

Alcohol and Injury

Injury (intentional and unintentional) is a leading cause of mortality and morbidity in the United States.

Among 1-44 year olds, injury is the leading cause of death in the U.S.¹ In Virginia, in 2006, injury was the leading cause of death for 1-34 year olds.²

Alcohol use has been found to be associated with injury. It is estimated that 20-37 percent of all emergency room injury cases involve alcohol use and that 20-25 percent of all individuals hospitalized with an injury have an identifiable drinking problem or alcoholism.³

Alcohol's effect on a persons feel-

ings, perceptions, and physiology play an important role in injury. Consuming alcohol increase one's risk of being injured. Drinkers have a higher risk for injury than do non-drinkers. Also, given similar circumstances, the injuries of a drinker are likely to be more severe than those of a nondrinker.⁴

The amount of alcohol in a person's body is measured by the weight of the alcohol in a certain volume of blood. This is the blood alcohol concentration or "BAC". It can take just one drink for alcohol to be detectable in the blood stream.⁵

The following report examines injury

related deaths in which the decedent had a BAC of 0.01 or greater. Injury related deaths (Unintentional, Suicides, and Homicides) that occurred in the state of Virginia from 2004-2006 were included in the analysis. The data for this analysis was provided by the Virginia Office of the Chief Medical Examiner.⁶ Virginia survey data is also included to provide information on the use of alcohol in the state.

The purpose of this report is to examine the association between alcohol and injury. Further research is needed to examine a causative relationship between alcohol and injury.

What is "One" Drink?⁷

A standard drink contains approximately 0.6 fl oz (or approximately 12 g) alcohol and corresponds to the following beverage amounts:

- Y 12 ounce bottle or can of beer or wine cooler
- Y 8-9 ounce malt liquor
- Y 5 ounce glass of wine
- Y 1.5 ounces of 80-proof distilled spirits

National research studies have found alcohol to be a factor in:⁸

- Y 60-70% of homicides
- Y 40% of suicides
- Y 40-50% of fatal motor vehicle crashes
- Y 60% of fatal burn injuries
- Y 60% of drownings
- Y 40% of fatal falls

Factors that effect Blood Alcohol Concentration (BAC):⁹

- Y Gender
- Y Weight
- Y Body fat/type
- Y Food
- Y Other medications or drugs
- Y Rate of consumption
- Y Alcohol concentration of a drink

Alcohol Use in Virginia

Adult Alcohol Use

Over half of Virginia adults 18 and over use alcohol. A 2006 survey found that 52.4 percent of Virginia adults reported consuming alcohol within the past 30 days compared to 55.2 percent nationally. Virginians aged 45-54 (58.7 percent) were more likely to have had at least one drink in the last 30 days than any other age group. In 2005, 12.2 percent of Virginians reported binge drinking, compared to 14.4 percent nationally. Binge drinking was defined as consuming five or more drinks in one occasion for males and four or more drinks for females.¹⁰

Figure 1. Percent of Virginia Adults that Consumed Alcohol in the Last 30 Days

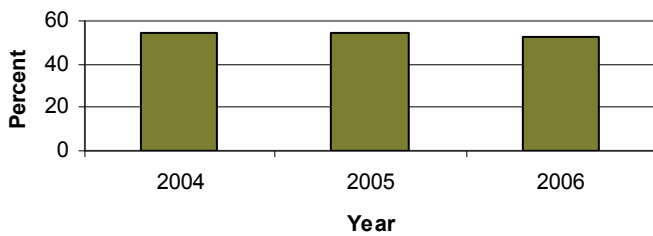


Figure 2. Percent of Virginia Adults that Consumed Alcohol Within the Past 30 Days, 2006

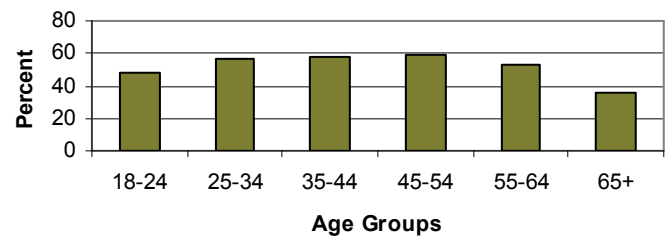


Figure 3. Virginia Adult Binge Alcohol Use Within the Past 30 Days

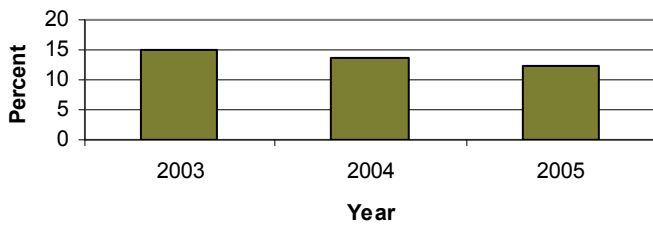
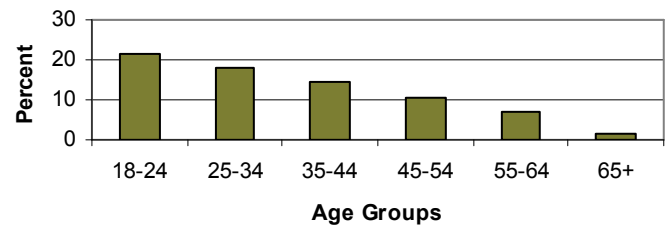


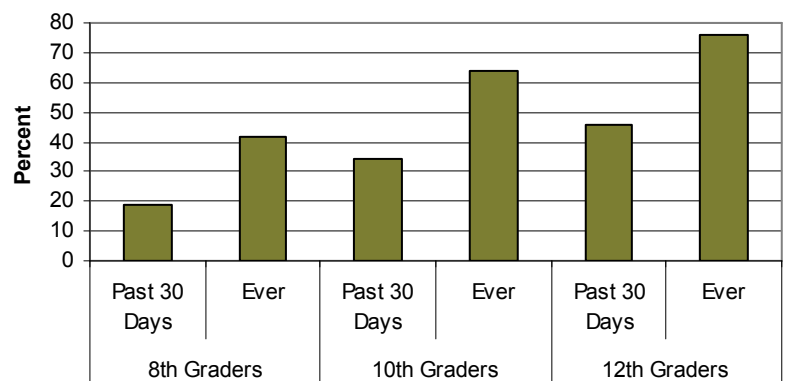
Figure 4. Virginia Adult Binge Alcohol Use Within the Past 30 Days, 2005



Youth Alcohol Use

The median age at which Virginia youth first have more than a sip or two of alcohol is 13 and the median age at which they begin to regularly consume alcohol (at least once or twice a month) is 15. In 2005, 18.9 percent of 8th graders, 34.5 percent of 10th graders, and 45.8 percent of 12th graders reported consuming alcohol within the past 30 days. During the same year, 41.7 percent of 8th graders, 63.6 percent of 10th graders, and 75.8 percent of 12th graders reported having consumed alcohol at some point during their lifetime.¹¹

Figure 5. Virginia Youth Alcohol Use by Grade Level, 2005



Alcohol Related Injury Deaths

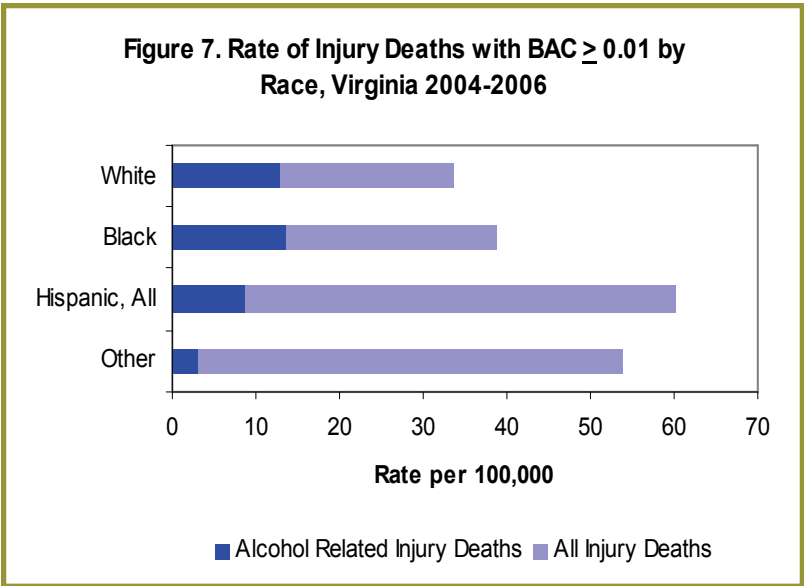
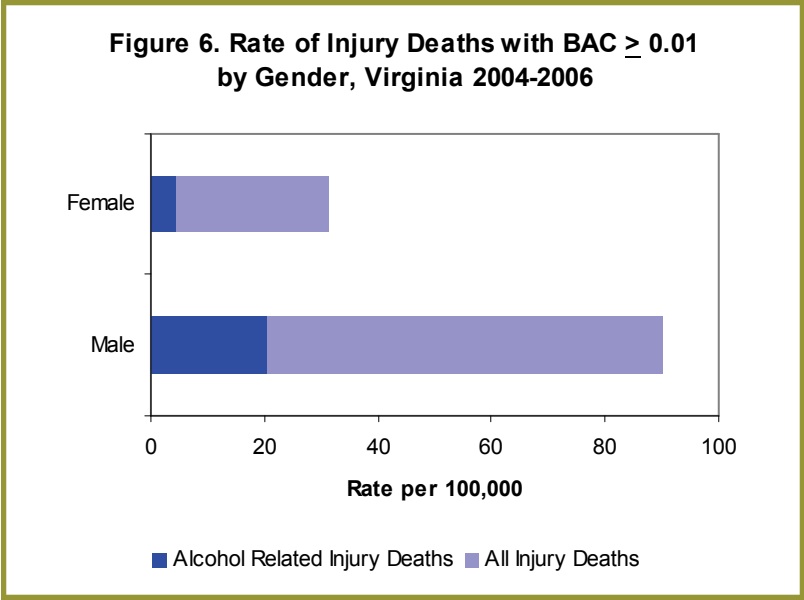
According to the Virginia Medical Examiner's Office, 10,867 Virginians died as a result of an injury from 2004-2006. Of these deaths, 2,806 (25.8 percent) had a detectable BAC of 0.01 or greater at the time of death.

Alcohol was detected in 29 percent of male injury deaths and 17 percent of female deaths. Males were 4.4 times more likely to die from an alcohol related injury than females (see Figure 6).

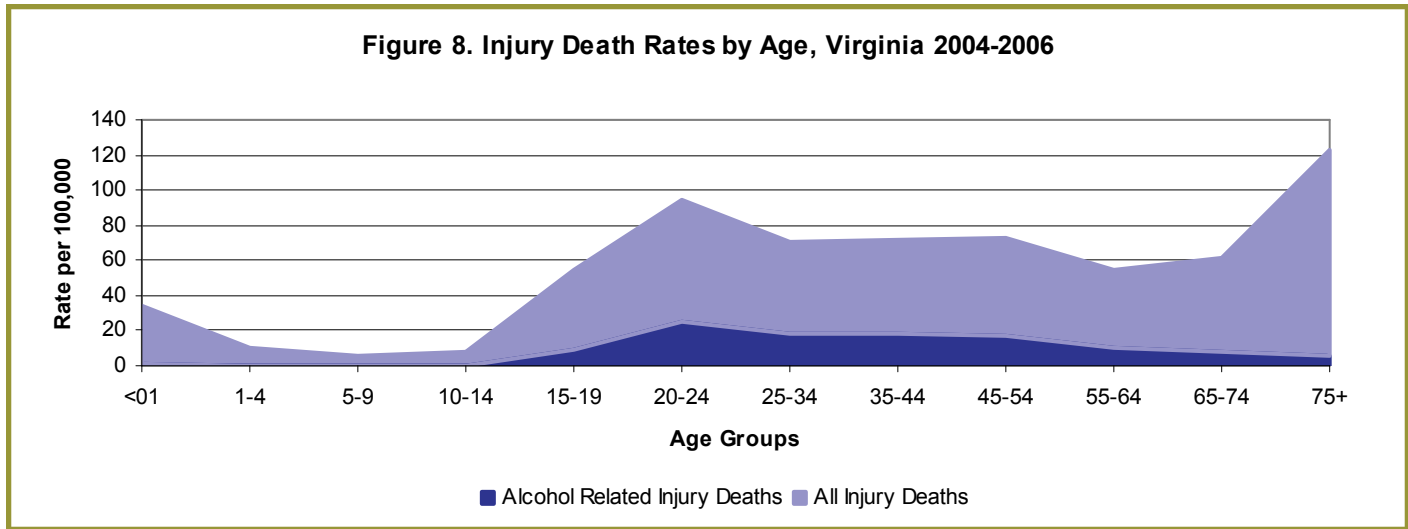
As seen in Figure 7, blacks were more likely to die of an alcohol related injury death.

Young adults (20-24 year olds) were more likely to die from an alcohol related injury than any other age group (see Figure 8).

Of the 2,806 injury deaths with a BAC ≥ 0.01 , more than half (67 percent, n=1,882) had a BAC ≥ 0.08 , the legal limit for operating a motor vehicle in Virginia. Of those injury deaths with a BAC ≥ 0.08 , 83 percent were among males.



Males were 4.4 times more likely to die from an alcohol related injury than females.



Alcohol Related Injury Deaths by Intent

Alcohol was detected in 31.8 percent of homicides, 29.5 percent of suicides, and 23.3 percent of unintentional injuries. For males, the highest percentage of deaths with detectable levels of alcohol were homicides (35.5 percent). Among females, the highest percentage of alcohol related deaths were suicides (23.5 percent).

Figure 9. Percent of All Injury Deaths with a BAC \geq 0.01 by Intent, Virginia 2004-2006

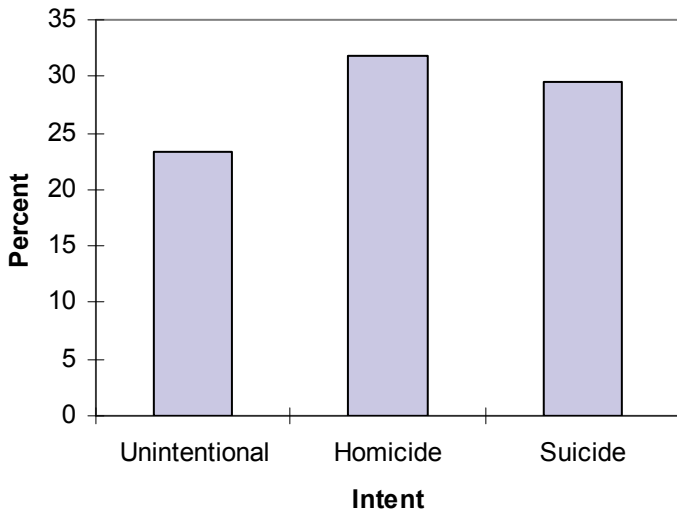
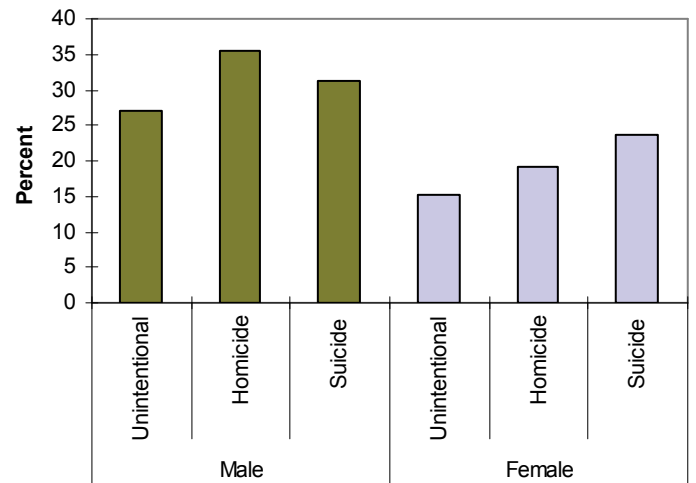


Figure 10. Percent of All Injury Deaths with BAC \geq 0.01 by Intent and Gender, Virginia 2004-2006



Unintentional Deaths

(with BAC \geq 0.01)

- 1,608 deaths
- Leading Causes:
 - 1) 50% motor vehicle crash
 - 2) 32% poisonings
 - 3) 6% drownings
- 79% were male; Males were 4 times more likely to die from an alcohol related unintentional injury death than females.
- 25% were 35-44 years old

Suicide Deaths

(with BAC \geq 0.01)

- 767 deaths
- Leading Causes:
 - 1) 62% firearms
 - 2) 17% poisonings
 - 3) 16% suffocations
- 83% were male; Males were 5 times more likely to die from an alcohol related suicide than females.
- 27% were 45-54 year olds

Homicide Deaths

(with BAC \geq 0.01)

- 431 deaths
- Leading Causes:
 - 1) 71% firearms
 - 2) 17% cutting instruments
 - 3) 2% suffocations
- 86% were male; Males were 6 times more likely to die from an alcohol related homicide than females.
- 32% were 25-34 year olds

Alcohol Related Injury Deaths by Cause

The causes of injury with a high percentage of alcohol related deaths ($BAC \geq 0.01$) were:

- Firearms
- Drowning
- Poisoning
- Motor vehicle traffic crashes (MVT)
- Suffocations

FIREARMS

From 2004-2006 there were 2,505 firearm related deaths in Virginia. Of these, 792 (32 percent) had a $BAC \geq 0.01$.

Alcohol Related Firearm Deaths:

- 60% were suicides
- 90% were male
- 64% were white and 33% were black
- The mean BAC of alcohol related firearm deaths was 0.13.
- 14% of youth aged 10-19 who died from a firearm injury had a $BAC \geq 0.01$

Figure 11. Percent of Firearm Deaths with $BAC \geq 0.01$, Virginia 2004-2006

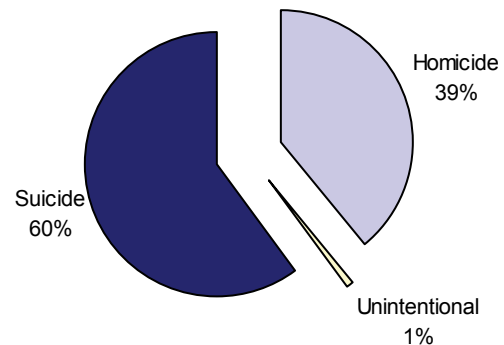
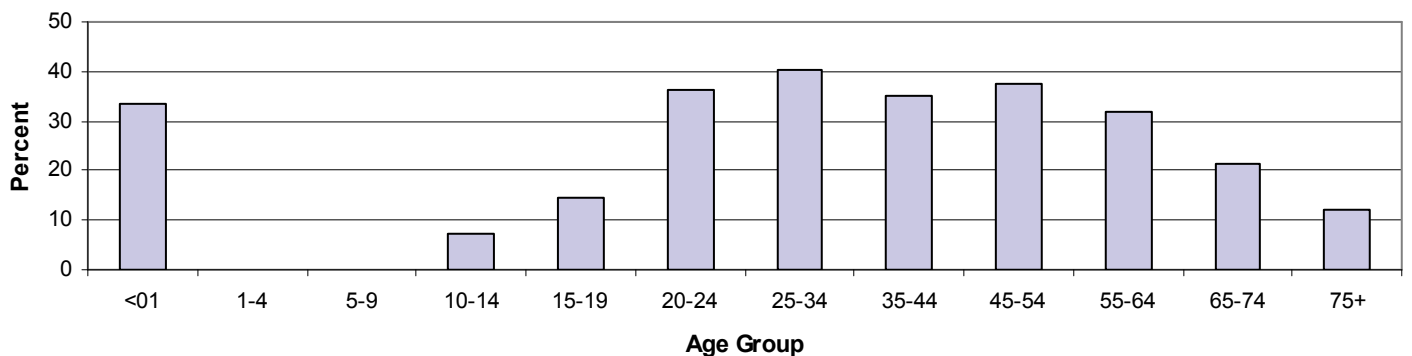


Figure 12. Percent of Firearm Related Deaths with $BAC \geq 0.01$, Virginia 2004-2006



Note: <1 percentage should be regarded with caution because the total number of firearm injury deaths was small. See Table 7. in the Appendix.

Alcohol Related Injury Deaths by Cause, Cont'd

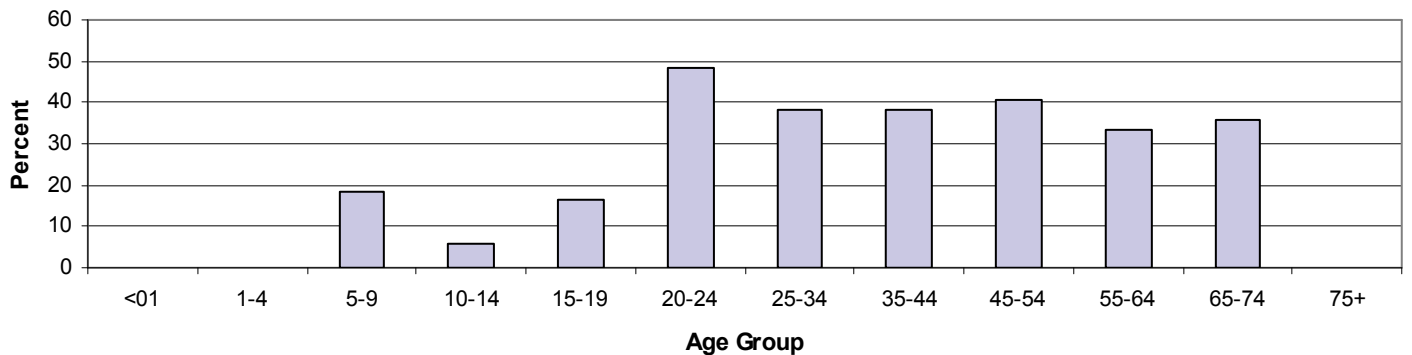
DROWNING

From 2004-2006 there were 340 drowning related deaths in Virginia. Of these, 100 (29 percent) had a BAC \geq 0.01.

Alcohol Related Drowning Deaths:

- 93% were unintentional
- 83% were male
- 70% were white
- The mean BAC of alcohol related drowning deaths was 0.14.
- 40% of all alcohol related drowning deaths occurred among 35-54 year olds.
- 13% of youth aged 10-19 who drowned had a BAC $>$ 0.01

Figure 13. Percent of Drowning Deaths with BAC \geq 0.01, Virginia 2004-2006



Note: 5-9 percentage should be regarded with caution because the total number of drowning injury deaths was small. See Table 7. in the Appendix.

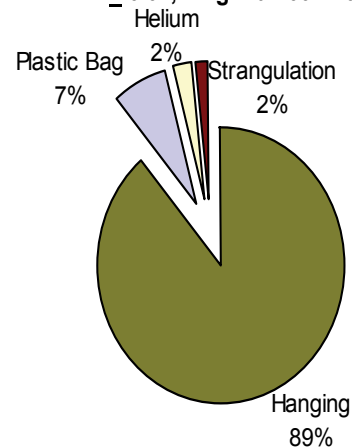
SUFFOCATION

From 2004-2006 there were 733 suffocation related deaths in Virginia. Of these, 164 (22 percent) had a BAC \geq 0.01.

Alcohol Related Suffocations:

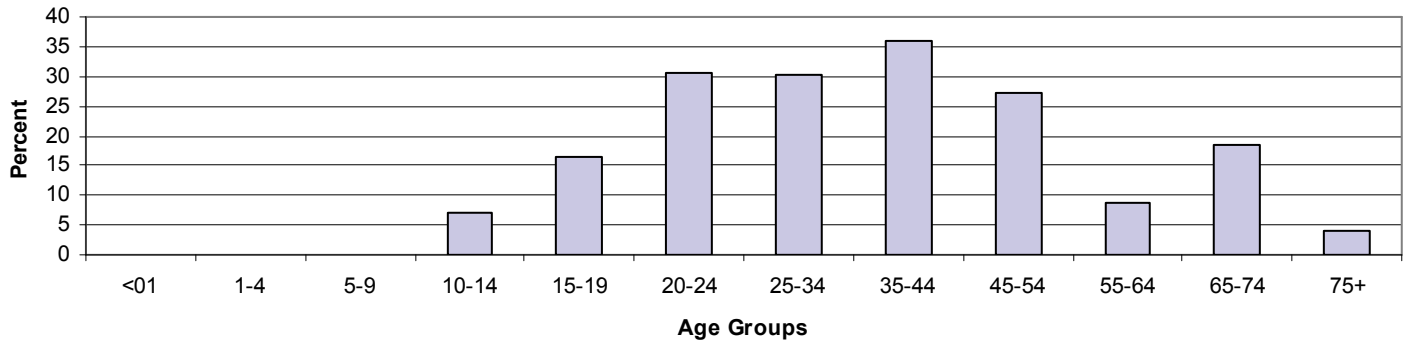
- 77% were suicides
- 82% were male
- 87% were white
- Mean BAC of alcohol related suffocation deaths was 0.12
- 70% of alcohol related suffocations were hangings
- 14% of youth aged 10-19 who died of suffocation had a BAC \geq 0.01.

Figure 14. Method of Suffocations by Suicide with BAC \geq 0.01, Virginia 2004-2006



Alcohol Related Injury Deaths by Cause, Cont'd

Figure 15. Percent of Suffocation Deaths with BAC \geq 0.01, Virginia 2004-2006



POISONING

From 2004-2006 there were 2,160 related deaths in Virginia. Thirty percent (n=647) of poisoning deaths involved alcohol.

Alcohol Related Poisonings:

- 80% were unintentional, 20% were suicides
- 70% were male
- 81% were white and 15% were black
- In 11% (n=69) of the deaths, alcohol-ethanol was the underlying cause of death

Alcohol Related Poisonings Among 35-45 Year Olds:

- Comprise 66% of all alcohol related poisoning deaths
- 79% of these deaths were due to drugs, other poisons
- 79% were unintentional; 21% were suicides
- 69% were male
- 81% were white
- The mean BAC was 0.141

Figure 16. Method of Alcohol Related Poisoning Deaths, Virginia 2004-2006

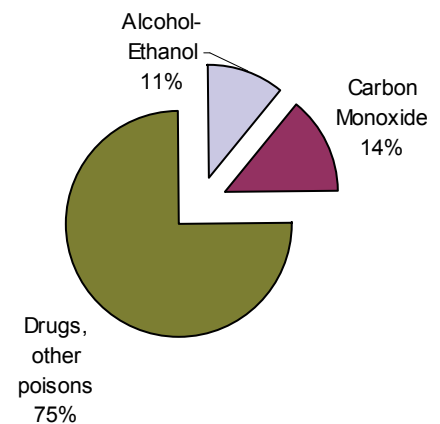
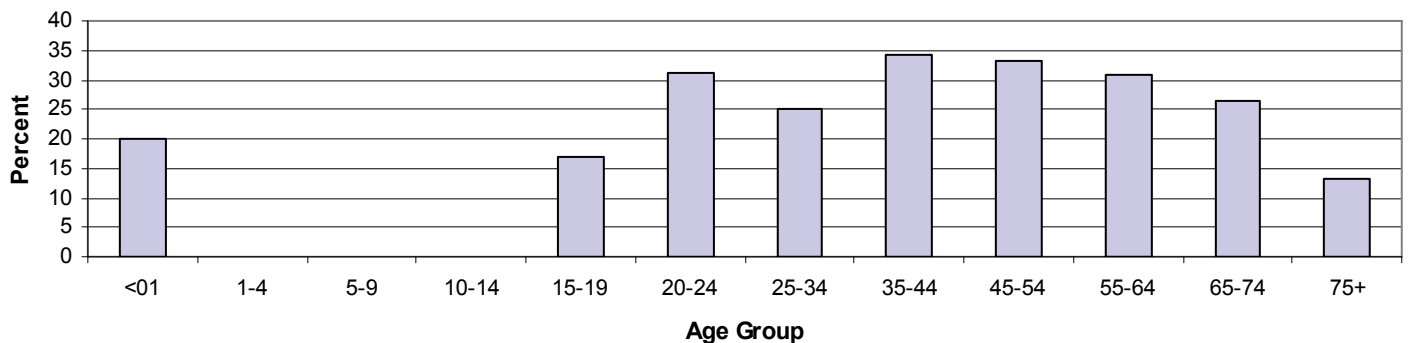


Figure 17. Percent of Poisoning Deaths with BAC > 0.01, Virginia 2004-2006



Note: <01 percentage should be regarded with caution because the total number of poisoning injury deaths was small. See Table 7. in the Appendix.

Alcohol Related Injury Deaths by Cause, Cont'd

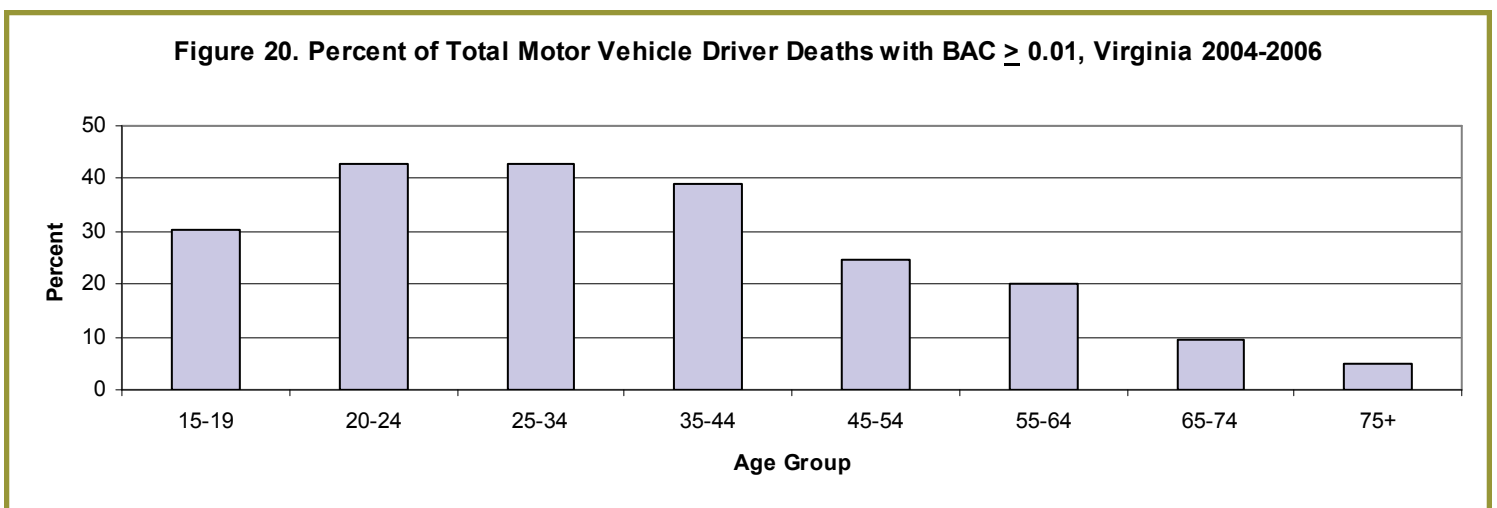
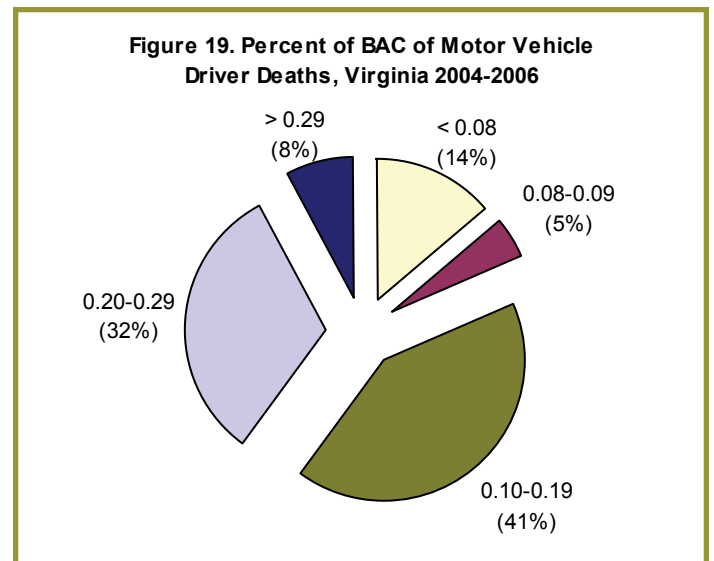
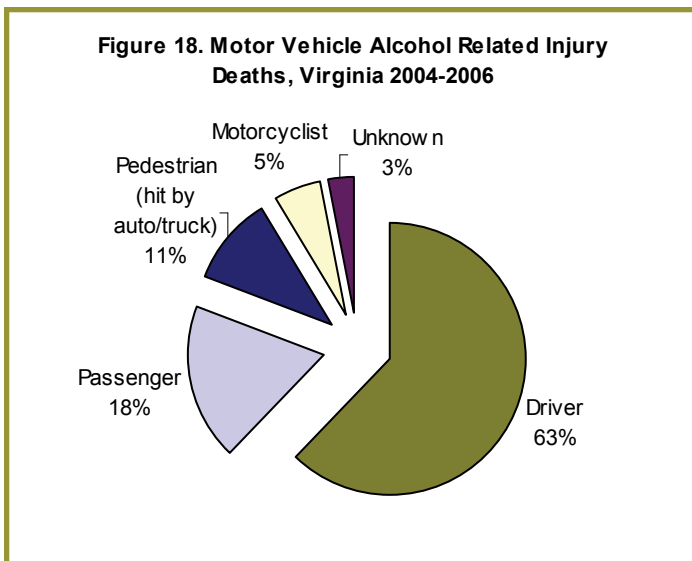
MOTOR VEHICLE TRAFFIC CRASHES (MVT) - DEATHS

From 2004-2006 there were 2,926 motor vehicle related deaths in Virginia. Motor vehicle related injury deaths included:

- Auto/Truck Driver
- Auto/Truck Passenger
- Auto/Truck Pedestrian (pedestrian was hit by an automobile or truck)
- Auto/Truck Unknown
- Motorcycle

801 (27 percent) of all motor vehicle crash deaths where alcohol related ($BAC \geq 0.01$). Of these deaths:

- 99% were unintentional
- 82% were male
- 74% were white
- The mean BAC of a *driver* was 0.175 and a *motorcyclist* was 0.140



Alcohol Related Injury Deaths by Cause, Cont'd

MOTOR VEHICLE TRAFFIC CRASHES (MVT) - NON-FATAL INJURIES

The Virginia Department of Motor Vehicles releases the *Virginia Traffic Crash Facts* report every year. This report provides a comprehensive statistical overview of traffic crashes occurring in Virginia. According to the report, in 2007 there were:¹²

- 11,215 alcohol related crashes in Virginia, accounting for 7.7% of all vehicle crashes
- 7,130 people were injured in alcohol-related crashes, 66% were male
- 759 15-19 year olds were injured in alcohol-related crashes
- The average BAC of tested drinking drivers was 0.14

Figure 21. Number of Drivers Injured in Alcohol-Related Crashes, Virginia 2007

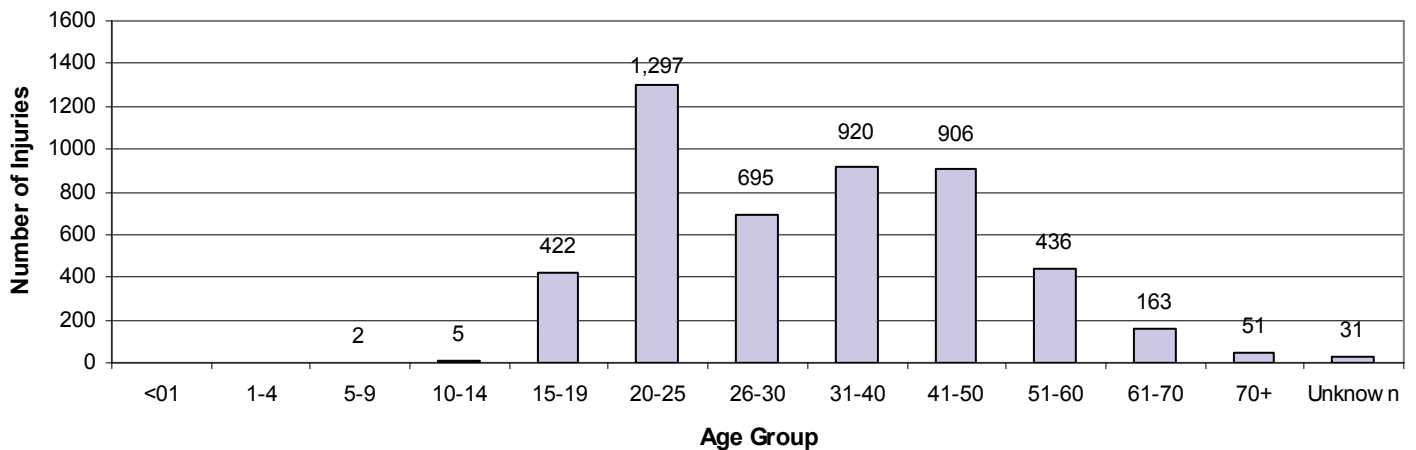
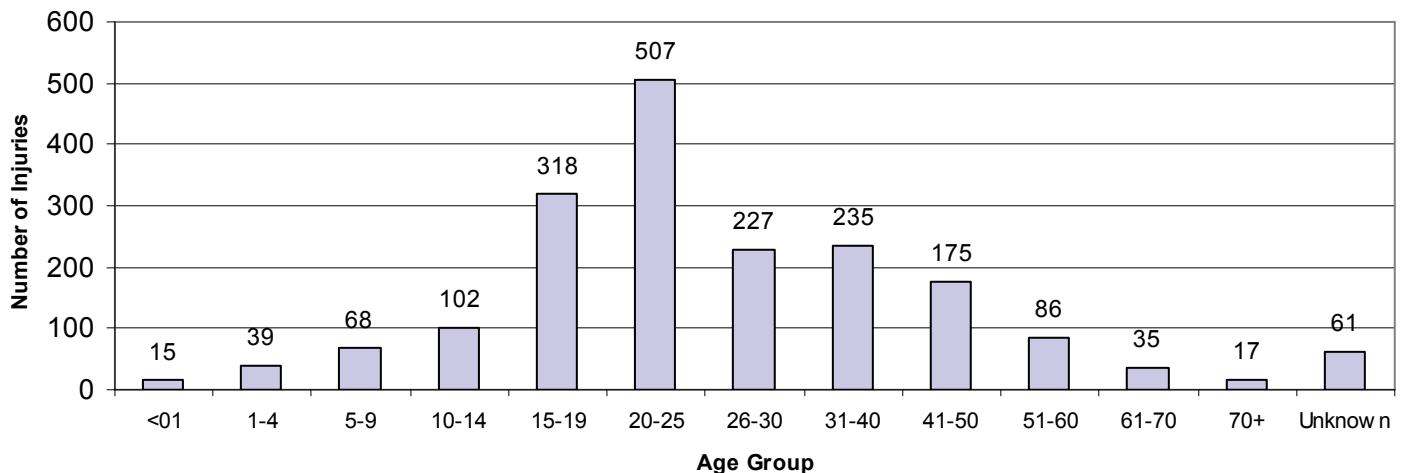


Figure 22. Number of Passengers Injured in Alcohol-Related Crashes, Virginia 2007



Alcohol Related Injury Deaths by Age

Eighty percent of all alcohol related injury deaths in Virginia occurred among 20-54 year olds. The percentage of alcohol related injury deaths increased with age, peaking among 20-24 year olds before declining with increasing age. See Tables 6 and 7 in the Appendix for more information.

The leading causes of alcohol related injury death were consistent among 15-64 year olds (firearms, poisoning, drowning, suffocation, and motor vehicle crashes). However, among the elderly 65 and older, injury death resulting from a fall or push surpassed suffocation to become a leading cause of alcohol related death (see Figures 38 and 39).

Figure 23. Percent of Total Injury Deaths with BAC \geq 0.01, Virginia 2004-2006

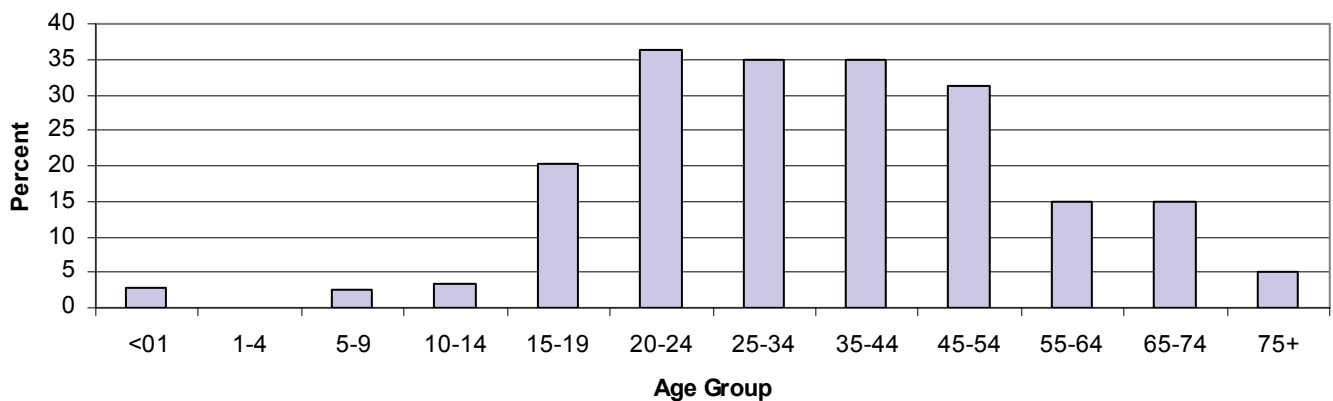
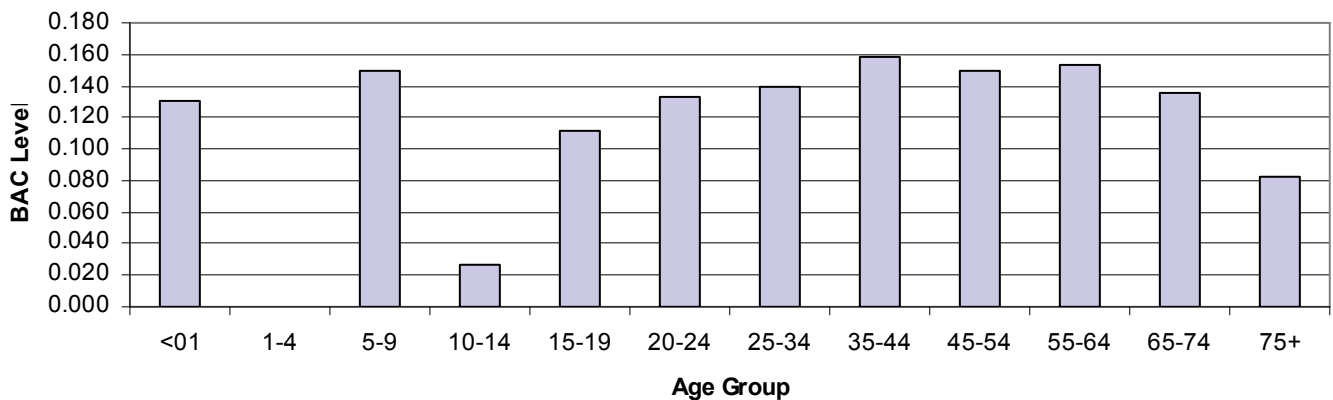


Figure 24. Mean BAC Levels of Injury Related Deaths, Virginia 2004-2006



Note: Mean BAC Levels for infants and 5-9 year olds should be regarded with caution because the total number of alcohol related injury deaths was small. See Table 5. in the Appendix.

Alcohol Related Injury Deaths by Age, Cont'd

15-19 YEAR OLDS

Figure 25. Percent Of Injury Deaths with BAC \geq 0.01 Among 15-19 Year Olds, Virginia 2004-2006

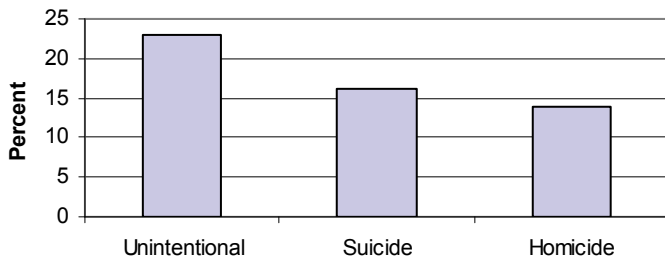
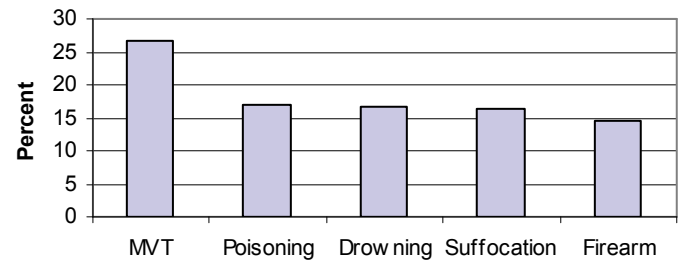


Figure 26. Percent of Injury Deaths with BAC \geq 0.01 Among 15-19 Year Olds, Virginia 2004-2006



20-24 YEAR OLDS

Figure 27. Percent of Injury Deaths with BAC \geq 0.01 Among 20-24 Year Olds, Virginia 2004-2006

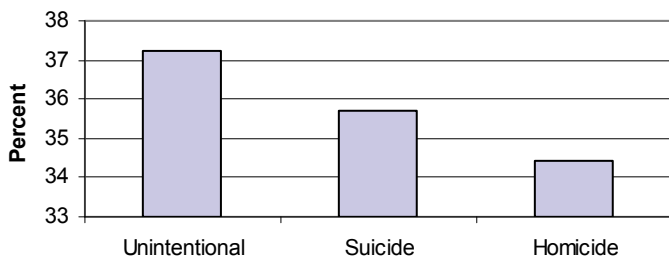
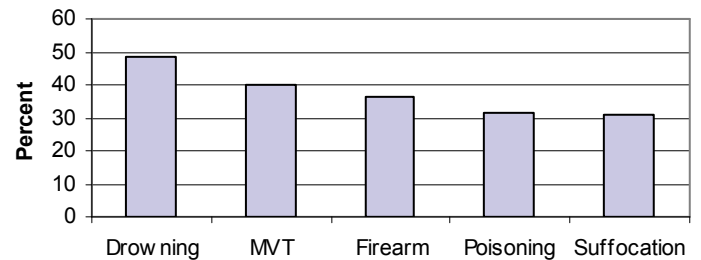


Figure 28. Percent of Injury Deaths with a BAC \geq 0.01 Among 20-24 Year Olds, Virginia 2004-2006



25-34 YEAR OLDS

Figure 29. Percent of Injury Deaths with BAC \geq 0.01 Among 25-34 Year Olds, Virginia 2004-2006

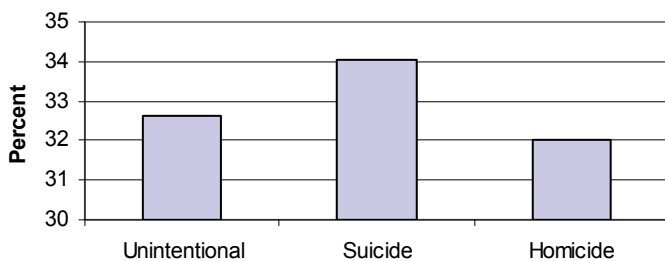
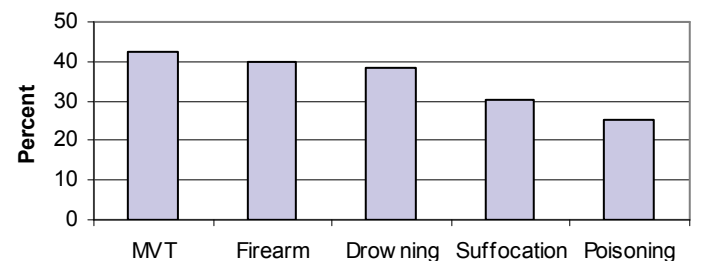


Figure 30. Percent of Injury Deaths with BAC \geq 0.01 Among 25-34 Year Olds, Virginia 2004-2006



Alcohol Related Injury Deaths by Age, Cont'd

35-44 YEAR OLDS

Figure 31. Percent of Injury Deaths with BAC \geq 0.01 Among 35-44 Year Olds, Virginia 2004-2006

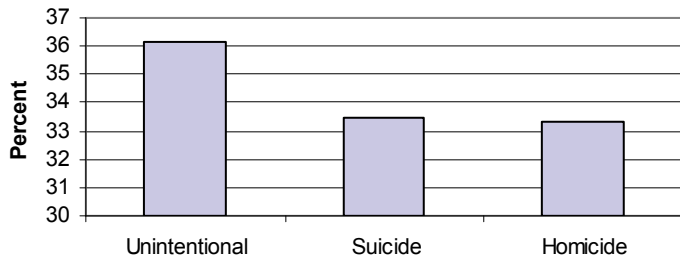
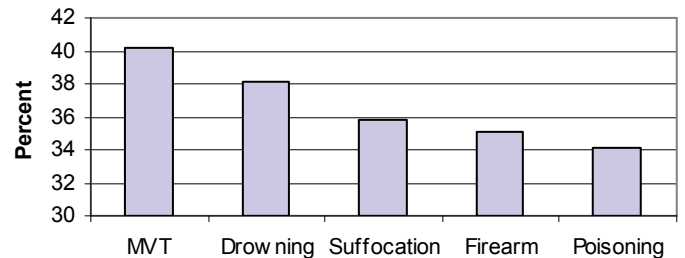


Figure 32. Percent of Injury Deaths with BAC \geq 0.01 Among 35-44 Year Olds, Virginia 2004-2006



45-54 YEAR OLDS

Figure 33. Percent of Injury Deaths with BAC \geq 0.01 Among 45-54 Year Olds, Virginia 2004-2006

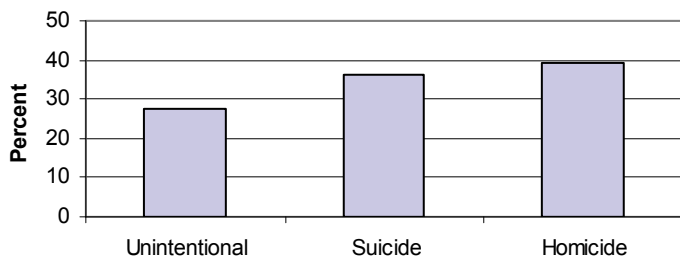
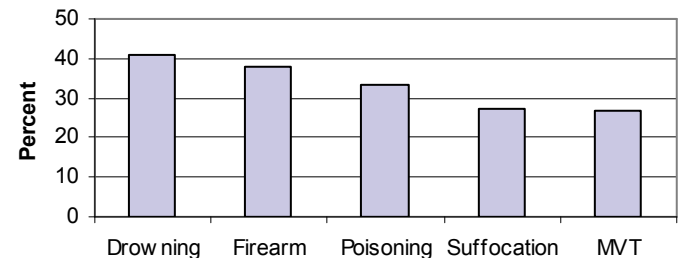


Figure 34. Percent of Injury Deaths with BAC \geq 0.01 Among 45-54 Year Olds, Virginia 2004-2006



55-64 YEAR OLDS

Figure 35. Percent of Injury Deaths with BAC \geq 0.01 Among 55-64 Year Olds, Virginia 2004-2006

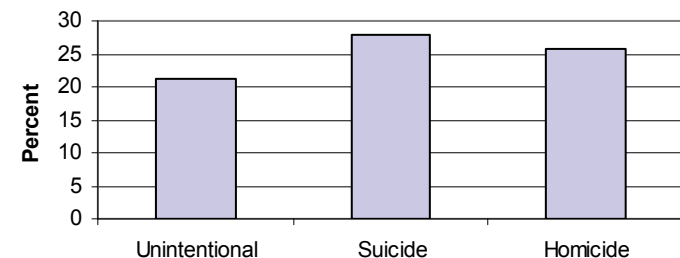
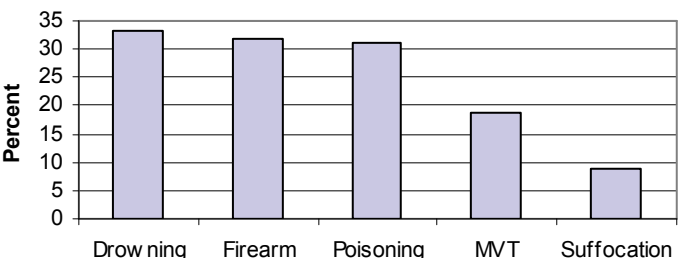


Figure 36. Percent of Injury Deaths with BAC \geq 0.01 Among 55-64 Year Olds, Virginia 2004-2006



Alcohol Related Injury Deaths by Age, Cont'd

65-74 YEAR OLDS

Figure 37. Percent of Injury Deaths with BAC \geq 0.01 Among 65-74 Year Olds, Virginia 2004-2006

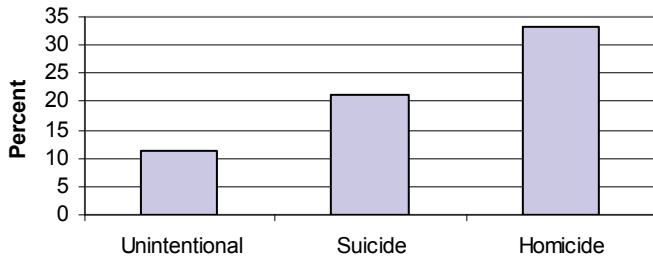
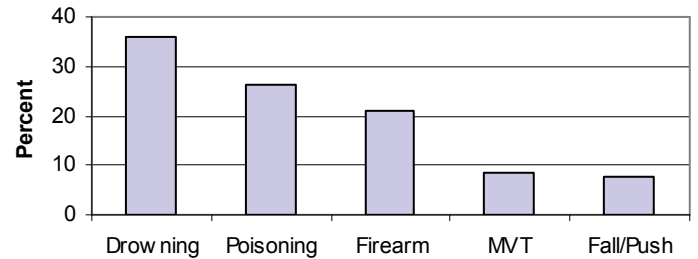


Figure 38. Percent of Injury Deaths with BAC \geq 0.01 Among 65-74 Year Olds, Virginia 2004-2006



75 AND OLDER

Figure 39. Percent of Injury Deaths with BAC \geq 0.01 Among 75+, Virginia 2004-2006

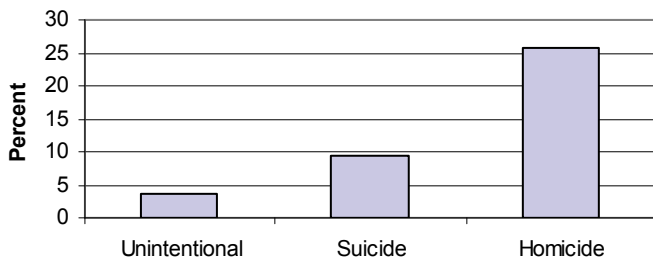
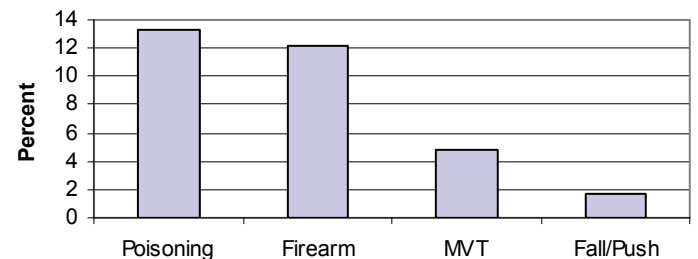


Figure 40. Percent of Injury Deaths with BAC \geq 0.01 Among 75+ Year Olds, Virginia 2004-2006



Appendix—Tables

Table 1. Virginia Adult Alcohol Use Within the Past 30 Days

	2004	2005	2006
Age Groups			
18-24	57.8%	53%	47.9%
25-34	58.2%	57.4%	56.2%
35-44	59.2%	62.4%	57.8%
45-54	56.2%	59.2%	58.7%
55-64	52.5%	54%	53.1%
65+	36.9%	37.6%	36%
Total	54.1%	54.7%	52.4%

Table 2. Virginia Adult Binge Drinking

	2003	2004	2005
Age Groups			
18-24	31.8%	30.2%	21.7%
25-34	23.9%	21%	17.8%
35-44	15.4%	14.4%	14.7%
45-54	11.8%	9.1%	10.5%
55-64	4.9%	6.8%	6.8%
65+	3.2%	2.2%	1.7%
Total	15.1%	13.8%	12.2%

Table 3. Virginia Youth Alcohol Use Within the Past 30 Days

	2000	2003	2005
Grade			
8th graders	20.8%	20%	18.9%
10th graders	33.8%	36.7%	34.5%
12th graders	52.8%	52.7%	45.8%

Table 4. Virginia Youth Who Have Ever Used Alcohol

	2000	2003	2005
Grade			
8th graders	46.5%	46%	41.7%
10th graders	61.5%	64.9%	63.6%
12th graders	79.1%	81%	75.8%

Appendix—Tables

Table 5. Number, Percent, and Rate of Alcohol Related Injury Deaths, Virginia 2004-2006

	Total No. Injury Deaths	No. Deaths with BAC ≥ 0.01	% Deaths with BAC ≥ 0.01	Injury Death Rate with BAC ≥ 0.01*
Sex				
Male	7,786	2,275	29.22%	20.4
Female	3,081	531	17.23%	4.6
Race				
White	7,956	2,032	25.54%	13.01
Black	2,330	620	26.61%	13.70
Hispanic, Any Race	340	118	34.71%	8.69
Other	241	36	14.93%	3.08
Age Group**				
<01	102	2	1.96%%	0.65
1-4	120	0	—	—
5-9	80	2	2.50%	0.14
10-14	114	4	3.51%	0.26
15-19	719	145	20.17%	9.22
20-24	1,124	408	36.30%	25.23
25-34	1,620	564	34.81%	18.32
35-44	1,874	657	35.06%	18.66
45-54	1,871	585	31.27%	17.44
55-64	1,072	255	23.79%	10.50
65-74	750	112	14.93%	8.06
75+	1,420	71	5.00%	5.87
Intent				
Unintentional	6,914	1,608	23.26%	7.09
Suicide	2,599	767	29.51%	3.38
Homicide	1,354	431	31.83%	1.90
Cause				
Abused/Battered Child	14	0	—	—
Animals	6	0	—	—
Beating/Blows	115	35	30.43%	0.15
Burn/Fire	126	23	18.25%	0.10
Cutting Instrument	214	81	37.85%	0.36
Drowning	340	100	29.41%	0.44
Electricity	32	2	6.25%	0.01
Explosion	7	0	—	—
Exposure	66	19	28.79%	0.08
Fall/Push	1,126	77	6.84%	0.34
Falling Object	66	3	4.55%	0.01
Firearm	2,505	792	31.62%	3.49
Jump	51	10	19.61%	0.04
Lethal Injection	8	0	—	—
Lightning	2	1	50%	0.00
Motor vehicle crash	2,926	801	27.38%	3.53
Machinery	32	1	3.13%	0.00
Other	140	17	12.14%	0.07
Pedal Cyclist	40	3	7.50%	0.01
Poisoning	2,160	647	29.95%	2.85
Sports/Athletics	8	1	12.50%	0.00
Steam/Cold	4	0	—	—
Stings	5	0	—	—
Suffocation	733	164	22.37%	0.72
Transport, other	141	29	20.57%	0.13
Total	10,867	2,806	25.82%	12.37

*Crude Rate per 100,000

**Age was unknown for one record

Appendix—Tables

Table 6. Number and Percent of Alcohol Related Injury Deaths by Age Group and Intent, Virginia 2004-2006

	Unintentional			Suicide			Homicide		
	Total No. Injury Deaths	No. Deaths with BAC \geq 0.01	% Deaths with BAC \geq 0.01	Total No. Injury Deaths	No. Deaths with BAC \geq 0.01	% Deaths with BAC \geq 0.01	Total No. Injury Deaths	No. Deaths with BAC \geq 0.01	% Deaths with BAC \geq 0.01
Age Group*									
<01	75	1	1.33%	0	0	—	27	1	3.70%
1-4	88	0	—	0	0	—	32	0	—
5-9	72	2	2.78%	0	0	—	8	0	—
10-14	74	1	1.35%	20	0	—	20	3	15.00%
15-19	470	108	22.98%	111	18	16.22%	138	19	13.77%
20-24	655	244	37.25%	199	71	35.68%	270	93	34.44%
25-34	898	293	32.63%	391	133	34.02%	331	138	41.69%
35-44	1,132	409	36.13%	508	170	33.46%	234	78	33.33%
45-54	1,140	316	27.72%	579	209	36.10%	152	60	39.47%
55-64	631	134	21.24%	367	102	27.79%	74	19	25.68%
65-74	518	59	11.39%	199	42	21.11%	33	11	33.33%
75+	1,161	41	3.53%	224	21	9.38%	35	9	25.71%
Total	6,914	1,608	23.25%	2,598	767*	29.48%	1,354	431	31.83%

*Age was unknown for one record.

Appendix—Tables

Table 7. Number and Percent of Alcohol Related Injury Deaths by Age Group and Cause, Virginia 2004-2006

Age Group	Firearms			Drowning			Suffocation		
	Total No. Injury Deaths	No. Deaths with BAC \geq 0.01	% Deaths with BAC \geq 0.01	Total No. Injury Deaths	No. Deaths with BAC \geq 0.01	% Deaths with BAC \geq 0.01	Total No. Injury Deaths	No. Deaths with BAC \geq 0.01	% Deaths with BAC \geq 0.01
<01	3	1	33.33%	6	0	—	43	0	—
1-4	7	0	—	18	0	—	14	0	—
5-9	3	0	—	11	2	18.18%	5	0	—
10-14	28	2	7.14%	17	1	5.88%	14	1	7.14%
15-19	179	26	14.53%	36	6	16.67%	49	8	16.33%
20-24	349	127	36.39%	31	15	48.39%	62	19	30.65%
25-34	456	183	40.13%	34	13	38.24%	125	38	30.40%
35-44	421	148	35.15%	42	16	38.10%	145	52	35.86%
45-54	417	157	37.65%	59	24	40.68%	106	29	27.36%
55-64	280	89	31.79%	42	14	33.33%	72	7	8.86%
65-74	165	35	21.21%	25	9	36.00%	35	8	18.60%
75+	197	24	12.18%	19	0	—	46	2	4.17%
Total	2,505	792	31.62%	340	100	29.41%	569	164	22.37%

Age Group	Poisoning			Motor Vehicle Crashes			Motor Vehicle Crashes -Drivers Only		
	Total No. Injury Deaths	No. Deaths with BAC \geq 0.01	% Deaths with BAC \geq 0.01	Total No. Injury Deaths	No. Deaths with BAC \geq 0.01	% Deaths with BAC \geq 0.01	Total No. Injury Deaths	No. Deaths with BAC \geq 0.01	% Deaths with BAC \geq 0.01
<01	10	2	20.00%	18	0	—	0	0	—
1-4	11	0	—	29	0	—	0	0	—
5-9	11	0	—	38	0	—	0	0	—
10-14	2	0	—	37	0	—	0	0	—
15-19	53	9	16.98%	344	92	26.74%	194	59	30.41%
20-24	176	55	31.25%	407	163	40.05%	240	103	42.92%
25-34	418	105	25.12%	433	184	42.49%	280	120	42.86%
35-44	647	221	34.16%	413	166	40.19%	249	97	38.96%
45-54	536	178	33.21%	427	114	26.70%	259	64	24.71%
55-64	171	53	30.99%	261	49	18.77%	170	34	20.00%
65-74	57	15	26.32%	225	19	8.44%	140	13	9.29%
75+	68	9	13.24%	294	14	4.76%	188	9	4.79%
Total	2,160	647	29.95%	2,926	801	27.38%	1,720	499	29.01%

Appendix—Tables

Table 8. Effects of Alcohol on Body by BAC (Blood Alcohol Concentration)¹³

Blood Alcohol Concentration	Changes in Feelings and Personality	Physical and Mental Impairments
0.01-0.06	Relaxation Sense of well-being Loss of inhibition Lowered alertness Joyous	Tought Judgement Coordination Concentration
0.06-0.10	Blunted feelings Disinhibition Extroversion Impaired sexual pleasure	Reflexes impaired Reasoning Depth perception Distance acuity Peripheral vision Glare recovery
0.11-0.20	Over-expression Emotional swings Angry or sad Boisterous	Reaction time Gross motor control Staggering Slurred speech
0.21-0.29	Stupor Lose Understanding Impaired Sensations	Severe motor Impairment Loss of consciousness Memory blackout
0.30-0.39	Sever depression Unconsciousness Death possible	Bladder function Breathing Heart rate
=> 0.40	Unconsciousness Death	Breathing Heart rate

Resources

- **Division of Injury and Violence Prevention, Virginia Department of Health**
<http://www.vahealth.org/civp>
- **National Center for Injury Prevention and Control, Centers for Disease Control and Prevention**
<http://www.cdc.gov/ncipc/factsheets/driving.htm>
- **Virginia Highway Safety Office, Virginia Department of Motor Vehicles**
<http://www.dmv.state.va.us/webdoc/safety/index.asp>
- **Virginia Department of Transportation**
<http://www.virginiadot.org>
- **Governor's Office for Substance Abuse Prevention (GOSAP)**
<http://www.gosap.state.va.us/>
- **Virginia Department of Mental Health, Mental Retardation, and Substance Abuse Services**
<http://www.dmhmrzas.virginia.gov/>
- **Virginia Department of Alcoholic Beverage Control**
<http://www.abc.state.va.us/>
- **Virginia Department for the Aging**
<http://www.vda.virginia.gov/>

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NOTES

NOTES

This report has been prepared by the Division of Injury and Violence Prevention, Virginia Department of Health with assistance from the Office of the Chief Medical Examiner, Virginia Department of Health.

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