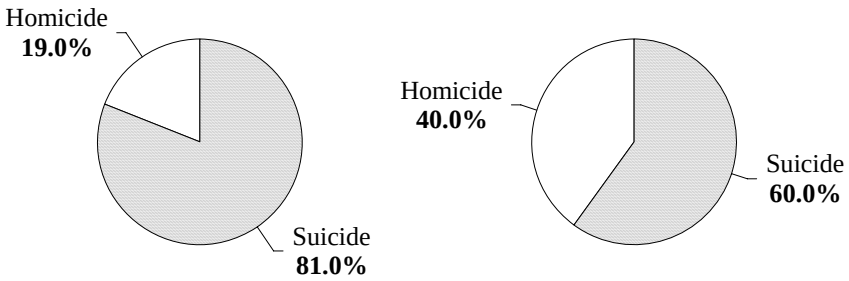
HSC Statistical Brief

Selected Data on Suicides
West Virginia and the United States
Brief No. 13

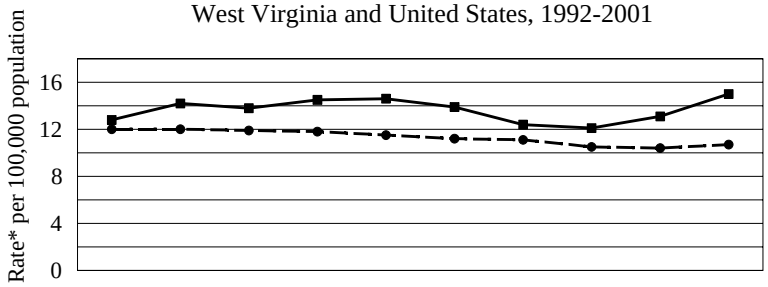
Violence-related injury mortality (homicides and suicides) was the 9th leading cause of death in the United States and the 10th leading cause of death in West Virginia in 2001. Because homicides receive more attention in the news media, many people do not realize that suicides far outnumber homicides every year in both West Virginia and the nation, but particularly so in our state. In 2001, for example, there were 51,326 violence-related deaths in the United States; 60% (30,622) of these were the result of suicide. In West Virginia in that same year, there were a total of 358 violent deaths; of these, **81%** (290) resulted from suicide. The pie charts below illustrate the proportion of suicide in total violence-related deaths. The U.S. Centers for Disease Control and Prevention (CDC) has recognized suicide as a significant public health problem and in 1999 published *The Surgeon General's Call to Action to Prevent Suicide* (1).

Figure 1. Distribution of violence-related deaths
West Virginia and United States, 2001



Nationally, suicide deaths have decreased slightly over the past decade, from an age-adjusted rate of 12.0 deaths per 100,000 population in 1992 to 10.7 in 2001. West Virginia has not followed the national trend, however; the state's suicide rate has risen from 12.8 in 1992 to 15.0 in 2001. In addition, in each year between 1992 and 2001, the state rate has exceeded the national rate. Figure 2 shows the trends in suicide mortality in West Virginia and the United States over the study period.

Figure 2. Annual suicide rates, all ages
West Virginia and United States, 1992-2001

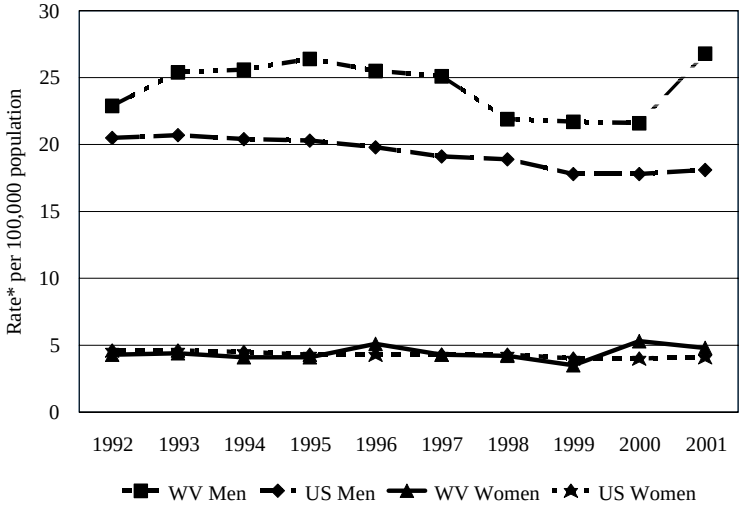


	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
WV	12.8	14.2	13.8	14.5	14.6	13.9	12.4	12.1	13.1	15
US	12	12	11.9	11.8	11.5	11.2	11.1	10.5	10.4	10.7

*Rates are age adjusted to the 2000 U.S. standard population.

Suicide Rates by Sex. Figure 3 depicts the 1992-2001 trends for West Virginia and the United States by sex. There is very little variation in suicide rates among women both statewide and nationwide over the 10-year period. It is a quite different story when looking at the suicide rates among men. The difference between state and nation in overall rates is due almost completely to the state's male rates, which are consistently higher than comparable national rates and do not show the same downward trend as in the nation as a whole. Table 1 on the following page details the age-adjusted suicide rates for individual years for both sexes for West Virginia and the United States.

Figure 3. Annual suicide rates by sex, all ages
West Virginia and United States, 1992-2001



*Rates are age adjusted to the 2000 U.S. standard population.

Table 1. Annual number and rate* of suicides by sex West Virginia and United States, 1992-2001				
	West Virginia		United States	
Males	Number	Rate	Number	Rate
1992	199	22.9	24,457	20.5
1993	226	25.4	25,007	20.7
1994	219	25.6	25,174	20.4
1995	237	26.4	25,369	20.3
1996	230	25.5	24,998	19.8
1997	221	25.1	24,492	19.1
1998	193	21.9	24,538	18.9
1999	195	21.7	23,458	17.8
2000	194	21.6	23,618	17.8
2001	240	26.8	24,672	18.1
Females				
1992	41	4.4	6,027	4.6
1993	43	4.4	6,095	4.6
1994	39	4.1	5,968	4.5
1995	39	4.1	5,915	4.3
1996	49	5.1	5,905	4.3
1997	41	4.3	6,043	4.3
1998	39	4.2	6,037	4.3
1999	34	3.5	5,714	4.0
2000	51	5.3	5,732	4.0
2001	46	4.8	5,950	4.1

*Rates are age adjusted to the 2000 U.S. standard population.

Suicide Rates by Age. Figures 4 and 5 illustrate the difference in state and national suicide rates by age for three time periods: 1993-95, 1996-98, and 1999-2001 (data were aggregated to compensate for small numbers of state suicides in some age groups). As shown, state age-specific rates were consistently higher than comparable national rates for each of the selected age groups in all three time periods. Although state rates are higher, the same downward trend in rates between 1993 and 2001 (however slight) can be seen among adolescents (10-19), young adults (20-39), and older adults (65+). This trend is not evident, however, among middle-aged state residents (40-64), where a slight increase occurred between 1996-98 and 1999-2001.

Figure 4. Suicide mortality rates among adolescents and young adults
West Virginia and United States
1993-1995, 1996-1998, and 1999-2001

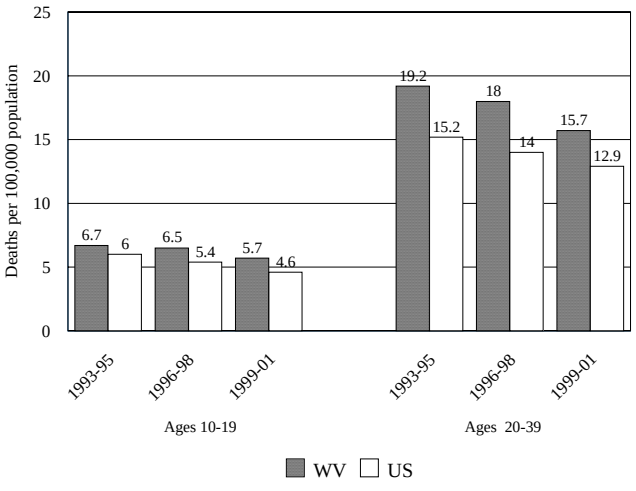
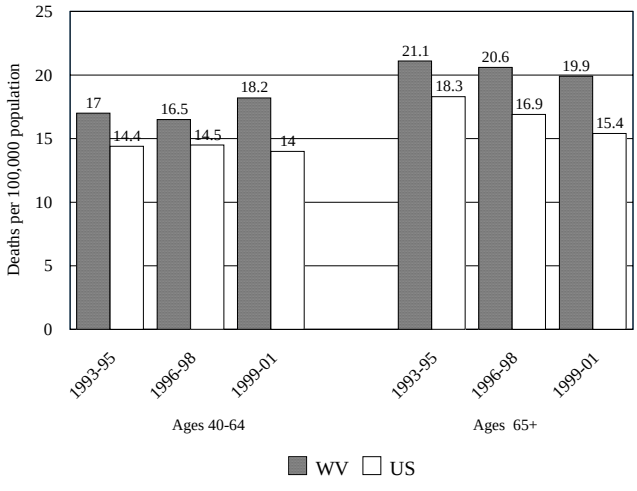
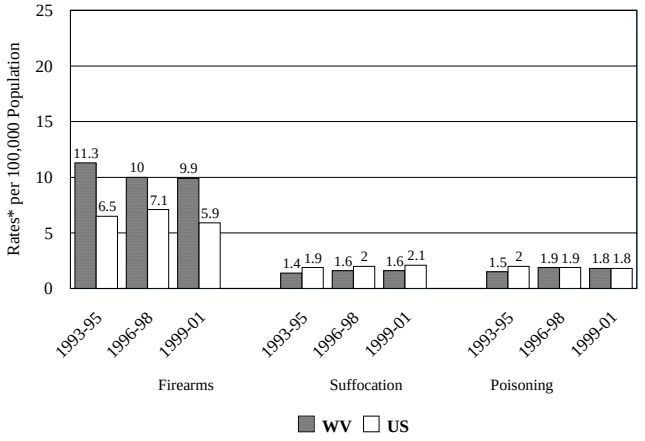


Figure 5. Suicide mortality rates among middle-aged and older adults
West Virginia and United States
1993-1995, 1996-1998, and 1999-2001



Method of Suicide. West Virginia's higher suicide rates are the result of markedly higher rates of firearm-related suicides, as shown in Figure 6. The three most common methods of suicide, i.e., firearms, suffocation (mostly hanging), and poisoning, are included in the graph. State rates of suicide by suffocation and poisoning are similar to, or slightly lower than, national rates over the three time periods. From 1999-2001, the most recent time period, West Virginia's rate of firearm suicide was 68% higher than the U.S. rate.

Figure 6. Suicide mortality rates by method
West Virginia and United States
1993-1995, 1996-1998, and 1999-2001

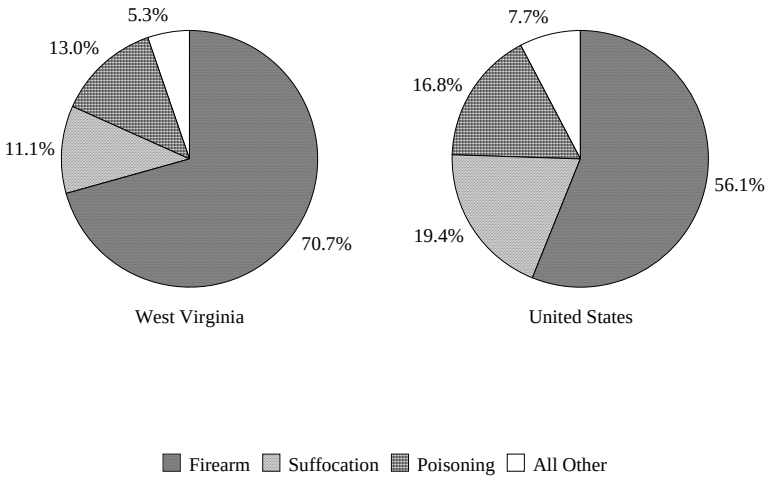


*Rates are age adjusted to the 2000 U.S. standard million.

The pie charts below (Figure 7) show the distribution of suicide deaths by method for 1999 through 2001 in West Virginia and the United States. Out of a total of 89,171 suicides in the nation during those years, 50,054 or 56% were firearm related. In West Virginia, 537 out of a total of 760 suicides, or 71%, were firearm related. Suffocation accounted for 19% of U.S. suicides and 11% of state suicides, while poisoning was responsible for 17% and 13%, respectively, of suicides nationally and statewide.

Firearms have traditionally been and remain a predominately male choice for method of suicide. Although women accounted for 17% of total suicides from 1999-2001 in West Virginia, they made up only 12% of firearm suicides. In the United States as a whole, 20% of all suicides from 1999-2001 were female, compared with 13% of firearm-related suicides. Twelve percent (12%) of suffocation suicides in the state were female, as were 17% of suffocation suicides nationwide. Women made up a much larger percentage of poisoning suicides, however, 46% in West Virginia and 43% in the United States.

Figure 7. Distribution of suicide deaths by method
West Virginia and United States, 1999-2001



Adolescents. Teenage suicides have always prompted particular concern. A 2004 report from the CDC published in the *Morbidity and Mortality Weekly Report* (2) revealed that, nationwide, the suicide rate among 10- to 19-year-olds decreased 25% between 1992 and 2001, from a rate of 6.2 deaths per 100,000 population to a rate of 4.6, a drop attributed in large part to fewer firearm suicides. Nevertheless, suicide remained the 3rd leading cause of death among persons aged 10-19 in the United States in 2001. Even more disturbing is the fact that suicide was the 2nd leading cause of death among this age group in West Virginia in that year.

Aggregated data displayed in Figure 4 (page 3) show that adolescent, or teenage, suicides in West Virginia fell from a rate of 6.7 deaths per 100,000 population in 1993-95 to 5.7 in 1999-2001 (a decline of 15%), compared with rates of 6.0 and 4.6, respectively, in the United States for the same three-year groupings (a decline of 23%). While the state rates do indicate a downward trend, this decrease is occurring at a slower rate than in the nation. Although still less likely than males to succeed in taking their own lives, females accounted for a larger percentage of suicides among 10- to 19-year-olds than among total suicides. Nearly three out of every 10 (29%) adolescent suicides in West Virginia in 1999-2001 were female, compared with 17% of adolescent suicides nationally.

Figure 8. Firearm-related suicide rates among adolescents aged 10-19
West Virginia and United States
1993-1995, 1996-1998, 1999-2001

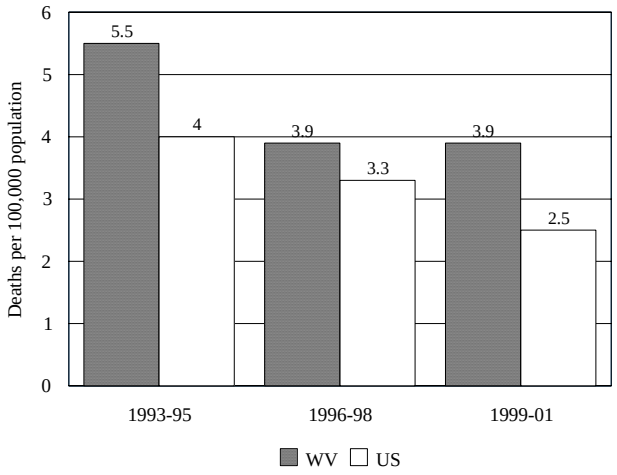
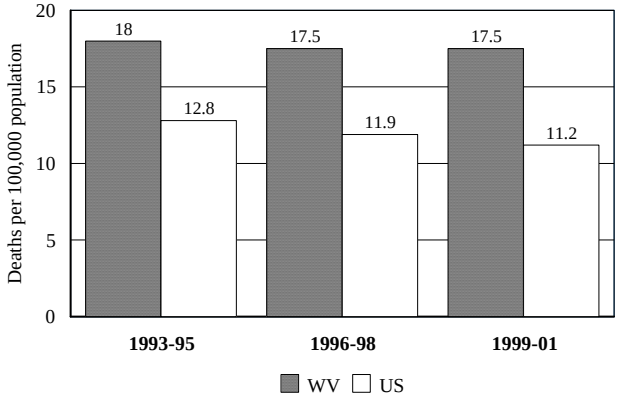


Figure 9. Firearm-related suicide rates among older adults aged 65+
West Virginia and United States
1993-1995, 1996-1998, 1999-2001



State data on teenage firearm suicides do not follow the national trend. Although West Virginia's firearm suicide rate among adolescents fell from 5.5 deaths per 100,000 population in 1993-95 to 3.9 in 1996-98, the rate remained constant in 1999-2001. The national rate, however, continued its decline, to 2.5 in 1999-2001. Figure 8 illustrates these differences. Among West Virginia's 1999-2001 adolescent firearm suicide victims, 25% were female, compared with 12% nationwide.

Older Adults. Older adults, those aged 65 and older, also are of great concern because the highest rates of suicide occur among this age group, both state- and nationwide; in fact, it is estimated that an older adult commits suicide every 83 minutes (3). Figure 5 on page 3 shows higher rates among older adults than among other age groups across all three time periods in our study.

Males predominate in this age group as they do in the others, accounting for 84% and 85% of older suicides in the United States and West Virginia, respectively. Firearms constitute an even higher proportion of suicide method among older adults, responsible for 73% of older adult suicides nationally and **88%**, nearly 9 out of 10, of comparable suicides in West Virginia. As Figure 9 indicates, firearm-related

suicide rates among older West Virginians have remained virtually unchanged over the past decade, while national rates have decreased over the same period.

Discussion. It is not surprising that West Virginia's rates of firearm suicide are higher than the national rates since gun ownership is more common in the Mountain State than in most other states. A 1992 report published in the *New England Journal of Medicine* studied the strength of the association between firearm availability and suicide (4). The authors found that the risk of suicide increased nearly fivefold with the presence of one or more guns in the household. In 2002, West Virginia ranked 6th in the nation in the percentage of adults who reported having firearms in or around their homes, according to data from the Behavioral Risk Factor Surveillance System[1] (BRFSS) survey. Overall, 58% of survey respondents possessed firearms, 66% of males and 52% of females, with ownership increasing with age. Among adolescents, Youth Risk Behavior Surveillance System[2] (YRBSS) survey data from 2003 showed that students in West Virginia were more likely to have possession of a gun than their national peers. Nineteen percent (19%) of male students in the state and 2% of female students reported having carried a firearm in the month before they were surveyed.

Firearms are different from other weapons in that they are far more lethal. Firearm suicide attempts result in death from 70% to 90% of the time; suicide attempts using any other means have a success rate of only 10% to 15% (5). Suicides are often impulsive events, especially among youth, and the use of a method other than a firearm could change the outcome of the attempt. Regardless of age, however, availability and lethality are a dangerous combination, especially to someone suffering from depression. Data published by the National Strategy for Suicide Prevention (a collaborative effort of several governmental agencies including the Substance Abuse and Mental Health Services Administration and the CDC) estimate that, nationally, 20% of adults over the age of 65 who commit suicide visit a doctor within 24 hours prior to the event, 41% see a doctor within a week, and 75% visit a doctor within one month (6). It is urgent to improve detection and treatment of depression in order to reduce the risk of suicide among the elderly, as well as among other age groups. Primary care physicians, physician assistants, and nurse practitioners (i.e., those health professionals who see patients on a regular and frequent basis), in particular, need to be better able to identify those persons at risk for depression, for proper treatment can be lifesaving. All suicides, but particularly firearm suicides, pose a serious problem in West Virginia that our health professionals need to address.

[1] The BRFSS is a monthly telephone survey established by the CDC that allows states to monitor health behaviors among their adult populations (aged 18+). The BRFSS included 54 states and territories in 2002. Firearm possession prevalence was measured in West Virginia in 1995, 1996, 2001, and 2002.

[2] The YRBSS was developed by the CDC to monitor health-risk behaviors among youth and young adults and has been conducted in odd-numbered years since 1991. National, state, territorial, and local school-based surveys of 9th through 12th graders are included.

References

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