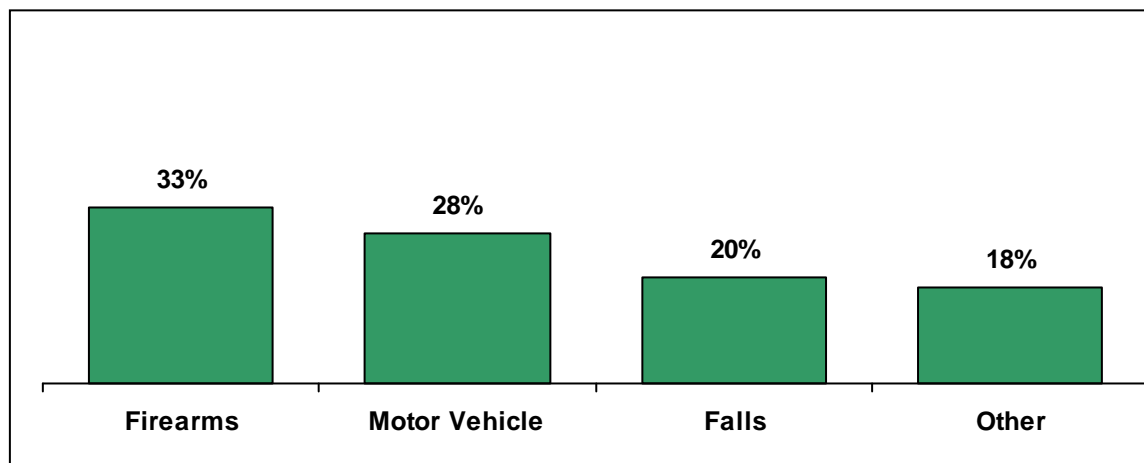


Source: Vermont Vital Statistics

- ❖ Overall, a third of TBI deaths are caused by a firearm (33%). Of the firearm-related TBI deaths, nearly all are suicides (90%). Motor vehicles cause about one-quarter of fatal TBIs (28%) and one-fifth (20%) are caused by a fall. Five percent or fewer TBI deaths are attributed to either assault (5%) or being struck by something, unintentionally (2%).

- ❖ Among the eldest Vermonters, falls are the most frequent cause of TBI death. Among those 85 years of age and older, falls account for a majority of TBI deaths (61%).

Figure 59. TBI-Related Death Mechanism, 2001 – 2005, Combined

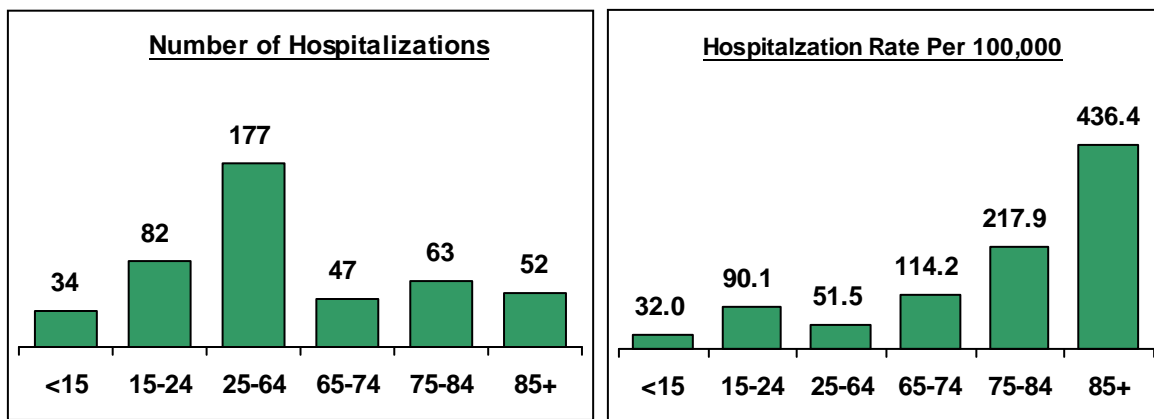


Source: Vermont Vital Statistics

TBI-Related Hospitalizations

- ❖ In the years 2001 to 2005, Vermonters experienced 1,948 hospitalizations due to a TBI (average of 390 per year). Older age groups have the highest rates of TBI hospitalizations, despite the fact that the highest absolute number of TBI hospitalizations occurs among those between the ages of 25 and 64. Nearly two-thirds of the hospitalizations occur among men.
- ❖ In 2005, there were 455 hospitalizations for TBI in Vermont. The largest number was among persons under 65 years of age (293). As noted above, Vermont's eldest population experiences the highest rates of TBI hospitalization. The age group with the most TBI hospitalizations (25 to 64 year olds with 177 hospitalizations) has the second-lowest rate (51.5 per 100,000).
- ❖ Vermont elders (65 and older) have a TBI hospitalization rate of (197.6 per 100,000). Between the ages of 65 and 74, the rate is 114.2 per 100,000 and it increases to nearly four times that rate for those 85 years of age and older (436.4 per 100,000).

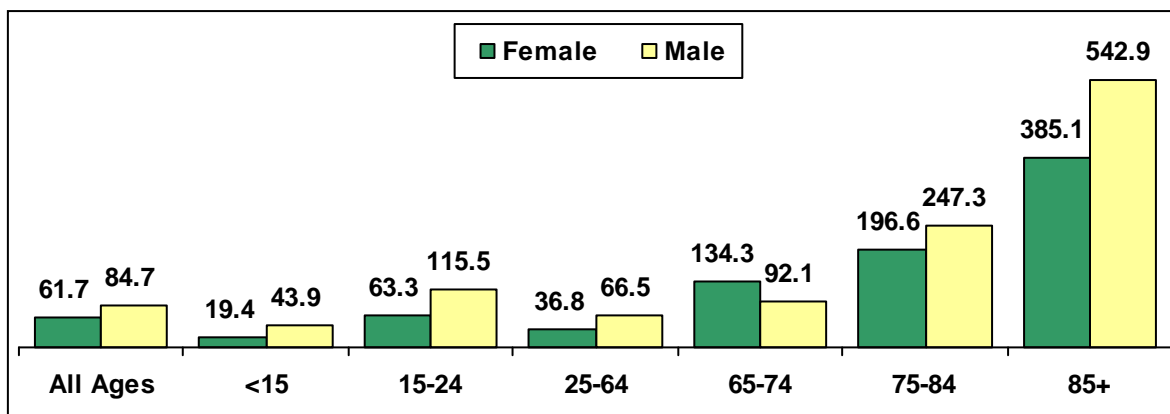
Figure 60. TBI-Related Hospitalizations and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Vermont males have a TBI-related hospitalization rate higher than the female rate (84.7 per 100,000 versus 61.7 per 100,000 for females). Men have a higher rate in nearly every age category, except for those 65 to 74 years of age. In this age group, women have a higher rate of TBI-related hospitalization (134.3 versus 92.1 per 100,000).
- ❖ The elderly TBI-related hospitalization rates is being driven by men age 85 and older. Men over age 85 have a TBI-related hospitalization rate more of 542.9, one and a half times that of the eldest women, whose rate is 385.1 per 100,000.

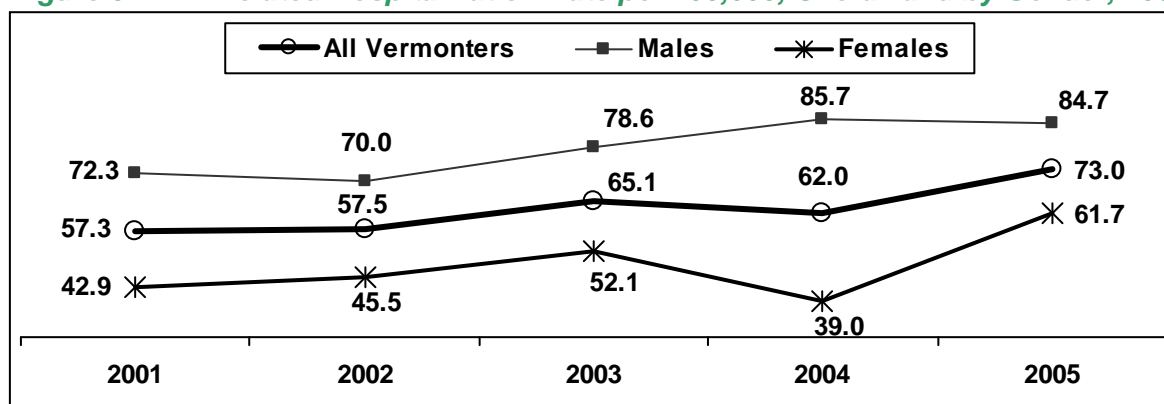
Figure 61. TBI-Related Hospitalization Rate per 100,000 by Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Since 2001, the hospitalization rate for TBI among all Vermonters has risen slightly – from 57.3 per 100,000 in 2001 to 73.0 per 100,000 in 2004. Overall, the men’s rate for TBI hospitalization has remained slightly higher, while the women’s rate has remained slightly lower.

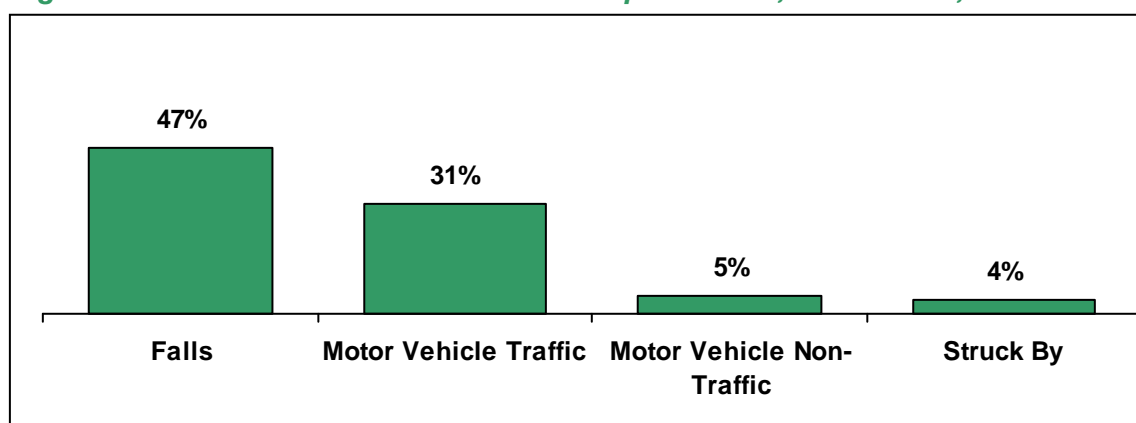
Figure 62. TBI-Related Hospitalization Rate per 100,000, Overall and by Gender, 2001—2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Nearly half of TBI-related hospitalizations are caused by a fall (47%); over one-third are motor vehicle injuries (traffic 31%, non-traffic 5%). Non-traffic injuries are those sustained on a snowmobile or ATV. Other causes of TBI injuries are fairly small: struck by an object (4%), assault (3%), bicycle accidents (2%), and firearms (1%).

Figure 63. Mechanisms for TBI-Related Hospitalization, 2001 – 2005, Combined



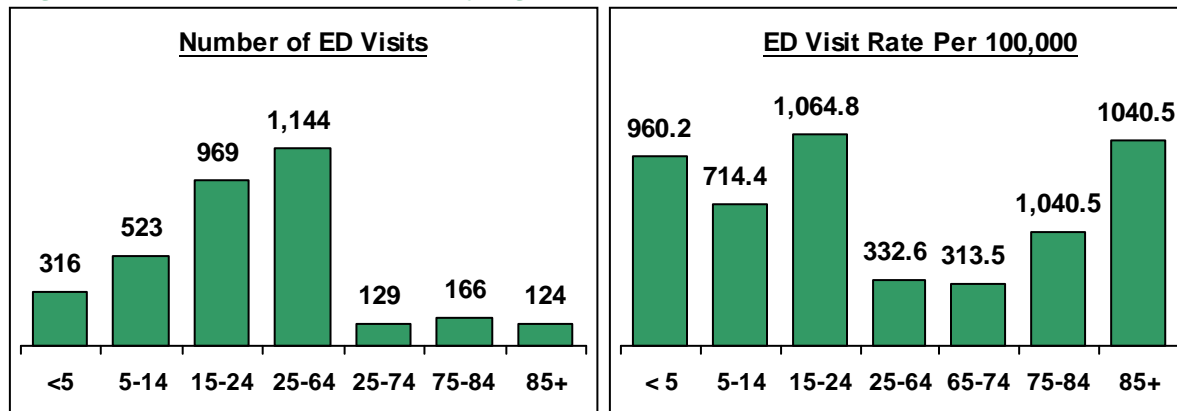
Source: Vermont Uniform Hospital Discharge Dataset

TBI-Related Emergency Department Visits

- ❖ Between 2003 and 2005, there were a total of 9,258 ED visits for TBI-related injury – an average of 3,086 per year. A majority of the TBI ED visits are men and the largest number of TBI ED visits is among those between 15 and 24 years of age.
- ❖ In 2005, there were 3,371 ED visits for TBI-related injury in Vermont. The largest proportion of ED visits due to TBI occurred among persons between the ages of 15 and 24 (969) and the ages of 25 and 44 (654).

- ❖ Infants and preschoolers (younger than five) have a TBI-related ED visit rate of 960.2 per 100,000. Young adults – those between 15 and 24 years of age – have the highest rate at 1,064.8 per 100,000. The eldest Vermonters (those 85 and older) have a similarly high TBI ED visit rate of 1,040.5 per 100,000.

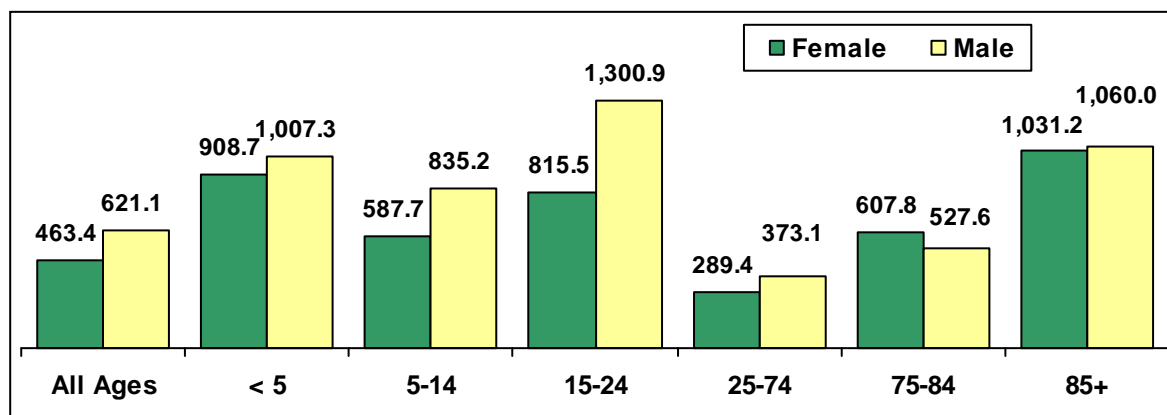
Figure 64. TBI-Related ED Visit by Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Overall, men have a higher rate of ED visits for TBI-related injury than women (621.1 per 100,000, compared to 463.4 per 100,000 among females). The largest disparities between males and females are seen in young adults. Between the ages of 15 and 24, males have a TBI ED visit rate that is one and a half times that of the female rate (1,300.9 per 100,000 for males versus 815.5 per 100,000 for females).

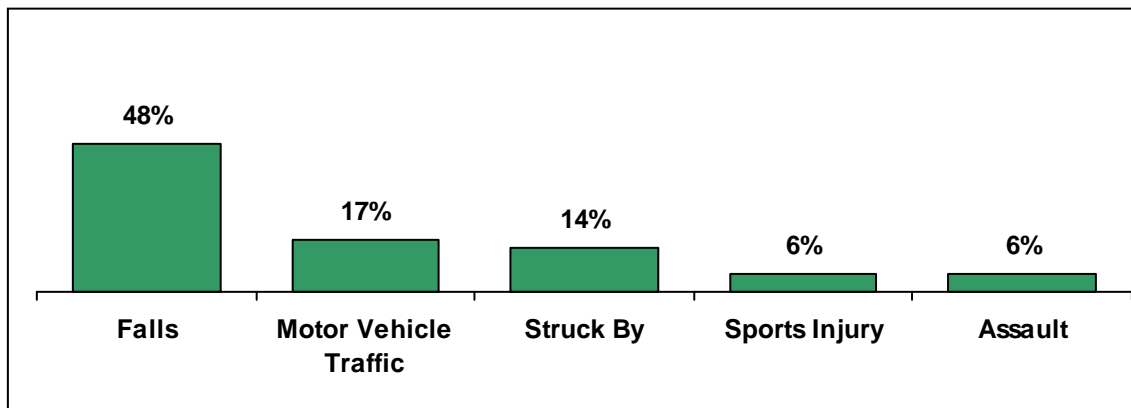
Figure 65. TBI-Related ED Visit Rate per 100,000, By Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Nearly half of the TBI-related ED visits are due to falls (48%). One in six ED visits for TBI is due to a motor vehicle traffic accident (17%), followed closely by being struck by an object unintentionally (14%). Sports injury and assault each account for 6% of TBI-related ED visits. Other TBI injury causes account for less than five percent of all ED visits (2% for bicycle injury and 3% for non-traffic motor vehicle injury).

Figure 66. Mechanism for TBI ED Visits, 2003 – 2005, Combined



Source: Vermont Uniform Hospital Discharge Dataset

Healthy Vermonters 2010

Reduce residential fire deaths

	Rate per 100,000
Goal:	0.2
VT 2000	3.0
VT 2005	1.3

Fire-Related Injury

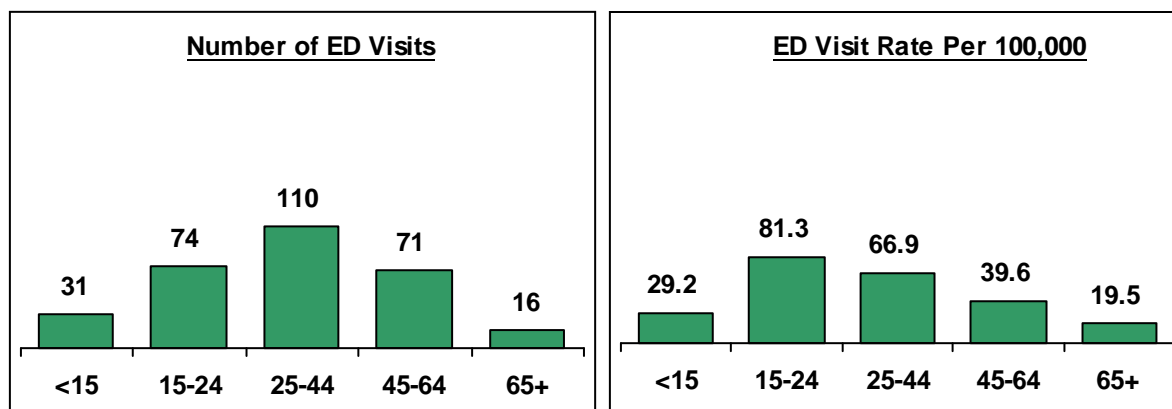
There were 26 deaths due to fire in Vermont between 2001 and 2005. Fires are not one of the five leading causes of injury death among Vermonters. Hospitalizations and ED visits also show relatively low numbers – there have been 170 hospitalizations in those five years and 997 ED visits (between 2003 and 2005) for fire-related injury.

Across the U.S., fire-related injury death occurs at a rate of 1.2 per 100,000 persons, compared to Vermont's rate of 1.3 per 100,000. Nationally, hospitalizations occur at a rate of 5.9 per 100,000, in Vermont the rate is 5.0 per 100,000. The national rate for ED visits is 148.0 per 100,000, which is nearly three times the rate of Vermont ED visits for fire-related injury (48.5 per 100,000).

Fire Related Deaths, Hospitalizations, and Emergency Department Visits

- ❖ Between 2001 and 2005, there were 26 deaths due to fires in Vermont – nearly evenly divided among men (12) and women (14). With this few fire injury deaths, comparisons of age groups, years and genders is not statistically reliable. Therefore, subgroup analysis has been excluded from this report.
- ❖ Hospitalizations for fire injury also show relatively low numbers in Vermont (170). Between 2001 and 2005, more than two-thirds of these hospitalizations were male (68%). As with fire-related deaths, more detailed analysis of hospitalizations by age, gender and year is unreliable and, therefore, not reported.
- ❖ From 2003 to 2005, there were a total of 997 ED visits for fire-related injury. Young adults (those between 15 and 24) and adults between the ages of 25 and 44 have the most incidents of ED visits for fire-related injury. Nearly three-quarters of the ED visits for fire injuries are male (71%).
- ❖ In 2005, there were 302 ED visits for fire-related injuries in Vermont. The largest number of ED visits due to fire-related injury is among persons 25 to 44 (110), followed by ages 15 to 24 (74).
- ❖ The highest rate of fire-related ED visits is among Vermont's young adults ages 15-24 (81.3 visits per 100,000). The rate declines as the population ages.

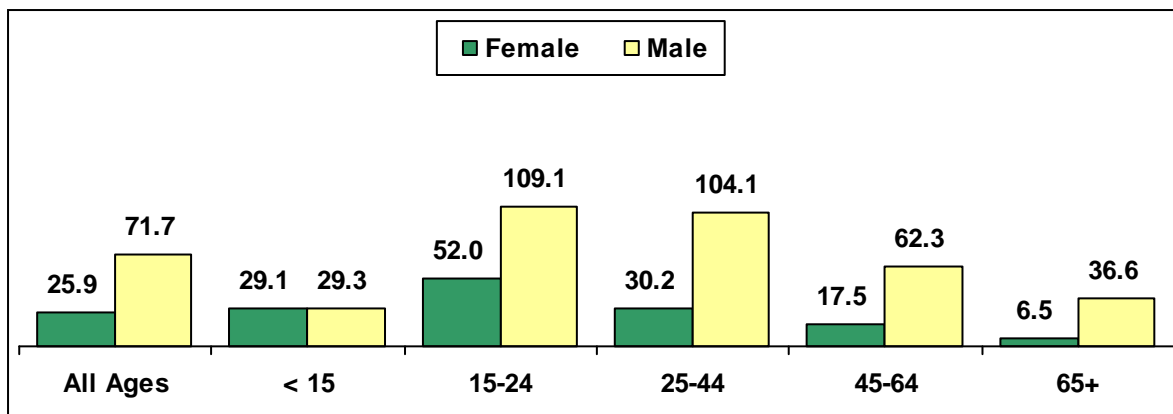
Figure 67. Fire-Related Injury ED Visits by Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

- ❖ Men have a consistently higher rate of ED visits for fire-related injury than women. Overall, the male rate of ED visits for fire-related injury is nearly three times that of females – at 71.7 per 100,000, compared to 25.9 per 100,000 among females. The largest disparities between males and females are seen in adults ages 25 to 44 – where men have a rate nearly three and a half times that of women (104.1 versus 30.2 per 100,000).
- ❖ Between the ages of 15 and 24, males have a fire-related ED visit rate that is more than double the rate of females (109.1 versus 52.0 per 100,000). Vermonters between the ages of 45 and 64 also have a wide gender disparity – men have nearly four times the rate of ED visits for fire injury than women (62.3 versus 17.5 per 100,000 for females).

Figure 68. Fire-Related Injury ED Visit Rate per 100,000 by Gender and Age, 2005



Source: Vermont Uniform Hospital Discharge Dataset

Data Sources

Behavioral Risk Factor Surveillance System (BRFSS): Since 1990, Vermont and 49 other states and three territories have tracked risk behaviors using a telephone survey of adults (age 18+) called the Behavioral Risk Factor Survey. These data are self-reported and therefore may differ from information obtained from records of health-care providers. The sample is also limited to non-institutionalized adults with telephones. Because there is variation in the content of the questionnaire between states, U.S. estimates, in some cases, may represent a subset of all states.

Healthcare Cost and Utilization Project (HCUP): HCUP is a Federal-State-industry partnership to build a standardized, multi-state health data system and companion set of complementary resources. HCUP databases are a family of longitudinal, administrative databases—including state specific hospital-discharge databases and a national sample of discharges from community hospitals. (See Vermont Uniform Hospital Discharge Data Set.)

Pregnancy Risk Assessment Monitoring System (PRAMS): Developed in 1987, the Pregnancy Risk Assessment Monitoring System is a survey designed to supplement vital records data by providing state-specific data on maternal behaviors and experiences before, during and after birth. Data collection began in Vermont in 2001, and 39 states currently participate in this initiative of the Centers for Disease Control and Prevention (CDC). Approximately 1 out of 5 Vermont resident mothers are randomly selected to participate between 2 and 6 months after having a live birth. Each month, the PRAMS survey is administered primarily by mail, and 10 percent are done by telephone.

Vermont Emergency Department Data: Vermont data is reported for Vermont residents who were seen in an emergency department in Vermont or New Hampshire. Vermonters who were admitted to the hospital via the emergency department were excluded from the emergency department data in this report; those cases are considered in the hospitalization data. National comparisons for Vermont ED data come from WISQARS. (See also Vermont Uniform Hospital Discharge Data Set, and WISQARS).

Vermont Governor's Highway Safety Program Data: The Governor's Highway Safety Program provides data on alcohol-related motor vehicle crash deaths, and facilitates and supports, with federal grants, a statewide network to promote safe driving behavior on the highways.

Vermont Uniform Hospital Discharge Data Set: Vermont's acute care hospitals participate in the hospital data system. Records relating to Vermont residents are obtained from Massachusetts, New Hampshire and New York hospitals for a more accurate picture of Vermonter's hospitalizations. The Veterans Administration provides discharge records from the VA hospital in White River Junction. Hospitalization data is drawn from administrative databases focused on the diagnoses, procedures and charges associated with each hospitalization. Vermont and national data for comparison purposes are available through the Healthcare Cost and Utilization Project (HCUP) maintained by the Agency for Healthcare Research and quality (AHRQ). (See Above.)

Vermont Vital Statistics: In Vermont, towns are required to file certified copies of death certificates with the Department of Health for all deaths occurring in their jurisdictions. In addition, the Health Department also receives information regarding out of state deaths for Vermont residents. The Health Department is responsible for maintaining the vital statistics system.

U.S. Public Use Database Vital Statistical System: The U.S. Public Use Database Vital Statistical System maintains the U.S. mortality rates. Rates presented in this report are for the U.S. white population and were obtained using CDC Wonder or Surveillance, Epidemiology and End Results (SEER) Program.

WISQARS: WISQARS is the National Center for Injury Control Web-based Injury Statistics Query and Reporting System. WISQARS is an interactive database system that provides customized reports of injury-related data. In this report WISQARS is used for producing the national ED data.

Youth Risk Behavior Survey (YRBS): The YRBS measures behaviors of students in grades 8 through 12 (for the purposes of Health Status Report only 9th-12th graders were used) on a variety of health and social issues. The survey has been conducted every two years since 1993 and is part of a national surveillance system.

Technical Notes and Definitions

Causal analysis: Data in this report may differ from data prepared for the Centers for Disease Control and Prevention Leading Indicators Report. This is due to the fact that the CDC Leading Indicators Report requires a strict definition of injury, utilizing only those records where the primary diagnosis is an injury code. This allows for comparisons across states. However, Vermont's Hospital Discharge Data allows for coding up to 19 secondary diagnosis fields, allowing for a broader view of hospitalizations and emergency department visits. Utilization of the primary and secondary diagnosis fields allows for a more complete analysis of the burden of injury in Vermont.

Cause of injury: Hospitalization and emergency department records include a summary of the circumstances causing the injury, including the intent (e.g., intentional and unintentional) and the mechanism (e.g., falls, motor vehicle crashes, firearms) of the injury. The ICD-9 CM system is used for hospitalization and emergency department data and the ICD-10 classification system is used for death data. Both systems were developed by the World Health Organization (WHO). (See also E-code and Intent of injury.)

Claims data: Emergency department visit and hospital discharge data is based on administrative data designed for billing purposes. The unit of analysis is the hospital or ED visit record (e.g. a person may be counted more than once for the same injury if he or she was re-admitted to the hospital or ED for the same injury).

Confidence Intervals: A confidence interval is a range of values within which the true rate is expected to fall. If the confidence intervals of two groups (such as males and females, or Vermont and the U.S.) overlap, then any difference between the two rates is not statistically significant. All rates in this report are calculated at a 95 percent confidence level.

E-code: "E-code" or External cause of injury code: The external underlying cause of injury is the way in which the person sustained the injury; how the person was injured; or the process by which the injury occurred. External causes for injuries are coded by hospital medical records staff according to the International Classification of Diseases, Ninth Edition, Clinical Modification (ICD-9-CM)

For mortality data, coding guidelines indicate the use of an external cause of injury as the underlying cause of death when the morbid condition is classifiable to an injury diagnosis. The underlying cause of death is defined as the mechanism which began events resulting in the ultimate cause of death or the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury.

Intent of injury: Intent of injury reflects the manner of injury (e.g. unintentional, intentional self-inflicted, assault, undetermined, or other). Unintentional injuries are unplanned. Intentional injuries result from purposeful human action (whether directed at oneself or others). Undetermined injuries are those that cannot be classified as unintentional, suicide, or assault. Other injuries are predominantly caused by legal intervention.

Mortality: Mortality refers to the number or rate of deaths from injury. The mortality data presented here were coded using the International Classification of Diseases (ICD).

Overexertion: Overexertion includes recreational as well as work-related injuries and is defined as “excessive physical exercise, overexertion from lifting, pulling and pushing; strenuous movements in recreational activities.”

Rates: All rates in this document are crude rates unless otherwise specified. Age-adjusted rates are standardized to the 2000 U.S. standard population. This allows the comparison of rates among populations having different age distributions by standardizing the age-specific rates in each population to one standard population.

Statistical Significance: The use of the terms “higher” and “lower” in this document refer to a “statistically significant” difference. A statistically significant difference indicates that there is statistical evidence that there is a difference that is unlikely to have occurred by chance alone.

Struck by: Injuries coded with a cause of “struck by” include: unintentional injuries from sports, crowds, furniture and running water *with no subsequent fall*. Struck by also includes assault injuries such as fight, brawl, rape or striking by a blunt or thrown object.

Acknowledgements

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The Vermont Injury Prevention Community Planning Group is a statewide partnership of individuals, professionals and organizations working together to reduce the impact of injury on Vermonters.