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Division of Biometry and Epidemiology
Alcohol Epidemiologic Data System

SURVEILLANCE REPORT #56

TRENDS IN ALCOHOL-RELATED FATAL TRAFFIC CRASHES, UNITED STATES, 1977-99

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HIGHLIGHTS

This is the 16th annual surveillance report from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) on trends in alcohol-related fatal traffic crashes. Data in this report were compiled from sources provided by the National Highway Traffic Safety Administration (NHTSA), the Federal Highway Administration (FHA), and the U.S. Census Bureau. The following are highlights of both changes in alcohol-related fatal traffic crashes between 1998 and 1999 and trends for the 23-year period from 1977 through 1999:

General Trends and Fatality Rates

- In 1999 the proportion of traffic crash fatalities that were alcohol-related reached a 23-year low of 30.1 percent.
- From 1998 to 1999 alcohol-related traffic crash fatalities decreased 1 percent, while nonalcohol-related traffic crash fatalities increased 1 percent.
- From 1977 to 1999 alcohol-related traffic crash fatalities per 100 million vehicle miles traveled, 100,000 population, 100,000 registered vehicles, and 100,000 licensed drivers decreased 61, 42, 51, and 47 percent, respectively.
- The number of years of potential life lost (YPLL) attributable to alcohol-related traffic crashes declined 35 percent for males and 33 percent for females over the 23-year period.
- From 1977 to 1999 the number of male drivers involved in alcohol-related fatal traffic crashes decreased 32 percent; for females the number increased 6 percent.

Blood Alcohol Concentration (BAC) Testing and Results

- In 1999 the national rate of BAC testing of drivers killed in traffic crashes was 74 percent, up from 55 percent in 1977.
- Seventy-seven percent of drivers with positive BAC results were legally intoxicated, having BAC scores of 0.10 grams per deciliter (g/dl) or higher at the time of their crashes in 1999. If the legal BAC limit were lowered to 0.08 in all States, an additional 6 percent of the BAC positive drivers would have been considered legally intoxicated.

Young Drinking Drivers

- In 1999 deaths (including driver, passenger, and pedestrian deaths) associated with young drinking drivers ages 16 to 24 remained about the same as in the previous year, representing a 53-percent decline from 1977.
- The number of young drinking drivers ages 16 to 24 killed in traffic crashes increased 4 percent from 1998 to 1999, while the 1999 total was 49 percent lower than that in 1977.
- After a continuous decline for 5 years beginning in 1990, the proportion of alcohol involvement among young drivers ages 16 to 20 in fatal traffic crashes reached a 23-year low (19.5 percent) in 1995, representing a 47-percent reduction from the peak (36.5 percent) in 1982. It then showed an increase to 20.3 percent in 1996 and remained 20.2 percent in 1997 and 1998. In 1999 the proportion again decreased to its lowest point, 19.5 percent.

INTRODUCTION

This surveillance report on alcohol-related¹ fatal traffic crashes is one in a series of surveillance reports designed to provide useful data to researchers, planners, policymakers, and other professionals interested in alcohol abuse and its associated illnesses and

mortality. It is hoped that these documents, prepared by NIAAA's Alcohol Epidemiologic Data System (AEDS), will serve as useful references for workers in the alcohol field.

Other surveillance report topics include apparent per capita consumption of alcoholic beverages, discharges of hospital patients with alcohol-related conditions, and liver cirrhosis mortality. This 16th annual surveillance report on trends in alcohol-related fatal traffic crashes updates previous surveillance reports.

¹ The terms "alcohol-related" and "alcohol-involved" are used interchangeably throughout this report.

The 1999 mortality statistics show that the category of “accidents (unintentional injuries)” was the number one cause of death for persons in the age groups of 1 to 4, 5 to 14, 15 to 24, and 25 to 44 in the United States; motor vehicle accident fatalities represented 34, 57, 75, and 50 percent of the deaths in this category for the four age groups, respectively. Overall, this category was the fifth leading cause of death in the United States in 1999; 44 percent of the deaths were due to motor vehicle accidents (Kochanek et al. 2001). From 1977 through 1999 an average of approximately 45,000 people per year died in traffic crashes.

The Surgeon General’s Workshop on Drunk Driving (Office of the Surgeon General 1989) emphasized the need for accurate and timely epidemiologic data to address the Nation’s drinking and driving problem. Over the past 19 years, AEDS staff have periodically reported on various aspects of alcohol-related traffic fatalities (Aitken and Zobeck 1985; Campbell et al. 1995, 1996; Grigson et al. 1985; Lane et al. 1997; Lowman et al. 1983; Malin et al. 1982; Malin and Verdugo 1984; Verdugo et al. 1983; Yi et al. 1998, 1999, 2000; Zobeck 1986; Zobeck et al. 1986, 1987, 1988, 1989, 1990, 1991a, b, 1992, 1993, 1994a, b).

Sources and Limitations of Data

The major data source for this report is the U.S. Department of Transportation’s Fatality Analysis Reporting System (FARS). FARS contains data on all traffic crashes within the United States that involve a motor vehicle traveling on a trafficway customarily open to the public and that result in the death of a vehicle occupant or nonmotorist within 30 days of the crash. The system is operated by NHTSA in cooperation with the States. FARS collects detailed data on the conditions of a crash, the vehicle(s) involved, and the driver(s) and other person(s) involved. These data are obtained from each State’s existing documents (e.g., police accident reports, death certificates, and hospital medical records).

The following two variables in FARS are used in this report to define alcohol involvement:

- *Officer’s judgment.*—The judgment of the investigating officer regarding the presence of alcohol in a person involved in a fatal crash.
- *BAC test.*—A finding from any one of several chemical tests that measure the amount of alcohol in the blood.

In this report, the definition of an alcohol-related traffic crash is based on the alcohol involvement of the driver. A traffic crash is considered to be alcohol-related if either the officer’s judgment variable is coded “yes” or the BAC test is positive for at least one driver involved in the crash. A fatality is considered to be alcohol-related if the death occurs as the result of an alcohol-related crash.

In contrast to the definition used in this report, NHTSA defines a traffic crash as alcohol-related if either a driver or a nonmotorist has a measurable or estimated BAC of 0.01 g/dl or above. NHTSA uses a statistical procedure to estimate unknown BAC values based on data for drivers with known BAC values (Klein 1986a, b). Thus the methodology in this report for determining alcohol involvement in fatal crashes differs from that used by NHTSA in the following three respects: (1) two alcohol involvement variables are used to identify a crash as alcohol-related, (2) only drivers’ alcohol involvement is used to determine the nature of a crash, and (3) no estimation procedures are used for unknown BAC values. Therefore, caution must be used while taking data from this report and from the estimates made by NHTSA.

Alcohol involvement rates discussed in this report should be viewed as conservative estimates for the following reasons:

- Police are reluctant to judge alcohol involvement, even in fatal crashes (yet when they do so, they are correct more than 90 percent of the time [Mercer 1985]);
- BAC tests are not administered consistently and routinely across jurisdictions;
- AEDS does not impute a value when the BAC level is missing from FARS data; and

- Only alcohol-involved drivers flag accidents as alcohol-related; thus a traffic crash involving an alcohol-impaired pedestrian, without evidence that the driver(s) had been drinking, would not be included in this enumeration of alcohol-related crashes.

The first section of this report presents several rates. Denominator data for the rates are taken from the following sources:

- *Population estimates.*—U.S. Census Bureau estimates of the U.S. population as of July 1 of each year (U.S. Census Bureau 1977–95, 1998, 1999, 2000).
- *Registered vehicles, licensed drivers, and vehicle miles traveled.*—FHA, for each year (Federal Highway Administration 1978–2000).

Organization and Methodology

Data in this report are organized under the following headings:

- General trends and fatality rates;
- BAC testing and results; and
- Young drinking drivers.

Fatality rates, frequencies, and percentages are presented in graphic and tabular form. Graphics are incorporated into the text, and all tables are collected into an appendix. It is not within the scope of this report to exhaustively interpret every aspect of the data presented; rather, results are highlighted. The reader is encouraged to further analyze the data to identify findings not discussed in this report.

GENERAL TRENDS AND FATALITY RATES

This section first presents trends in numbers of traffic crashes, fatalities, and alcohol-related fatalities to indicate the magnitude of the problem of drinking and driving. Trends in four rates—traffic deaths per 100 million vehicle miles traveled (VMT), per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers—also are presented to put the raw frequencies into perspective. Then, data on YPLL due to alcohol-related traffic crashes are presented.

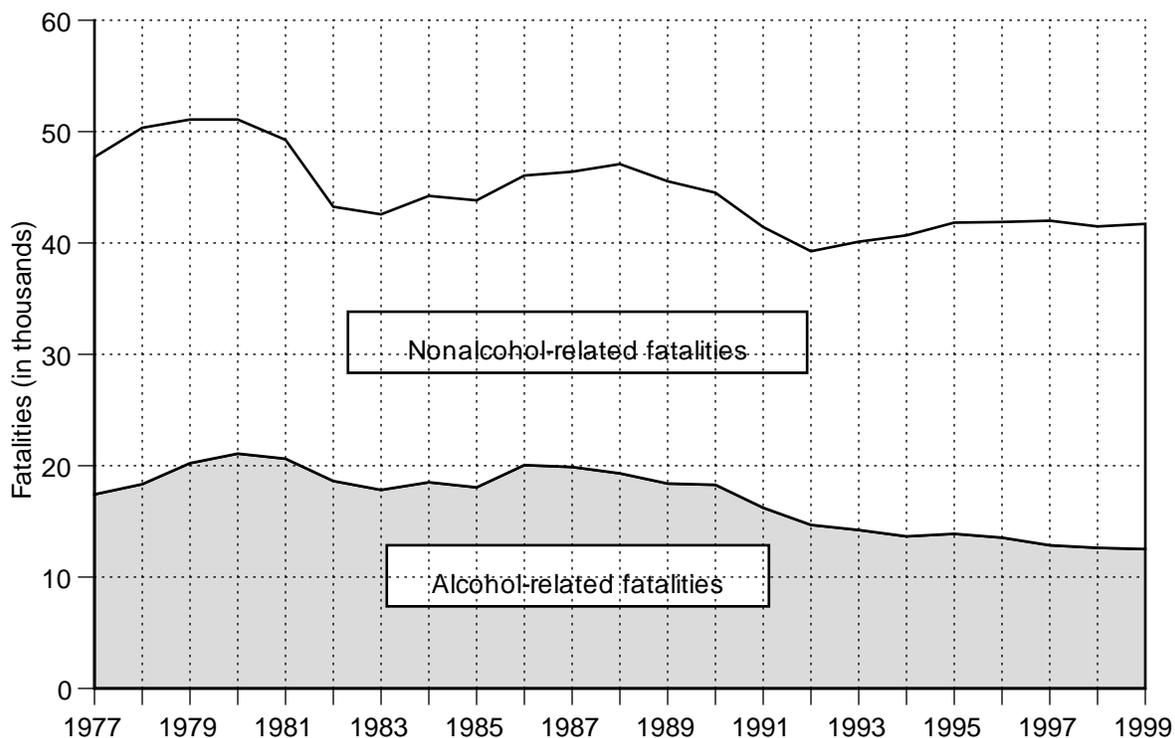
Next, data on alcohol-related fatalities according to age group are shown and the decedent's role in the crash (i.e., driver, passenger, or nonoccupant) is examined. Finally, the drivers are examined in more detail to determine the association of age and sex with involvement in alcohol-related fatal traffic crashes.

Trends in the Number of Traffic Crash Deaths

There were 41,717 traffic crash fatalities in 1999, a slight increase of 0.5 percent from the 1998 total of 41,501. The proportion of these fatalities that were alcohol-related was 30.1 percent in 1999, the lowest point since 1977 (see table 1 in the Appendix). This is the ninth straight year in which the percentage of alcohol-related traffic crash fatalities has decreased since 1991. The proportion of alcohol-related traffic crash deaths in 1999 is 6 percentage points lower than the proportion in 1977; 4,867 (28 percent) fewer alcohol-related traffic crash deaths occurred in 1999 than in 1977.

Figure 1 presents trends in both alcohol-related and nonalcohol-related traffic crash fatalities. The number of alcohol-related traffic crash fatalities increased slightly each year from 1977 to 1980. This was followed by a decreasing trend in alcohol-related traffic crash fatalities from 1981 to 1983. There was a sharp decrease in overall traffic crash fatalities in 1982, resulting from a substantial decrease in both nonalcohol- and alcohol-related fatalities. In 1984 traffic crash fatalities increased for both classes of fatalities, followed in 1985 by a slight increase in nonalcohol-related fatalities and a decrease in alcohol-related traffic crash fatalities. In 1986 there was a sharp increase (11 percent) in alcohol-related deaths, while nonalcohol-related deaths showed only a modest (1 percent) increase. Beginning in 1987, the number of alcohol-related traffic crash fatalities decreased each year except in 1995, ending with a 23-year low of 12,547 fatalities in 1999. The number of nonalcohol-related traffic crash fatalities did not follow the same downward trend in these years, with increases in 1987, 1988, 1993 through 1997, and 1999.

Figure 1. Alcohol-related and nonalcohol-related traffic crash fatalities, United States, 1977–99.



Trends in the Rates of Traffic Crash Deaths

The probability of having or being involved in a traffic accident depends on several factors (e.g., the amount of time a person spends on the road, the number of miles driven, vehicle speed, or type of vehicle driven). Four associated “risk factors”—VMT, the number of people in the population, the number of registered vehicles, and the number of licensed drivers—are frequently used to express traffic crash fatalities as rates per these denominators. These rates place the raw frequencies within a context of associated risk factors, each of which is subject to change over the years. Figures 2a to 2c graphically present these rates for all fatalities and for alcohol-related fatalities; the data for these figures are included in table 2.

Figure 2a illustrates the downward trends from 1977 to 1999 in total and alcohol-related traffic crash fatalities per 100 million VMT. In 1999 both total and alcohol-related traffic crash fatalities per 100 million VMT decreased. Figures 2b and 2c indicate that trends are similar for both total and alcohol-related traffic

crash fatalities per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers. Each of these rates decreased slightly from 1998 to 1999.

Table 2 in the Appendix indicates that, from 1977 to 1999, total traffic crash fatality rates decreased 52, 30, 41, and 35 percent per 100 million VMT, per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers, respectively. Corresponding decreases in these rates for alcohol-related fatalities (61, 42, 51, and 47 percent per 100 million VMT, per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers, respectively) likewise show a substantially greater decrease over the 23-year study period. The rates for total and alcohol-related traffic crash fatalities during this period decreased, even though the highways have become more crowded.

Trends in Years of Potential Life Lost

YPLL is a measure used to assess the human cost of a particular cause of death. In this report, YPLL is calculated by subtracting

Figure 2a. Total and alcohol-related traffic fatality rates per 100 million vehicle miles traveled (VMT), United States, 1977–99.

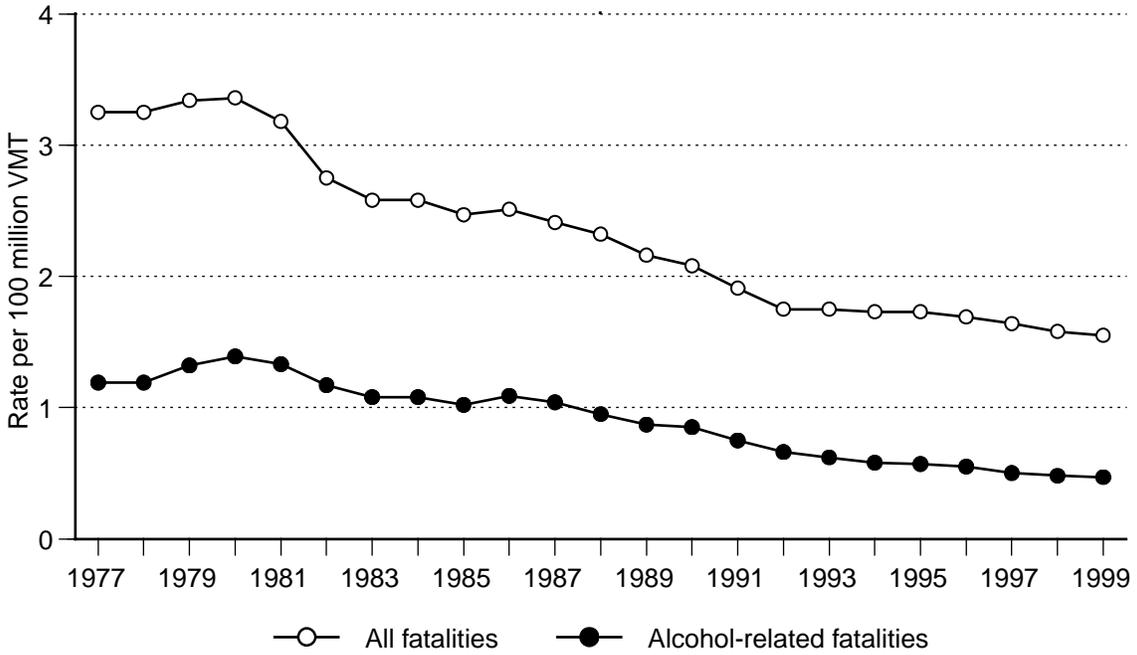


Figure 2b. Traffic fatality rates per 100,000 population, registered vehicles, and licensed drivers, United States, 1977–99.

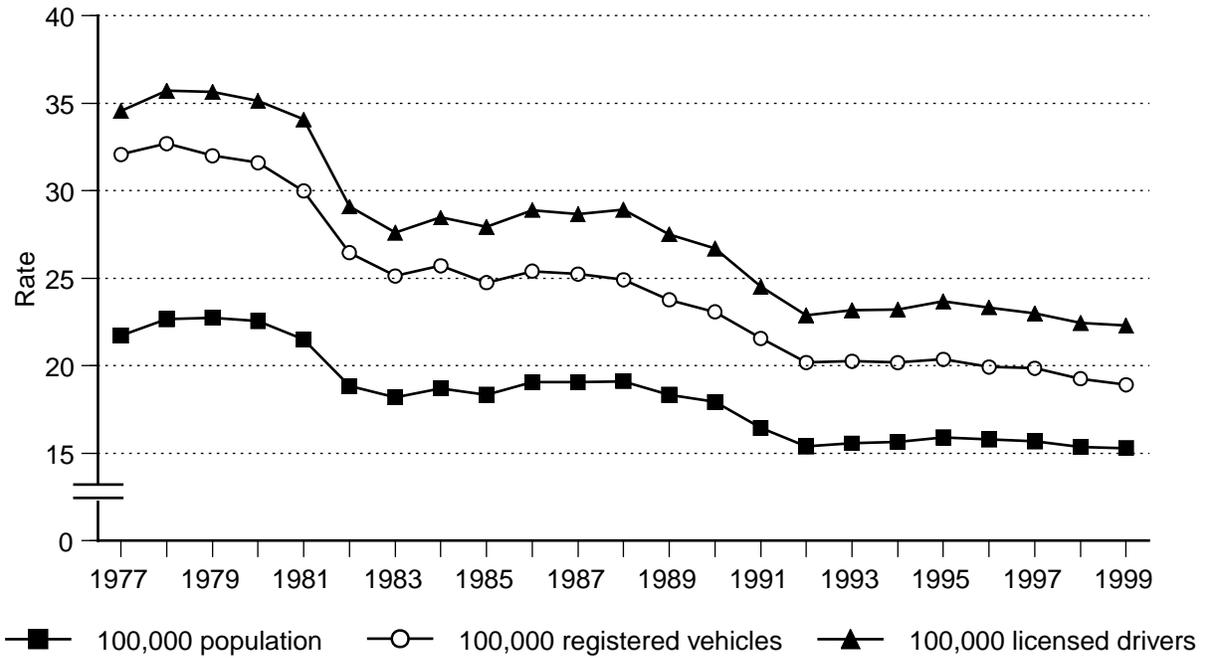
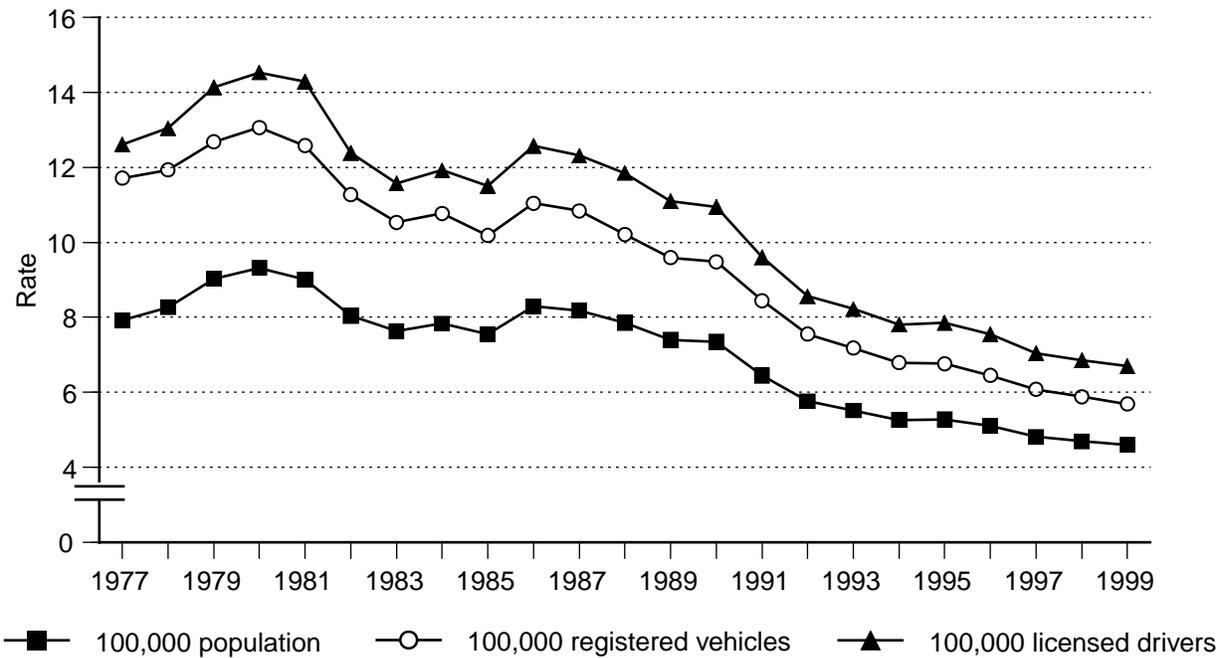


Figure 2c. Alcohol-related traffic fatality rates per 100,000 population, registered vehicles, and licensed drivers, United States, 1977–99.



the age at death from age 65 for each death (for decedents under age 65 only) and then accumulating the total across all deaths. The technique is especially useful for indicating the impact of causes of death that particularly affect youth, such as alcohol-related traffic crashes (e.g., Bertolucci et al. 1985; Centers for Disease Control 1988a, b; McDonnell and Maynard 1985; Romeder and McWhinnie 1977). Total YPLL, mean YPLL, and rate of YPLL per 100,000 population under age 65 for all traffic crash deaths and for alcohol-related traffic crash deaths are presented in table 3 in the Appendix.

In 1999 YPLL due to all traffic crashes totaled 1,122,209, representing 774,709 years among males and 347,500 years among females. These figures for males and females represent a 31- and 14-percent decrease in YPLL due to fatal traffic crashes, respectively, from the 1977 totals. From 1977 to 1999, the rate of YPLL per 100,000 population under age 65 for all traffic crash deaths declined 45 percent among males and 30 percent among

females. From 1998 to 1999, the total YPLL from traffic crashes increased slightly among both males and females (1.2 and 0.5 percent, respectively). Similarly, the rate of YPLL per 100,000 population under age 65 for all traffic crash deaths had a slight increase of 1 YPLL among both males and females from 1998 to 1999.

In 1999, 39 percent of the YPLL (304,133 years) among males and 26 percent of the YPLL (90,767 years) among females were attributable to alcohol-related crashes. These YPLL figures represent a 35- and 33-percent decrease for males and females, respectively, in YPLL attributable to alcohol-related crashes when compared with YPLL figures for 1977. From 1977 to 1999, the rate of YPLL per 100,000 population under age 65 for alcohol-related traffic crash deaths declined 48 percent among males and 45 percent among females.

The mean YPLL from alcohol-related fatalities for males varied over the 23-year study period, with the highest in 1979 (36.5 years)

and the lowest in 1999 (32.9 years). Among females, the highest mean YPLL occurred in 1978 (37.4 years) and the lowest in 1997 (33.8). The mean was 34.0 years in 1999.

Age Trends in Alcohol-Related Traffic Crash Fatalities

In 1999 approximately 75 percent of those killed in alcohol-related fatal traffic crashes were ages 16 to 44 (see table 4 in the Appendix). The proportion of persons ages 16 to 24 killed in alcohol-related traffic crashes decreased 14 percentage points from 1977 to 1999, while the proportion of persons ages 25 to 44 killed in alcohol-related traffic crashes increased 13 percentage points during the same period. As a result, while decedents aged 16–24 constituted the largest proportion (43.2 percent) in 1977 among the age groups presented in table 4, decedents aged 25–44 were the largest group (45.5 percent) in 1999, a pattern that began in 1983. In the period between 1977 and 1999, the percentage of decedents under age 16 in alcohol-related traffic crashes decreased from 5.5 to 3.8. During the same period, the percentage of decedents over 64 in alcohol-related crashes fluctuated between 4 and 5.5, while it was 4.9 percent in 1999.

Decedent’s Role in Fatal Traffic Crashes

Analyses of FARS data suggest that a person’s alcohol involvement and risk of death vary by role (i.e., driver, passenger, or nonoccupant²) in the crash (see table 5 in the Appendix). In 1999, 35 percent of all driver deaths, 30 percent of all passenger deaths, and 10 percent of all nonoccupant deaths were alcohol-related.

Further analysis of the role of the decedents in crashes indicates that drivers were the largest group among the three role groups in either alcohol-related or nonalcohol-related crashes. However, drivers’ proportion in the total fatalities is larger in alcohol-related crashes than in nonalcohol-related crashes (see figures 3a and 3b). The percentage of passenger deaths was similar in alcohol-related and nonalcohol-related traffic crashes; however, there was a higher proportion of

nonoccupant deaths in nonalcohol-related traffic crashes than in alcohol-related traffic crashes.

More detailed data on drivers show that there were more than 3.5 times as many male drivers as female drivers involved in fatal traffic crashes from 1977 to 1999. The overall male-to-female ratio for alcohol-involved drivers was about 7 during the 23-year period, twice as high as that for all drivers. However, the gap between the sexes gradually narrowed and the male-to-female ratio dropped from 4.5 and 8.7 in 1977 to 2.7 and 5.5 in 1999 for total and alcohol-involved drivers, respectively (see table 6 in the Appendix). Furthermore, the percentage of alcohol-involved male drivers was twice as high as the percentage of alcohol-involved female drivers. The percentage of alcohol-involved drivers for both sexes reached a 23-year low in 1999. The number of male drivers involved in fatal traffic crashes decreased 16 percent from 1977 to 1999, while the number of female drivers involved in fatal traffic crashes increased 37 percent during the same period. The number of alcohol-involved male drivers decreased 32 percent (from 14,199 to 9,656) from 1977 to 1999; the number of alcohol-involved female drivers increased 6 percent (from 1,628 to 1,720). From 1998 to 1999, the number of alcohol-involved drivers decreased 1 percent among males and 3 percent among females.

BAC TESTING AND RESULTS

This section presents the national trends in BAC testing rates over the 23-year study period from 1977 to 1999. The rates are also presented across State jurisdictions and by driver’s age, sex, and injury severity. Finally,

² The nonoccupant category includes the more detailed categories of pedestrian, pedalcyclist, other nonoccupant role, and unknown person role. In an earlier traffic fatality surveillance report (Zobeck 1986), data for each category were presented. However, because the majority of persons in these categories were pedestrians, all cases have been combined into a single category (nonoccupant) for this report.

Figure 3a. Decedent's role in nonalcohol-related traffic fatalities, United States, 1999.

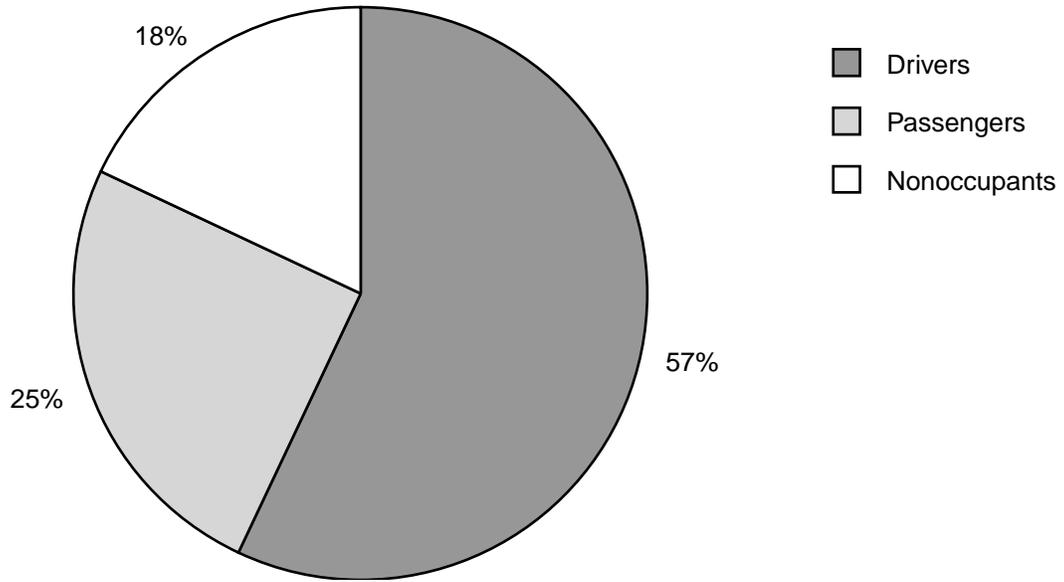
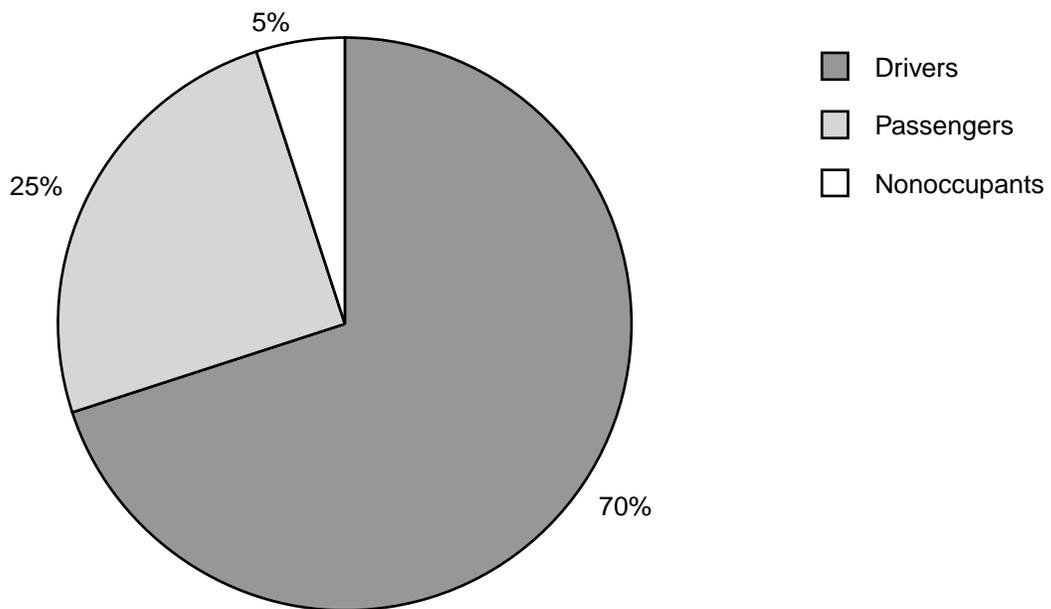


Figure 3b. Decedent's role in alcohol-related traffic fatalities, United States, 1999.



percentage distributions of BAC test results³ according to age and sex are examined.

Rates of BAC Testing

The national trends in administering BAC tests to drivers over the 23-year period from 1977 to 1999 are illustrated in figure 4 (data presented in table 7 in the Appendix). The testing rate for dead drivers increased from 55 percent in 1977 to 74 percent in 1999, with a 23-year high of nearly 80 percent in 1989. Among surviving drivers the testing rate has been much lower, but also has increased from 16 percent in 1977 to 30 percent in 1999.

As indicated in table 8 in the Appendix, BAC tests have not been administered consistently across States. In 1977 only 11 States tested their dead drivers 80 percent of the time or more. The rates of testing among States varied widely, from 1 percent in

Mississippi to 92 percent in Oregon and Nevada. In 1999, 27 States tested their dead drivers 80 percent of the time or more. There was a wide range of testing rates among States in 1999 also, with the District of Columbia having the lowest rate (0 percent) and Maryland the highest (99 percent).

Testing rates for surviving drivers are even lower than those for dead drivers because many States prohibit mandatory testing of surviving drivers (although refusal to submit to a test may be used as evidence of intoxication in some jurisdictions). While the rates increased substantially from 1977 to 1999, only three States (Georgia, Maine, and Nebraska) tested more than 80 percent of its surviving drivers in 1999.

As of January 1, 1999, 32 States had enacted legislation mandating BAC testing of drivers killed in traffic crashes (National Highway Traffic Safety Administration 1999a). In 1999, 14 of these 32 States tested fewer than 80 percent of their drivers killed in fatal traffic crashes (see table 8 in the Appendix).

³ BAC is expressed as the weight of the amount of alcohol in a specified volume of blood (e.g., 0.10 grams of ethanol per deciliter of blood). The unit for BAC used in this report is grams per deciliter (g/dl).

Figure 4. Percentage of drivers involved in fatal traffic crashes and given BAC tests, according to injury severity, United States, 1977–99.

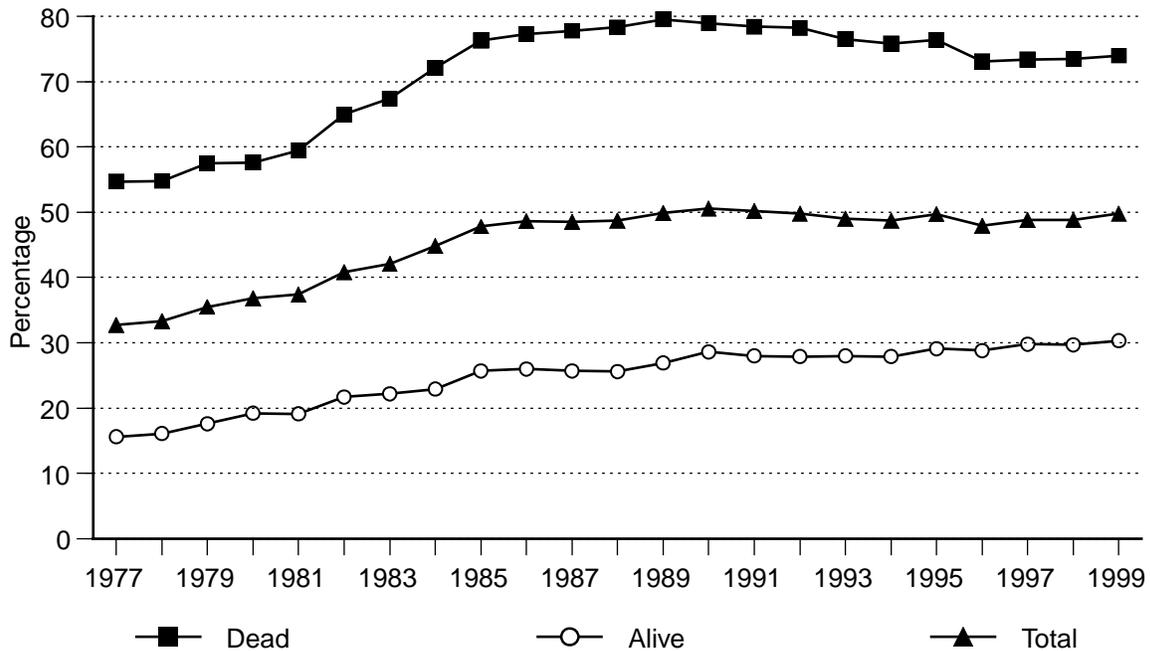


Table 9 in the Appendix presents comparisons of the number of drivers tested, as well as the percentage, according to sex, age, and survival status between 1977 and 1999. Testing of deceased male and female drivers increased from 1977 to 1999 across all age groups, with fairly consistent rates across the age groups for both 1977 and 1999, except for the 45 and older age group, which had the lowest rate of testing in both years. Testing rates were higher among males than among females for all age groups in 1999; this also was true in 1977.

The increase between 1977 and 1999 in the rates of BAC testing of surviving drivers involved in fatal traffic crashes is seen across all age groups for both males and females. Overall, the testing rate was almost double (from 17.2 in 1977 to 33.5 in 1999) for males and triple (from 9.2 in 1977 to 24.2 in 1999) for females. However, testing rates were still much lower among surviving drivers than among dead drivers.

Test Results

The mean BAC score for drinking drivers remained at 0.16 or 0.17 g/dl throughout the 23-year study period. Even higher than the mean BAC score for drinking drivers was the mean BAC score for pedestrians with positive BAC results. The mean BAC for this group held steady at 0.19 to 0.21 g/dl (numbers not included in any of the Appendix tables).

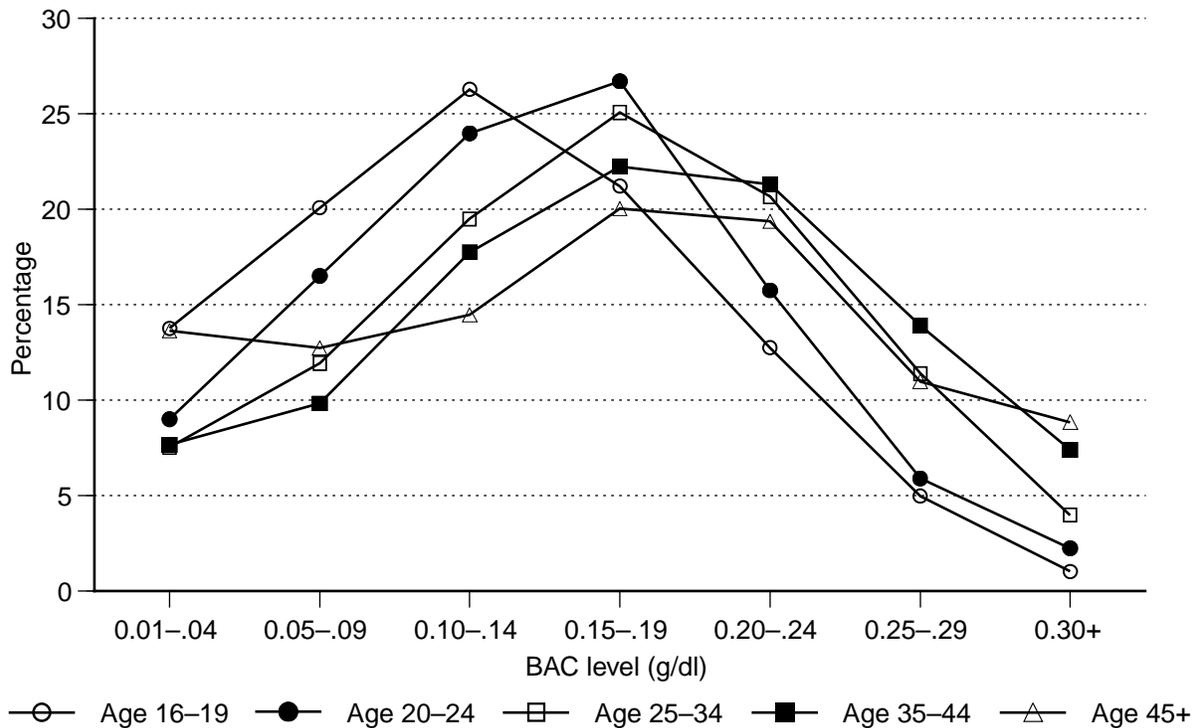
A detailed examination of the level of intoxication among drinking drivers is provided by the distributions of their BAC levels. In past years AEDS analyses (Aitken and Zobeck 1985; Malin et al. 1982; Malin and Verdugo 1984) tracked the BAC percentages of drivers by age group to determine at what BAC value the greatest proportion of drivers in an age group become involved in fatal crashes. Figure 5 updates previous analyses by presenting data for 1999. Data for all 23 years are presented in table 10 in the Appendix. The current results continue to support previous evidence that the youngest drivers (ages 16 to 19) have a peak BAC level in the range of 0.10–0.14 g/dl, while older drivers have a peak

BAC level of 0.15–0.19 g/dl or higher. Young drivers may become involved in alcohol-related crashes at lower BAC levels than older drivers because young drivers tend to have limited experience with driving and their tolerance for alcohol usually is lower than that of older drinking drivers.

In most States a BAC test result of 0.10 g/dl or higher is considered evidence of intoxication. According to this BAC limit, in 1999 approximately 77 percent of drivers with positive BAC results were legally intoxicated at the time of the crash. Both males and females ages 35 to 44 were more likely than those in other age groups to have BAC results of 0.10 g/dl or higher. Across all age groups, BAC-positive male drivers were more likely than BAC-positive female drivers to be legally intoxicated at the time of the fatal traffic crash.

As of January 1, 1999, 15 States had lowered their legal BAC limit from 0.10 to 0.08 g/dl in an effort to reduce alcohol-related traffic crashes (National Highway Traffic Safety Administration 1999b). On October 23, 2000, the President of the United States signed the “Department of Transportation and Related Agencies Appropriation Act, 2001” into law. The Act requires all States to adopt an impaired driving threshold at 0.08 g/dl BAC, and sets sanctions (reduced Federal highway funds) for noncompliance, beginning in fiscal year 2004 (White House Press Release, October 23, 2000). To examine how the lowered BAC limit may affect alcohol-involved drivers in fatal traffic crashes, table 10 includes a category for the percentage of drivers having BAC levels of 0.08–0.09 g/dl. Under the lowered BAC limit, these drivers would be considered legally intoxicated. In 1999, about 6 percent of all drinking drivers (with a known BAC score) involved in fatal traffic crashes were in this category. These drivers would have been considered legally intoxicated along with the 77 percent who had a BAC score of 0.10 or above if all States had adopted 0.08 as the legal BAC limit for drivers. (This estimate may be conservative because all 50 States plus the District of Columbia have laws setting the BAC limit at

Figure 5. Percentage distributions of BAC among alcohol-involved drivers, according to age, United States, 1999.



0.02 or lower for youthful drivers [National Highway Traffic Safety Administration 1999b].)

YOUNG DRINKING DRIVERS

The problem of young drinking drivers has long been of interest to AEDS (Aitken and Zobeck 1985; Lowman et al. 1983; Malin et al. 1982, 1985a, b; Verdugo et al. 1983). This section reexamines and updates several issues and trends discussed in prior AEDS analyses of young drivers ages 16 to 24. Beginning with the 1999 issue of this surveillance report (Yi et al. 1998), this section also includes a separate analysis focusing on drivers ages 16 to 20.

Young Drivers Ages 16 to 24

As table 11 in the Appendix indicates, there were 3,934 deaths associated with young (i.e., ages 16 to 24) drinking drivers in 1999. This total remained almost the same as the 1998 total (3,936) after a continuous decline that began in 1987. The 1999 total represents a 60-percent decrease from the 23-year high of 9,918 in 1980. In 1999, 61 percent of the

decedents in fatalities associated with young drinking drivers were drivers, 36 percent were passengers, and 3 percent were nonoccupants.

From 1977 to 1999, deaths decreased 3 percent (25,782 versus 25,091) among drivers of all ages and 18 percent (9,662 versus 7,901) among drinking drivers of all ages⁴ (see table 12 in the Appendix). The reduction in traffic crash fatalities for young drivers over the 23-year period was much greater than that for drivers ages 25 and older, with a decrease of 40 percent (from 10,091 in 1977 to 6,029 in 1999) among all young drivers and 49 percent (from 4,191 to 2,136) among young drinking drivers. Of total driver fatalities, the young drivers' share decreased 15 percentage points (from 39.1 to 24.0). Of drinking driver fatalities, the young drivers' share decreased 16 percentage points (from 43.4 to 27.0).

⁴ In this section, those under age 16 and those whose age is unknown are excluded from the analysis.

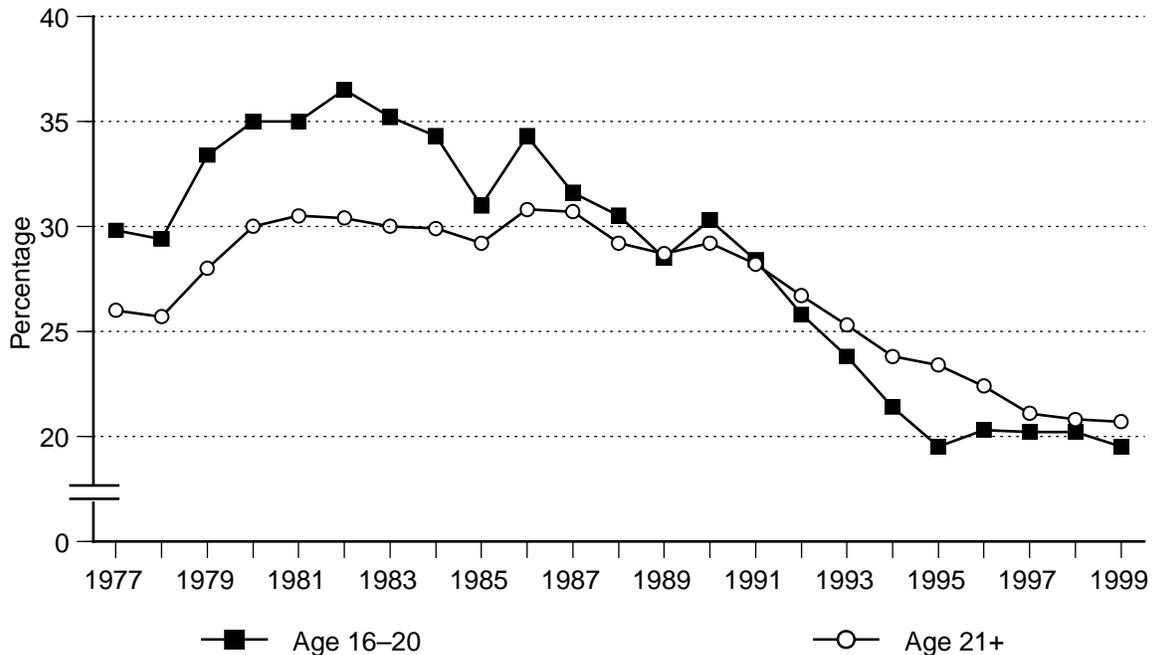
Compared with 1998, the number of driver fatalities in 1999 increased 4.2 percent (from 5,786 to 6,029) for young drivers and 3.6 percent (from 2,062 to 2,136) for young drinking drivers; the latter was the second, consecutive increase after a continuous decline since 1987. While the 1999 figure for young drinking drivers represents a 58-percent decrease from the peak year of 1980, young drivers continue to be over-represented in drinking driver deaths. For example, in 1999 persons ages 16 to 24 accounted for 27 percent of all such deaths, but constituted less than 14 percent of the licensed driver population in the United States (Federal Highway Administration 2000).

Young Drivers Ages 16 to 20

Because of the lack of driving experience and the tendency to engage in risk-taking behavior among teenage drivers, drinking and driving by this age group has been one of the major concerns in the traffic safety and public health sector. Analyses of 1999 FARS data

show that the fatal traffic crash involvement rate per 100,000 licensed drivers for young drivers ages 16–20 was more than twice as high as that for drivers ages 21 and older (63.3 versus 27.1). Similarly, the rate of alcohol-involved drivers in fatal crashes was 12.3 per 100,000 licensed drivers among young drivers ages 16 to 20, whereas it was 5.6 for drivers ages 21 and older (data not shown in Appendix tables). Two of the major legislative efforts to reduce fatal traffic crashes among young drivers were raising the minimum drinking age to 21 and lowering the legal BAC limit for young drivers. Prior to 1988, the minimum legal drinking age varied from 18 to 21 across the States. By 1988, all 50 States and the District of Columbia legislated a minimum drinking age of 21 (National Traffic Safety Board 1993). Beginning in 1983, a few States enacted laws that lowered BAC limits for youths. With incentives set by Federal legislation in 1991 and 1995, by 1999 all 50 States plus the District of Columbia had laws setting BAC

Figure 6. Percentage of alcohol involvement among young drivers ages 16 to 20 and drivers ages 21 and older in fatal traffic crashes, United States, 1977–99.



limit of 0.02 or less for drivers under the age of 21 (National Highway Traffic Safety Administration 1999; Wagenaar et al. 2001). Analyses of the FARS data indicate that the trend in alcohol involvement among drivers under 21 has changed dramatically during the 23 years from 1977 to 1999. As the curves in figure 6 show (data presented in table 13 in the Appendix), during the late 1970s to the early 1980s the proportion of alcohol-involved drivers in fatal traffic crashes increased about 7 percentage points (from 29.8 in 1977 to 36.5 in 1982) among young drivers ages 16 to 20 and 5 percentage points (from 26.0 in 1977 to 30.5 in 1981) among drivers ages 21 and older. Since 1983 there has been a downward trend with a few fluctuations in the proportion among young drivers ages 16 to 20. The decline was more monotonic and steeper after 1990 than before 1990. In 1995, the proportion reached its lowest point of 19.5 percent for the 23-year period, representing a 47 percent reduction from the highest level (36.5 percent) in 1982. In contrast, the proportion of alcohol involvement among drivers ages 21 and older did not show substantial decline until 1991. Beginning in 1991, the proportion had a continuous decline and reached a 23-year low of 20.7 percent in 1999, resulting in a reduction of 32 percent from its highest point (30.8 percent) in 1986. It is important to note that prior to 1991, the proportion of alcohol-involved drivers in fatal traffic crashes among young drivers ages 16 to 20 was always higher than that among drivers ages 21 and older except in 1989. The two curves crossed over around 1991 as a result of a steeper decline in alcohol involvement among young drivers than among older drivers.

However, from 1995 to 1996, there was a slight increase in the number and the proportion of alcohol involvement among young drivers ages 16 to 20. In 1997 and 1998 the proportion remained about the same (20.2 percent). As shown in figure 6, with a continuous decline in the proportion of alcohol involvement among drivers ages 21 and older, the two curves appeared to converge again in 1998. From 1998 to 1999, young drivers'

alcohol involvement showed a slightly greater decline than that among drivers ages 21 and older, again reaching its lowest point of 19.5 percent.

CONCLUSIONS

There were 41,717 traffic crash fatalities in 1999, a slight increase of 0.5 percent from the 1998 total of 41,501 deaths. There was a 1-percent decrease in the number of alcohol-related traffic crash fatalities from 1998 to 1999. The percentage of all alcohol-related traffic fatalities also decreased slightly and reached a 23-year low of 30.1 percent. There was a 28-percent decrease from 1977 to 1999 in alcohol-related traffic crash fatalities. The rates of total traffic crash fatalities per million VMT, per 100,000 population, per 100,000 registered vehicles, and per 100,000 licensed drivers all decreased from 1998 to 1999, as did the rates of alcohol-related traffic crash fatalities per these denominators. From 1977 to 1999 alcohol-related fatalities per 100 million VMT dropped 61 percent, and alcohol-related fatalities per 100,000 population, registered vehicles, and licensed drivers decreased 42, 51, and 47 percent, respectively.

The number of YPLL due to alcohol-related traffic crashes decreased 35 and 33 percent for males and females, respectively, over the 23-year study period. As in previous years, compared with passengers and nonoccupants, drivers constituted the largest proportion of the fatalities in fatal crashes in 1999, whether alcohol-related or not. On the other hand, a higher percentage of nonoccupants were killed in nonalcohol-related traffic crashes than in alcohol-related traffic crashes. In 1999, the total number of deaths (including driver, passenger, and pedestrian deaths) associated with young drinking drivers ages 16 to 24 remained about the same as the total in 1998, representing a 53 percent decline from the total in 1977. Traffic crash fatalities among young drinking drivers increased 4 percent from 1998 to 1999. Although there was an overall reduction of 49 percent from 1977 to 1999 in young drinking driver fatalities, this age group continued to be over-represented in drinking driver fatalities.

This report also analyzed young drivers ages 16 to 20 separately. In 1999 the proportion of alcohol-involved drivers in fatal traffic crashes was 19.5 percent among young drivers ages 16 to 20, representing a decrease of 17 percentage points from the 23-year high in 1982. Prior to 1991, the proportion of alcohol-involved drivers in fatal traffic crashes among young drivers ages 16 to 20 was higher than that among drivers ages 21 and older except in 1989. Trends of the two proportions crossed over around 1991, and the proportion for young drivers ages 16 to 20 has remained the lower of the two since then.

This report is descriptive; therefore, no attempt has been made to analyze all possible factors that may explain the observed trends; however, the following are some factors that may have affected these trends.

Since 1987 there has been a decreasing trend in alcohol-related traffic crash fatalities. There are four possible reasons for this. First, it seems logical to assume that safety improvements for both vehicles and roadways, along with increased seatbelt use and passive restraint systems, have reduced both total and alcohol-related traffic crash fatalities. Second, public awareness of and activism against the problem of drinking and driving have increased. Third, in response to Federal initiatives, by 1988 all 50 States and the District of Columbia had in effect a minimum legal drinking age of 21; by 1999 all 50 States plus the District of Columbia had laws setting the BAC limit at 0.02 or lower for youthful drivers; and 15 States had lowered the legal BAC limit to 0.08 for drivers 21 and older. Finally, changes in police enforcement (e.g., sobriety checkpoints) and in consequences of alcohol-impaired driving (e.g., administrative license revocation) are likely to have contributed to reductions in drinking and driving over the years. Any effects that these factors, either singly or in combination, may have had on the present data are reviewed elsewhere (e.g., DeJong and Hingson 1998; Fell 1999; Hingson et al 1994; Little and Clontz 1994; Toomey et al. 1996; Vingilis and

Coultes 1990; Wagenaar et al. 1995, 2000; Zobeck and Williams 1994). However, continued surveillance of these data will assist in resolving issues regarding the strength and direction of the observed trends.

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Table 1. Traffic crashes, traffic crash fatalities, and alcohol-related traffic crash fatalities, United States, 1977–99.

Year	Event			
	Traffic crashes	Traffic crash fatalities (a)	Alcohol-related traffic crash fatalities (b)	Percent of all traffic crash fatalities (b/a)
1999.....	37,140	41,717	12,547	30.1
1998.....	37,107	41,501	12,663	30.5
1997.....	37,324	42,013	12,870	30.6
1996.....	37,351	41,907	13,557	32.4
1995.....	37,241	41,817	13,881	33.2
1994.....	36,254	40,716	13,693	33.6
1993.....	35,747	40,115	14,225	35.5
1992.....	34,942	39,250	14,684	37.4
1991.....	36,895	41,462	16,231	39.1
1990.....	39,779	44,529	18,279	41.0
1989.....	40,718	45,555	18,381	40.3
1988.....	42,130	47,087	19,303	41.0
1987.....	41,435	46,386	19,918	42.9
1986.....	41,090	46,082	20,038	43.5
1985.....	39,196	43,825	18,040	41.2
1984.....	39,622	44,241	18,523	41.9
1983.....	37,971	42,584	17,847	41.9
1982.....	38,899	43,721	18,622	42.6
1981.....	43,979	49,268	20,662	41.9
1980.....	45,271	51,077	21,114	41.3
1979.....	45,212	51,084	20,245	39.6
1978.....	44,433	50,327	18,362	36.5
1977.....	42,064	47,715	17,414	36.5

Table 2. Total and alcohol-related traffic fatality rates per 100 million VMT¹ and 100,000 population, registered vehicles, and licensed drivers, United States, 1977–99.

Year	Rate			
	100 million VMT ¹	100,000 population	100,000 registered vehicles ²	100,000 licensed drivers
All fatalities				
1999.....	1.55	15.30	18.92	22.29
1998.....	1.58	15.36	19.26	22.44
1997.....	1.64	15.69	19.86	22.99
1996.....	1.69	15.80	19.93	23.34
1995.....	1.73	15.91	20.37	23.68
1994.....	1.73	15.64	20.18	23.21
1993.....	1.75	15.56	20.26	23.17
1992.....	1.75	15.39	20.19	22.89
1991.....	1.91	16.44	21.56	24.53
1990.....	2.08	17.93	23.08	26.70
1989.....	2.16	18.35	23.76	27.52
1988.....	2.32	19.12	24.92	28.91
1987.....	2.41	19.06	25.24	28.67
1986.....	2.51	19.08	25.40	28.90
1985.....	2.47	18.35	24.74	27.94
1984.....	2.58	18.70	25.72	28.47
1983.....	2.58	18.20	25.13	27.61
1982.....	2.75	18.86	26.46	29.09
1981.....	3.18	21.49	29.99	34.07
1980.....	3.36	22.55	31.60	35.15
1979.....	3.34	22.75	32.00	35.65
1978.....	3.25	22.66	32.70	35.73
1977.....	3.25	21.71	32.07	34.55
Percent change 1977–99.....	-52.31	-29.53	-41.00	-35.49
Alcohol-related fatalities				
1999.....	0.47	4.60	5.69	6.70
1998.....	0.48	4.69	5.88	6.85
1997.....	0.50	4.81	6.08	7.04
1996.....	0.55	5.11	6.45	7.55
1995.....	0.57	5.28	6.76	7.86
1994.....	0.58	5.26	6.79	7.81
1993.....	0.62	5.52	7.18	8.22
1992.....	0.66	5.76	7.55	8.56
1991.....	0.75	6.44	8.44	9.60
1990.....	0.85	7.35	9.48	10.94
1989.....	0.87	7.40	9.59	11.10
1988.....	0.95	7.85	10.21	11.85
1987.....	1.04	8.18	10.84	12.31
1986.....	1.09	8.30	11.04	12.57
1985.....	1.02	7.55	10.18	11.50
1984.....	1.08	7.83	10.77	11.92
1983.....	1.08	7.63	10.53	11.57
1982.....	1.17	8.04	11.27	12.39
1981.....	1.33	9.01	12.58	14.29
1980.....	1.39	9.32	13.06	14.53
1979.....	1.32	9.02	12.68	14.13
1978.....	1.19	8.27	11.93	13.04
1977.....	1.19	7.92	11.71	12.61
Percent change 1977–99.....	-60.82	-41.90	-51.40	-46.84

¹ Vehicle miles traveled.

² Includes all private, commercial, and public-owned motor vehicles and motorcycles.

Table 3. Years of potential life lost (YPLL)¹ from total and alcohol-related traffic crashes, according to sex, United States, 1977–99.

Year and sex	YPLL						Percent alcohol-related ³
	All traffic crash deaths			Alcohol-related traffic crash deaths			
	Years	Mean	Rate ²	Years	Mean	Rate ²	
Male							
1999.....	774,709	32.4	651	304,133	32.9	256	39.3
1998.....	765,829	32.6	650	303,832	33.0	258	39.7
1997.....	775,404	32.8	664	307,183	33.0	263	39.6
1996.....	797,317	33.4	688	327,234	33.4	282	41.0
1995.....	811,619	33.5	708	338,327	33.4	295	41.7
1994.....	796,856	33.9	701	339,654	33.9	299	42.6
1993.....	797,541	33.9	709	353,734	34.0	314	44.4
1992.....	788,396	34.1	707	365,028	34.2	328	46.3
1991.....	858,689	34.5	779	418,068	34.8	379	48.7
1990.....	942,683	34.6	867	474,137	34.8	436	50.3
1989.....	954,983	34.7	881	470,095	34.8	434	49.2
1988.....	1,025,654	35.3	955	508,336	35.6	473	49.6
1987.....	1,027,956	35.4	966	519,312	35.5	488	50.5
1986.....	1,050,186	35.8	995	541,247	36.1	508	51.5
1985.....	979,059	35.4	936	478,682	35.8	458	48.8
1984.....	1,003,065	35.6	967	494,881	36.0	477	49.3
1983.....	978,208	35.7	951	482,922	36.1	470	49.3
1982.....	1,025,107	35.8	1,005	506,355	36.2	497	49.3
1981.....	1,159,566	35.8	1,148	557,533	35.9	552	48.0
1980.....	1,227,993	36.2	1,227	573,546	36.3	573	46.7
1979.....	1,238,294	36.4	1,277	555,113	36.5	572	44.8
1978.....	1,208,669	36.5	1,255	502,380	36.4	521	41.5
1977.....	1,129,628	36.4	1,181	471,103	36.3	492	41.7
Female							
1999.....	347,500	32.8	292	90,767	34.0	76	26.1
1998.....	345,936	32.6	293	93,775	33.9	79	27.1
1997.....	359,436	33.1	308	95,903	33.8	82	26.7
1996.....	360,535	33.4	312	102,493	34.0	89	28.4
1995.....	354,250	33.7	309	103,774	34.1	91	29.3
1994.....	346,319	34.0	305	103,579	35.2	91	29.9
1993.....	334,397	34.1	297	106,676	34.8	95	31.9
1992.....	326,300	33.9	293	110,685	34.9	99	33.9
1991.....	348,423	34.5	316	119,760	35.4	109	34.4
1990.....	368,300	34.1	338	134,199	35.3	123	36.4
1989.....	391,727	34.7	360	139,960	35.6	129	35.7
1988.....	395,517	35.0	366	147,453	35.9	136	37.3
1987.....	388,780	35.1	363	156,042	36.1	146	40.1
1986.....	375,095	35.4	353	150,375	36.8	141	40.0
1985.....	363,186	35.0	344	135,518	36.0	128	37.3
1984.....	362,792	35.0	346	143,108	36.4	137	39.4
1983.....	350,309	35.2	337	135,134	36.4	130	38.5
1982.....	354,195	35.8	343	140,526	37.0	136	39.6
1981.....	391,625	35.7	383	153,345	36.5	150	39.1
1980.....	415,668	36.1	410	163,612	36.9	161	39.3
1979.....	414,511	36.4	421	152,996	37.1	155	36.9
1978.....	420,690	36.7	430	139,372	37.4	142	33.1
1977.....	404,133	36.6	416	134,712	37.0	139	33.3

¹ Calculations excluded decedents with unknown age or sex.

² Number of YPLL per 100,000 population under age 65.

³ Number of alcohol-related YPLL expressed as a percentage of total YPLL.

Table 4. Alcohol-related traffic crash fatalities, according to age, United States, 1977–99.

Year	Age													
	Under 16		16–24		25–44		45–64		Over 64		Unknown		All ages	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1999	477	3.8	3,670	29.3	5,707	45.5	2,071	16.5	610	4.9	12	0.1	12,547	100.0
1998	481	3.8	3,709	29.3	5,737	45.3	2,061	16.3	662	5.2	13	0.1	12,663	100.0
1997	516	4.0	3,590	27.9	5,976	46.4	2,059	16.0	708	5.5	21	0.2	12,870	100.0
1996	514	3.8	3,909	28.8	6,337	46.7	2,054	15.2	717	5.3	26	0.2	13,557	100.0
1995	548	4.0	3,948	28.4	6,627	47.7	2,058	14.8	685	4.9	15	0.1	13,881	100.0
1994	606	4.4	4,108	30.0	6,316	46.1	1,927	14.1	724	5.3	12	0.1	13,693	100.0
1993	591	4.2	4,286	30.1	6,675	46.9	1,936	13.6	705	5.0	32	0.2	14,225	100.0
1992	602	4.1	4,463	30.4	6,854	46.7	1,951	13.3	792	5.4	22	0.2	14,684	100.0
1991	595	3.7	5,363	33.0	7,474	46.1	1,951	12.0	813	5.0	35	0.2	16,231	100.0
1990	711	3.9	5,897	32.3	8,530	46.7	2,284	12.5	832	4.6	25	0.1	18,279	100.0
1989	717	3.9	6,019	32.8	8,360	45.5	2,341	12.7	908	4.9	36	0.2	18,381	100.0
1988	789	4.1	6,974	36.1	8,371	43.4	2,274	11.8	865	4.5	30	0.2	19,303	100.0
1987	829	4.2	7,027	35.3	8,766	44.0	2,313	11.6	940	4.7	43	0.2	19,918	100.0
1986	842	4.2	7,685	38.4	8,372	41.8	2,202	11.0	864	4.3	73	0.4	20,038	100.0
1985	742	4.1	6,823	37.8	7,431	41.2	2,141	11.9	824	4.6	79	0.4	18,040	100.0
1984	727	3.9	7,359	39.6	7,427	40.0	2,176	11.7	831	4.5	64	0.3	18,584	100.0
1983	731	4.1	7,064	39.6	7,139	40.0	2,138	12.0	751	4.2	38	0.2	17,861	100.0
1982	794	4.3	7,629	41.0	7,123	38.8	2,244	12.1	768	4.1	64	0.3	18,622	100.0
1981	844	4.1	8,294	40.1	7,923	38.4	2,667	12.9	880	4.3	54	0.3	20,662	100.0
1980	955	4.5	8,941	42.4	7,637	36.2	2,676	12.7	834	4.0	71	0.3	21,114	100.0
1979	972	4.8	8,624	42.6	7,159	35.4	2,597	12.8	819	4.1	70	0.4	20,241	100.0
1978	926	5.0	7,884	42.9	6,290	34.3	2,416	13.2	773	4.2	73	0.4	18,362	100.0
1977	963	5.5	7,528	43.2	5,642	32.4	2,470	14.2	742	4.3	69	0.4	17,414	100.0

Table 5. Decedent's role in alcohol-related traffic crash fatalities, United States, 1977–99.

Year	Decedent's role									
	Driver		Passenger		Nonoccupant		Unknown		All	
	Number	Pct. ¹	Number	Pct. ¹	Number	Pct. ¹	Number	Pct. ¹	Number	Pct. ¹
1999.....	8,796	34.8	3,150	29.9	596	10.2	5	5.2	12,547	30.1
1998.....	8,688	35.1	3,300	31.3	672	11.0	3	2.8	12,663	30.5
1997.....	8,813	35.7	3,388	31.0	661	10.5	8	7.0	12,870	30.6
1996.....	9,193	37.6	3,647	33.1	713	11.3	4	3.8	13,557	32.4
1995.....	9,607	39.4	3,515	32.6	759	11.6	0	0.0	13,881	33.2
1994.....	9,428	39.8	3,514	33.4	751	11.7	0	0.0	13,693	33.6
1993.....	9,695	41.9	3,717	35.9	813	12.4	0	0.0	14,225	35.5
1992.....	9,986	44.2	3,901	38.2	796	12.5	1	1.2	14,684	37.4
1991.....	11,024	46.1	4,283	40.1	922	13.6	2	1.6	16,231	39.1
1990.....	12,425	48.3	4,775	42.3	1,076	14.4	3	2.8	18,279	41.0
1989.....	12,662	48.0	4,668	40.2	1,043	13.9	8	10.7	18,381	40.3
1988.....	13,156	48.3	5,041	42.7	1,096	14.0	10	5.3	19,303	41.0
1987.....	13,447	50.1	5,257	45.2	1,209	15.4	5	8.9	19,918	42.9
1986.....	13,501	50.7	5,294	46.1	1,237	15.8	6	5.6	20,038	43.5
1985.....	12,208	48.2	4,655	43.8	1,177	15.1	0	0.0	18,040	41.2
1984.....	12,484	48.8	4,780	45.2	1,252	15.7	7	6.4	18,523	41.9
1983.....	11,776	48.8	4,784	45.2	1,285	16.6	2	1.8	17,847	41.9
1982.....	12,143	49.3	5,023	46.5	1,450	17.7	6	6.7	18,622	42.6
1981.....	13,723	48.7	5,455	45.3	1,477	16.6	7	4.1	20,662	41.9
1980.....	13,851	48.1	5,746	44.3	1,509	16.5	8	5.8	21,114	41.3
1979.....	13,098	45.4	5,695	43.9	1,450	15.8	2	2.0	20,245	39.6
1978.....	11,773	41.6	5,273	40.2	1,316	15.0	0	0.0	18,362	36.5
1977.....	11,064	42.4	5,076	39.6	1,271	14.6	3	2.8	17,414	36.5

¹ Indicates the percentage of alcohol involvement among all decedents in the role category.

Table 6. Drivers involved in fatal traffic crashes, according to sex and alcohol involvement, United States, 1977–99.

Year	Sex											
	Male			Female			Unknown			Both sexes		
	All	Alcohol-involved	Percent	All	Alcohol-involved	Percent	All	Alcohol-involved	Percent	All	Alcohol-involved	Percent
1999	41,012	9,656	23.5	14,835	1,720	11.6	654	5	0.8	56,501	11,381	20.1
1998	40,816	9,724	23.8	15,089	1,781	11.8	699	4	0.6	56,604	11,509	20.3
1997	40,954	9,807	24.0	14,954	1,824	12.2	780	8	1.0	56,688	11,639	20.5
1996	41,223	10,377	25.2	14,798	1,942	13.1	772	7	0.9	56,793	12,326	21.7
1995	41,235	10,708	26.0	14,184	1,885	13.3	745	8	1.1	56,164	12,601	22.4
1994	40,233	10,695	26.6	13,567	1,822	13.4	749	3	0.4	54,549	12,520	23.0
1993	39,514	11,098	28.1	13,064	1,927	14.8	765	6	0.8	53,343	13,031	24.4
1992	38,598	11,533	29.9	12,596	1,982	15.7	707	12	1.7	51,901	13,527	26.1
1991	40,680	12,845	31.6	12,806	2,077	16.2	837	9	1.1	54,323	14,931	27.5
1990	44,281	14,618	33.0	13,726	2,309	16.8	886	9	1.0	58,893	16,939	28.8
1989	45,420	14,555	32.1	14,044	2,401	17.1	925	9	1.0	60,398	16,965	28.1
1988	47,402	15,529	32.8	13,951	2,384	17.1	900	7	0.8	62,253	17,920	28.8
1987	46,882	15,926	34.0	13,604	2,590	19.0	940	8	0.8	61,434	18,524	30.2
1986	46,648	16,193	34.7	12,744	2,315	18.2	939	9	1.0	60,331	18,517	30.7
1985	44,846	14,496	32.3	12,142	2,223	18.3	895	6	0.7	57,883	16,725	28.9
1984	44,704	14,946	33.4	11,901	2,273	19.1	893	6	0.7	57,498	17,225	30.0
1983	42,807	14,440	33.8	10,957	2,040	18.6	885	3	0.0	54,649	16,483	30.2
1982	44,165	15,090	34.2	10,628	2,042	19.2	976	5	0.5	55,769	17,137	30.7
1981	50,272	16,947	33.7	11,488	2,297	20.0	360	2	0.6	62,120	19,246	31.0
1980	51,451	17,141	33.3	11,460	2,236	19.5	28	3	10.7	62,939	19,380	30.8
1979	52,780	16,540	31.3	11,407	1,908	16.7	39	2	5.1	64,226	18,450	28.7
1978	52,235	15,019	28.8	11,337	1,694	14.9	26	1	3.9	63,598	16,714	26.3
1977	48,951	14,199	29.0	10,858	1,628	15.0	23	0	0.0	59,832	15,827	26.5

Table 7. Drivers involved in fatal traffic crashes and given BAC¹ tests, according to injury severity, United States, 1977–99.

Year	Drivers given BAC tests					
	Dead		Alive		Combined	
	Number	Percent ²	Number	Percent ²	Number	Percent ²
1999.....	18,681	74.0	9,458	30.3	28,139	49.8
1998.....	18,192	73.5	9,455	29.7	27,647	48.8
1997.....	18,111	73.4	9,533	29.8	27,644	48.8
1996.....	17,885	73.1	9,310	28.8	27,195	47.9
1995.....	18,635	76.4	9,255	29.1	27,890	49.7
1994.....	17,964	75.8	8,612	27.9	26,576	48.7
1993.....	17,696	76.5	8,476	28.0	26,172	49.0
1992.....	17,660	78.2	8,191	27.9	25,851	49.8
1991.....	18,769	78.4	8,515	28.0	27,284	50.2
1990.....	20,322	78.9	9,489	28.6	29,811	50.6
1989.....	20,972	79.5	9,116	26.9	30,138	49.9
1988.....	21,347	78.3	8,942	25.6	30,289	48.7
1987.....	20,873	77.8	8,902	25.7	29,775	48.5
1986.....	20,575	77.3	8,746	26.0	29,321	48.6
1985.....	19,324	76.3	8,362	25.7	27,686	47.8
1984.....	18,451	72.1	7,308	22.9	25,759	44.8
1983.....	16,257	67.4	6,766	22.2	23,023	42.1
1982.....	16,050	65.0	6,787	21.7	22,837	40.8
1981.....	16,756	59.4	6,486	19.1	23,242	37.4
1980.....	16,591	57.6	6,544	19.2	23,135	36.8
1979.....	16,584	57.5	6,239	17.6	22,823	35.5
1978.....	15,501	54.8	5,693	16.1	21,194	33.3
1977.....	14,316	54.7	5,290	15.6	19,606	32.7

¹ Blood alcohol concentration.

² Drivers given tests as percentage of total drivers.

Table 8. Drivers involved in fatal traffic crashes and given BAC¹ tests, according to State² and injury severity, United States, 1977 and 1999.

State	Drivers given BAC tests											
	1977						1999					
	Dead		Alive		Combined		Dead		Alive		Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	14,316	54.7	5,290	15.6	19,606	32.7	18,681	74.0	9,458	30.3	28,139	49.8
Alabama	235	35.9	111	15.2	346	25.0	437	57.3	231	30.8	668	44.2
Alaska.....	55	76.4	37	35.2	92	52.0	33	63.5	32	61.5	65	62.5
Arizona	217	52.8	126	19.4	343	32.4	413	78.4	94	11.0	507	36.7
Arkansas	41	12.7	26	6.9	67	9.6	287	70.5	167	44.3	454	57.9
California	2,299	87.2	780	21.9	3,079	49.7	1,649	91.3	722	25.9	2,371	51.7
Colorado.....	346	88.7	252	58.2	598	72.7	330	87.5	150	32.5	480	57.2
Connecticut.....	176	72.4	56	16.0	232	39.1	141	83.4	53	23.1	194	48.7
Delaware	50	84.8	68	68.0	118	74.2	57	87.7	55	63.2	112	73.7
District of Columbia.....	13	72.2	14	24.1	27	35.5	0	0.0	4	10.5	4	7.0
Florida	534	53.7	358	22.8	892	34.8	998	62.9	487	18.5	1,485	35.3
Georgia.....	336	42.3	184	20.0	520	30.3	835	89.9	956	83.3	1,791	86.2
Hawaii.....	69	88.5	5	4.4	74	38.7	44	89.8	43	46.7	87	61.7
Idaho	116	67.4	47	26.4	163	46.6	100	62.5	69	36.7	169	48.6
Illinois	706	59.5	41	2.6	747	26.9	800	88.7	277	24.6	1,077	53.1
Indiana.....	431	58.6	148	17.1	579	36.1	478	69.1	445	62.3	923	65.6
Iowa.....	207	51.8	53	13.8	260	33.2	194	60.4	190	50.0	384	54.8
Kansas	100	29.6	46	12.8	146	21.0	223	65.8	157	43.1	380	54.1
Kentucky.....	342	65.3	131	21.2	473	41.4	386	65.6	207	41.2	593	56.1
Louisiana.....	210	39.0	215	30.2	425	34.0	441	78.9	456	68.1	897	73.0
Maine	84	71.8	26	19.1	110	43.5	113	91.9	114	85.7	227	88.7
Maryland.....	165	48.8	33	7.1	198	24.6	356	98.6	60	12.1	416	48.4
Massachusetts.....	109	31.5	21	3.8	130	14.5	232	90.3	15	4.8	247	43.3
Michigan	636	60.5	200	13.0	836	32.2	690	80.7	422	36.9	1,112	55.6
Minnesota.....	256	55.4	56	9.8	312	30.1	371	87.3	298	61.2	669	73.4
Mississippi.....	4	1.0	13	3.0	17	2.0	397	63.4	262	44.6	659	54.3

Table 8. Drivers involved in fatal traffic crashes and given BAC¹ tests, according to State² and injury severity, United States, 1977 and 1999. (Continued)

State	Drivers given BAC tests											
	1977						1999					
	Dead		Alive		Combined		Dead		Alive		Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Missouri.....	167	24.5	55	6.9	222	15.1	539	73.8	95	12.5	634	42.6
Montana.....	103	60.2	6	3.7	109	32.5	67	47.2	39	34.8	106	41.7
Nebraska.....	143	69.1	120	52.0	263	60.1	186	93.9	162	81.0	348	87.4
Nevada.....	129	91.5	72	50.4	201	70.8	151	89.4	108	37.4	259	56.6
New Hampshire.....	76	88.4	27	25.7	103	53.9	89	91.8	56	62.2	145	77.5
New Jersey.....	441	82.0	148	17.3	589	42.2	312	81.3	227	37.7	539	54.6
New Mexico.....	134	39.3	86	20.4	220	28.8	218	92.0	53	16.5	271	48.5
New York.....	154	14.4	11	0.6	165	5.7	505	59.1	46	3.6	551	25.8
North Carolina.....	275	36.8	144	14.4	419	24.0	385	40.4	1	0.1	386	18.3
North Dakota.....	28	25.7	29	26.6	57	26.2	57	79.2	16	22.5	73	51.1
Ohio.....	499	48.5	164	12.2	663	28.0	727	77.3	306	28.5	1,033	51.3
Oklahoma.....	331	61.5	45	8.0	376	34.2	361	80.2	10	2.0	371	38.5
Oregon.....	322	91.5	136	29.3	458	56.1	226	91.9	126	39.1	352	62.0
Pennsylvania.....	736	65.4	241	15.5	977	36.4	842	86.4	267	23.2	1,109	52.2
Rhode Island.....	59	90.8	7	7.8	66	42.6	54	94.7	8	13.3	62	53.0
South Carolina.....	235	48.2	74	12.1	309	28.1	310	45.8	52	7.1	362	25.7
South Dakota.....	84	71.2	24	19.7	108	45.0	74	80.4	74	73.3	148	76.7
Tennessee.....	416	59.3	254	29.2	670	42.6	649	74.9	442	48.5	1,091	61.4
Texas.....	623	30.5	206	8.5	829	18.6	1,198	57.3	881	32.7	2,079	43.5
Utah.....	105	67.8	85	35.9	190	46.7	115	55.0	115	51.1	230	53.0
Vermont.....	33	49.3	26	35.1	59	41.8	47	83.9	22	39.3	69	61.6
Virginia.....	418	70.5	21	2.7	439	32.1	444	77.1	4	0.7	448	38.6
Washington.....	456	85.7	198	32.5	654	57.3	359	90.0	88	19.7	447	52.9
West Virginia.....	90	28.9	34	10.2	124	19.2	231	91.7	74	28.4	305	59.5
Wisconsin.....	442	86.0	10	1.6	452	39.5	436	87.7	190	36.9	626	61.9
Wyoming.....	80	57.6	20	13.9	100	35.3	94	83.9	30	36.1	124	59.1

¹ Blood alcohol concentration.

² As of January 1, 1999, the following States had enacted laws requiring BAC tests on drivers killed in traffic accidents: Arizona, Arkansas, California, Colorado, Connecticut, Idaho, Illinois, Indiana, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Washington, West Virginia, Wisconsin (National Highway Traffic Safety Administration 1998a).

Table 9. Drivers involved in fatal traffic crashes and given BAC¹ tests, according to sex, age, and injury severity, United States, 1977 and 1999

Sex and age	Drivers given BAC tests											
	1977						1999					
	Dead		Alive		Combined		Dead		Alive		Combined	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Both sexes												
16-19	2,368	55.5	1,090	18.3	3,548	33.8	2,099	76.2	1,246	34.5	3,345	52.5
20-24	3,449	59.2	1,407	20.2	4,856	37.9	2,545	77.8	1,475	37.0	4,020	55.4
25-34	3,514	59.1	1,358	16.1	4,872	33.9	3,799	79.7	2,326	33.3	6,125	52.1
35-44	1,683	58.0	624	13.1	2,307	30.1	3,607	78.4	1,998	30.9	5,605	50.7
45+	3,196	46.7	780	10.6	3,976	27.9	6,523	67.3	2,346	25.4	8,869	46.9
Total ²	14,210	55.1	5,259	15.7	19,469	32.8	18,573	74.0	9,391	31.0	27,964	50.5
Male³												
16-19	1,996	56.2	982	20.4	2,978	35.6	1,494	77.9	959	37.8	2,453	55.0
20-24	2,960	59.9	1,272	22.0	4,232	39.4	2,051	79.7	1,207	40.4	3,258	58.6
25-34	3,016	60.2	1,231	17.7	4,247	35.4	2,919	80.0	1,836	35.5	4,755	53.9
35-44	1,386	59.3	531	13.8	1,917	31.0	2,707	80.2	1,563	32.9	4,270	52.5
45+	2,595	48.3	672	11.4	3,267	29.0	4,660	68.2	1,892	27.6	6,552	47.9
Total	11,953	56.4	4,688	17.2	16,641	34.3	13,831	75.4	7,457	33.5	21,288	52.4
Female³												
16-19	372	52.3	108	9.5	480	26.0	605	72.3	287	26.7	892	46.7
20-24	489	55.1	135	11.3	624	30.0	494	70.5	268	26.9	762	44.8
25-34	498	53.6	127	8.6	625	26.0	880	78.6	490	26.9	1,370	46.6
35-44	297	52.6	93	10.3	390	26.6	899	73.4	435	25.5	1,334	45.5
45+	601	40.7	108	7.2	709	23.9	1,861	65.1	454	19.1	2,351	44.2
Total	2,257	49.4	571	9.2	2,828	26.3	4,739	70.3	1,934	24.2	6,673	45.3

¹ Blood alcohol concentration.

² The totals may not equal the totals in tables 7 and 8 because drivers under age 16 or having missing data on age are excluded from this table.

³ Because of missing data on sex, the sum of the male and female drivers may not always equal the number for both sexes in a corresponding category.

Table 10. Percentage¹ distributions of BAC² among alcohol-involved drivers, according to sex and age, United States, 1977–99.

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Both Sexes								
1999								
16–19.....	13.8	10.7	9.4	26.3	21.2	12.7	5.0	1.0
20–24.....	9.0	8.8	7.7	24.0	26.7	15.7	5.9	2.2
25–34.....	7.5	5.9	6.0	19.5	25.1	20.7	11.4	4.0
35–44.....	7.7	4.8	5.0	17.8	22.2	21.3	13.9	7.4
45+.....	13.6	7.2	5.6	14.5	20.0	19.4	11.0	8.8
Total	9.6	6.9	6.3	19.6	23.4	18.9	10.2	5.1
1998								
16–19.....	15.2	11.5	9.6	25.4	22.2	11.3	2.9	2.0
20–24.....	7.4	8.7	6.4	25.1	27.1	16.5	6.9	2.0
25–34.....	8.2	6.0	5.3	18.6	26.6	19.3	11.2	4.9
35–44.....	7.9	5.3	4.3	15.7	23.9	20.4	14.3	8.2
45+.....	13.7	5.4	4.9	14.2	21.3	18.9	12.5	9.1
Total	9.7	6.8	5.6	19.0	24.6	18.2	10.6	5.7
1997								
16–19.....	13.1	10.9	9.2	28.5	22.2	10.6	4.0	1.5
20–24.....	9.4	7.9	6.7	23.8	25.7	17.0	7.2	2.4
25–34.....	8.8	6.8	6.0	19.2	25.5	19.5	9.9	4.4
35–44.....	6.3	4.6	5.2	16.5	22.8	22.0	14.7	7.9
45+.....	12.6	7.0	4.6	16.3	19.3	20.5	12.6	7.2
Total	9.4	6.9	6.0	19.7	23.4	19.0	10.5	5.1
1996								
16–19.....	15.2	11.5	8.2	29.9	20.9	11.2	2.7	0.5
20–24.....	8.7	8.9	8.1	23.2	26.1	16.1	6.7	2.3
25–34.....	7.2	6.4	5.1	19.7	24.0	21.1	11.1	5.4
35–44.....	7.2	5.7	4.7	16.0	22.6	22.1	13.8	8.1
45+.....	11.0	7.5	4.8	16.2	19.9	19.3	12.9	8.3
Total	8.9	7.4	5.8	19.8	23.1	19.1	10.4	5.5
1995								
16–19.....	14.8	13.3	10.8	24.9	22.1	9.0	4.0	1.2
20–24.....	8.3	9.7	8.1	23.6	24.4	17.6	6.0	2.3
25–34.....	6.8	6.6	5.0	20.4	24.9	19.8	10.9	5.6
35–44.....	7.7	5.9	4.6	16.2	21.3	21.0	15.6	7.7
45+.....	11.7	6.0	4.4	15.7	20.2	21.5	13.3	7.3
Total	8.8	7.5	5.9	19.7	23.0	19.1	10.8	5.3
1994								
16–19.....	17.1	11.5	9.4	28.0	19.5	9.0	3.6	1.9
20–24.....	8.7	8.5	7.6	23.5	25.3	16.3	7.2	2.9
25–34.....	7.2	6.3	5.2	17.5	24.7	20.9	12.4	5.8
35–44.....	6.7	5.4	3.7	15.3	21.8	21.1	16.2	9.8
45+.....	10.6	5.9	4.9	15.1	18.8	21.2	13.6	10.0
Total	8.9	7.0	5.7	18.9	22.8	18.9	11.5	6.3
1993								
16–19.....	15.6	11.7	7.4	27.9	22.4	9.6	3.9	1.5
20–24.....	7.1	7.8	6.4	25.3	25.4	18.7	7.0	2.4
25–34.....	6.8	5.9	6.1	18.8	23.2	22.0	11.1	6.1
35–44.....	7.5	5.5	4.4	15.1	21.0	23.7	13.9	9.0
45+.....	11.4	6.7	4.4	16.5	19.5	17.7	13.6	10.2
Total	8.5	6.9	5.7	19.9	22.6	19.9	10.5	6.1
1992								
16–19.....	13.0	13.0	8.2	25.9	23.7	10.3	4.7	1.2
20–24.....	9.6	7.7	7.3	22.5	26.0	17.2	7.1	2.6
25–34.....	6.2	5.6	5.3	18.0	25.4	21.1	12.3	6.1
35–44.....	7.6	4.9	4.5	14.7	22.9	21.9	15.2	8.3
45+.....	11.5	7.6	5.3	15.1	18.4	21.4	13.4	7.3
Total	8.6	6.9	5.8	18.6	23.9	19.5	11.2	5.5
1991								
16–19.....	13.7	12.3	8.8	26.5	20.7	12.5	3.6	2.0
20–24.....	7.6	8.4	6.7	23.9	26.7	17.6	6.8	2.2
25–34.....	6.2	5.8	4.8	18.6	24.9	21.9	12.2	5.6
35–44.....	7.1	5.4	3.8	14.6	22.0	22.3	15.7	9.2
45+.....	11.8	6.2	5.2	14.6	20.5	19.4	12.8	9.6
Total	8.2	7.0	5.5	19.3	23.8	19.7	10.8	5.7

Table 10. Percentage¹ distributions of BAC² among alcohol-involved drivers, according to sex and age, United States, 1977–99. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Both Sexes								
1990								
16–19.....	13.5	11.3	8.8	26.9	22.9	11.8	3.7	1.2
20–24.....	8.8	7.6	5.8	24.1	25.4	17.4	8.0	2.9
25–34.....	6.7	6.4	4.7	17.7	24.4	22.8	11.9	5.5
35–44.....	7.3	4.7	4.7	16.3	23.2	20.9	13.7	9.3
45+.....	12.6	6.5	4.9	14.4	20.1	19.8	12.2	9.4
Total	8.8	6.9	5.4	19.4	23.7	19.7	10.6	5.7
1989								
16–19.....	13.6	11.5	10.2	25.2	22.5	13.0	3.0	1.1
20–24.....	7.7	7.5	7.5	24.2	25.1	18.0	7.3	2.7
25–34.....	7.0	5.8	5.1	17.9	24.2	21.9	12.3	5.8
35–44.....	6.4	4.9	4.6	16.6	21.7	22.3	14.4	9.2
45+.....	11.1	6.2	4.4	14.8	20.9	21.5	12.5	8.6
Total	8.4	6.7	6.1	19.5	23.3	20.0	10.5	5.5
1988								
16–19.....	15.0	12.5	8.7	26.2	20.5	11.7	3.9	1.5
20–24.....	8.8	8.5	6.0	23.6	25.6	17.8	6.7	3.1
25–34.....	6.8	6.0	4.8	17.4	24.5	22.3	12.6	5.7
35–44.....	7.3	4.8	3.8	15.8	22.8	23.3	13.7	8.5
45+.....	12.0	7.2	3.8	14.9	18.6	21.0	13.2	9.4
Total	9.0	7.4	5.3	19.4	23.3	19.9	10.3	5.5
1987								
16–19.....	14.4	12.5	9.8	25.2	23.2	10.9	2.4	1.6
20–24.....	9.0	8.7	7.3	24.2	25.5	17.0	6.1	2.4
25–34.....	6.8	6.3	5.2	17.3	24.8	22.1	12.0	5.5
35–44.....	7.1	5.1	3.7	15.7	24.1	20.9	14.2	9.2
45+.....	13.0	6.2	3.8	14.8	20.0	20.2	13.0	9.1
Total	9.1	7.4	5.9	19.4	24.1	19.1	9.8	5.3
1986								
16–19.....	12.6	13.0	9.3	28.2	21.9	10.1	3.6	1.3
20–24.....	8.8	7.8	7.1	22.6	26.4	17.3	7.6	2.3
25–34.....	6.9	6.2	5.0	18.3	25.3	21.5	11.3	5.4
35–44.....	6.7	5.9	4.3	16.6	22.2	22.7	13.1	8.5
45+.....	14.6	6.6	4.8	15.2	18.8	18.8	12.2	9.0
Total	9.1	7.5	6.0	20.1	23.9	18.8	9.7	4.9
1985								
16–19.....	14.3	11.0	9.1	26.9	22.5	12.0	3.2	1.1
20–24.....	7.8	8.9	5.7	23.5	27.6	16.8	7.0	2.7
25–34.....	7.0	6.0	5.1	19.2	25.1	20.9	11.2	5.6
35–44.....	7.0	4.8	5.1	16.1	22.6	22.4	13.4	8.7
45+.....	12.8	6.2	4.2	15.2	20.8	19.1	12.8	8.8
Total	8.8	7.2	5.7	20.4	24.6	18.7	9.6	5.1
1984								
16–19.....	13.4	11.5	9.3	25.6	22.8	11.8	4.7	0.9
20–24.....	8.0	8.2	7.4	22.2	26.1	18.3	7.1	2.9
25–34.....	6.8	6.3	5.0	18.3	25.3	22.5	10.3	5.5
35–44.....	6.7	5.4	4.1	17.0	24.6	20.9	13.9	7.4
45+.....	10.8	6.7	4.8	14.1	22.5	19.8	13.1	8.3
Total	8.5	7.4	6.1	19.7	24.8	19.3	9.5	4.8
1983								
16–19.....	9.7	11.0	8.8	26.8	24.1	14.2	4.4	1.1
20–24.....	7.8	7.2	6.2	22.1	27.6	18.2	8.0	2.9
25–34.....	6.5	5.4	4.7	18.8	25.4	21.8	11.7	5.6
35–44.....	5.9	4.4	4.1	17.7	23.8	21.4	14.6	8.2
45+.....	10.1	6.4	3.9	15.0	19.5	22.2	13.6	9.3
Total	7.7	6.6	5.5	20.2	24.9	19.8	10.3	5.1
1982								
16–19.....	9.6	10.3	8.2	27.1	23.8	14.1	5.0	2.0
20–24.....	7.5	6.7	6.6	23.2	25.4	18.9	8.0	3.5
25–34.....	6.7	5.5	4.3	18.4	25.4	22.3	12.1	5.3
35–44.....	7.0	4.8	4.8	16.0	22.1	22.8	13.1	9.5
45+.....	9.9	6.3	5.3	14.0	20.1	21.6	13.2	9.7
Total	7.8	6.6	5.7	20.1	24.0	20.1	10.2	5.5

Table 10. Percentage¹ distributions of BAC² among alcohol-involved drivers, according to sex and age, United States, 1977–99. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Both Sexes								
1981								
16–19.....	10.3	9.6	8.7	28.1	25.5	12.7	3.9	1.3
20–24.....	7.2	7.7	6.5	22.3	26.7	19.1	7.2	3.1
25–34.....	6.3	5.8	4.9	17.3	25.1	22.3	12.1	6.3
35–44.....	5.6	4.8	4.1	14.9	23.6	23.4	13.5	10.2
45+.....	10.0	5.1	5.4	14.0	19.8	23.0	13.7	9.0
Total	7.5	6.7	5.9	19.5	24.7	20.2	9.9	5.6
1980								
16–19.....	10.4	10.5	8.6	26.3	24.4	13.7	4.1	2.0
20–24.....	8.5	7.8	6.8	23.3	25.3	17.7	7.6	3.0
25–34.....	6.8	5.3	4.5	19.2	25.0	21.7	11.8	5.8
35–44.....	6.7	4.5	2.9	15.4	23.8	23.1	14.2	9.4
45+.....	7.3	5.7	4.4	14.3	21.0	21.6	14.7	11.0
Total	7.9	6.8	5.6	20.3	24.3	19.4	10.1	5.5
1979								
16–19.....	11.3	11.6	10.4	26.4	22.5	12.2	3.8	1.8
20–24.....	6.4	8.4	6.2	23.7	25.9	18.9	7.3	3.2
25–34.....	5.7	5.7	4.8	20.4	26.7	20.3	11.0	5.3
35–44.....	6.9	4.9	3.9	13.2	22.5	23.7	14.8	10.1
45+.....	8.3	5.2	3.5	14.1	20.7	24.1	14.8	9.4
Total	7.4	7.3	5.9	20.6	24.4	19.4	9.7	5.3
1978								
16–19.....	12.9	10.8	9.4	27.8	22.0	12.6	3.2	1.3
20–24.....	8.3	7.8	6.6	23.7	25.1	19.0	7.0	2.5
25–34.....	6.6	5.4	4.7	19.8	26.2	20.7	11.0	5.7
35–44.....	6.5	6.3	3.5	14.4	21.2	23.4	15.4	9.4
45+.....	8.4	6.0	4.3	14.1	20.6	21.9	14.3	10.4
Total	8.4	7.2	5.8	20.7	23.7	19.4	9.7	5.3
1977								
16–19.....	12.3	11.1	8.8	29.4	22.5	10.6	3.6	1.6
20–24.....	8.3	7.8	7.2	22.6	26.1	18.8	6.3	3.0
25–34.....	6.8	5.3	4.8	18.7	24.1	21.5	12.3	6.6
35–44.....	6.7	4.3	4.5	16.4	22.6	21.9	14.7	8.8
45+.....	9.6	4.1	3.9	16.2	19.9	21.6	14.3	10.4
Total	8.6	6.7	6.0	21.0	23.6	19.0	9.7	5.6
Male								
1999								
16–19.....	11.9	10.7	10.3	27.3	22.1	12.3	4.8	0.7
20–24.....	8.7	8.7	8.0	23.8	27.3	15.5	5.8	2.1
25–34.....	6.9	5.9	6.5	19.4	24.6	21.2	11.6	3.9
35–44.....	8.0	2.6	4.8	17.9	21.9	21.3	14.3	7.3
45+.....	12.5	7.2	5.4	15.0	19.9	20.1	10.8	9.1
Total	9.1	6.9	6.6	19.8	23.4	19.0	10.2	5.0
1998								
16–19.....	14.7	11.5	10.5	25.2	21.7	10.9	3.2	2.2
20–24.....	7.0	8.5	6.3	25.5	27.0	16.9	6.7	2.0
25–34.....	8.0	5.8	5.2	18.8	27.0	18.9	11.3	5.2
35–44.....	7.6	4.9	4.6	15.6	24.4	20.5	14.2	8.3
45+.....	12.9	5.1	4.9	13.9	21.0	19.6	13.0	9.6
Total	9.3	6.5	5.7	19.1	24.8	18.2	10.6	5.8
1997								
16–19.....	12.9	11.3	9.1	28.7	22.2	11.1	3.5	1.1
20–24.....	9.1	6.9	7.0	23.9	25.9	17.5	7.4	2.4
25–34.....	8.7	6.8	5.6	19.6	24.9	19.8	9.7	4.9
35–44.....	6.2	4.4	5.0	16.5	23.4	21.5	15.2	7.7
45+.....	11.5	7.0	4.7	16.4	19.6	20.6	12.9	7.3
Total	9.1	6.7	5.9	19.9	23.5	19.1	10.6	5.2

Table 10. Percentage¹ distributions of BAC² among alcohol-involved drivers, according to sex and age, United States, 1977–99. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Male								
1996								
16–19.....	15.1	10.8	7.9	30.2	20.3	12.3	2.9	0.6
20–24.....	8.2	8.6	7.9	23.8	26.2	16.4	6.5	2.4
25–34.....	7.1	6.5	5.2	19.8	23.7	21.0	11.1	5.7
35–44.....	6.8	5.5	4.6	15.8	22.2	22.4	14.2	8.5
45+.....	10.6	7.4	4.7	15.9	20.2	19.7	13.2	8.4
Total	8.6	7.3	5.8	20.0	23.0	19.3	10.5	5.6
1995								
16–19.....	14.2	13.2	10.9	25.1	22.0	9.4	3.8	1.3
20–24.....	7.8	9.5	7.9	24.2	24.6	17.8	6.0	2.2
25–34.....	6.7	6.4	5.0	20.1	24.8	20.2	11.2	5.6
35–44.....	7.5	5.6	4.7	16.4	21.0	21.0	16.0	8.0
45+.....	10.9	5.6	4.4	15.5	20.7	21.7	13.7	7.5
Total	8.4	7.3	5.9	19.8	23.0	19.3	11.0	5.4
1994								
16–19.....	16.0	11.6	9.6	28.3	19.7	9.2	3.6	2.0
20–24.....	8.3	8.2	7.6	23.7	25.5	16.5	7.3	2.9
25–34.....	7.3	6.1	5.3	17.6	24.8	20.8	12.5	5.7
35–44.....	6.0	5.3	3.8	14.6	22.2	21.4	16.4	10.4
45+.....	10.1	5.8	4.9	15.1	18.3	21.9	14.0	10.1
Total	8.5	6.8	5.8	18.9	22.9	19.1	11.6	6.4
1993								
16–19.....	14.8	11.5	7.3	28.9	22.8	9.3	4.0	1.4
20–24.....	6.7	7.7	6.3	25.7	25.4	18.8	7.0	2.2
25–34.....	6.7	6.1	6.0	19.4	23.1	21.6	11.4	5.8
35–44.....	7.1	5.5	4.4	15.1	21.3	24.2	13.9	8.5
45+.....	10.6	6.2	4.5	16.0	19.3	18.7	13.6	11.0
Total	8.1	6.8	5.6	20.3	22.6	20.0	10.6	6.0
1992								
16–19.....	12.1	13.4	7.8	26.0	24.4	10.3	4.6	1.3
20–24.....	8.9	7.3	7.2	22.8	26.0	17.7	7.1	2.9
25–34.....	6.1	5.2	5.3	18.5	25.0	21.7	12.2	6.1
35–44.....	7.7	5.0	4.5	14.4	22.8	21.7	15.4	8.5
45+.....	10.8	7.4	4.9	15.4	18.9	21.5	13.4	7.8
Total	8.3	6.7	5.7	18.9	23.8	19.8	11.2	5.7
1991								
16–19.....	12.9	11.6	8.6	27.0	21.3	12.8	3.6	2.2
20–24.....	7.2	8.2	6.7	24.2	26.5	17.9	7.0	2.4
25–34.....	6.1	5.7	5.0	18.5	24.8	22.2	12.1	5.5
35–44.....	6.5	5.2	3.6	14.2	22.2	22.7	16.1	9.5
45+.....	11.3	5.5	5.1	14.1	20.6	20.2	13.1	10.0
Total	7.8	6.8	5.5	19.3	23.8	20.1	10.9	5.8
1990								
16–19.....	12.4	11.1	8.4	27.7	23.1	12.4	3.8	1.3
20–24.....	8.3	7.7	5.5	25.0	25.1	17.3	8.3	2.8
25–34.....	6.8	6.4	4.6	17.7	24.3	22.8	12.0	5.5
35–44.....	6.5	4.4	4.9	16.1	23.4	21.5	13.6	9.6
45+.....	11.8	6.4	4.8	14.6	20.6	20.0	12.1	9.7
Total	8.3	6.8	5.3	19.7	23.7	19.9	10.6	5.8
1989								
16–19.....	12.8	11.7	9.6	25.6	23.3	13.4	2.7	1.1
20–24.....	7.5	7.5	7.6	24.1	25.1	18.0	7.4	2.8
25–34.....	6.6	5.8	5.2	18.0	24.3	21.7	12.5	5.9
35–44.....	6.3	5.1	4.1	16.4	21.6	22.3	14.6	9.6
45+.....	10.6	6.3	4.2	14.7	21.3	21.5	12.6	8.9
Total	8.0	6.8	5.9	19.5	23.5	20.0	10.6	5.7
1988								
16–19.....	14.4	13.1	8.5	26.4	20.7	11.8	3.5	1.5
20–24.....	8.6	8.6	6.1	23.6	25.3	18.1	6.7	3.0
25–34.....	6.7	5.9	4.7	17.4	24.6	22.3	12.8	5.5
35–44.....	6.9	5.0	3.5	16.0	22.8	23.5	13.8	8.6
45+.....	10.5	7.3	3.7	14.7	18.6	21.1	14.2	9.9
Total	8.6	7.5	5.2	19.5	23.3	20.1	10.5	5.5

Table 10. Percentage¹ distributions of BAC² among alcohol-involved drivers, according to sex and age, United States, 1977–99. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Male								
1987								
16–19.....	13.5	12.9	9.9	25.8	23.0	10.9	2.4	1.7
20–24.....	9.1	8.5	7.6	23.9	25.7	16.9	6.0	2.3
25–34.....	6.5	6.2	5.4	17.3	24.8	22.0	12.3	5.5
35–44.....	6.7	4.7	3.6	15.9	24.3	20.8	14.7	9.4
45+.....	11.9	6.1	3.8	14.9	20.6	20.4	12.8	9.5
Total	8.7	7.3	6.0	19.5	24.2	19.0	10.0	5.4
1986								
16–19.....	12.3	12.2	9.4	29.3	21.9	10.2	3.3	1.4
20–24.....	8.7	8.0	7.0	22.6	26.6	17.4	7.4	2.3
25–34.....	6.8	6.2	4.8	18.4	25.5	21.4	11.4	5.5
35–44.....	6.2	5.8	4.2	16.6	22.2	23.3	13.3	8.4
45+.....	13.6	6.5	5.0	15.1	19.3	18.8	12.4	9.4
Total	8.8	7.4	5.9	20.3	24.1	18.9	9.7	5.0
1985								
16–19.....	13.9	10.9	9.1	26.9	22.6	12.5	3.1	1.1
20–24.....	7.9	8.4	5.8	23.4	27.8	16.8	7.0	2.9
25–34.....	6.5	5.7	4.9	19.2	25.6	21.3	11.1	5.7
35–44.....	6.7	4.5	5.0	15.9	23.1	22.4	13.5	8.8
45+.....	11.6	6.2	4.1	15.2	20.7	19.9	13.6	8.9
Total	8.4	7.0	5.6	20.3	24.9	19.0	9.7	5.2
1984								
16–19.....	12.8	11.2	8.9	26.0	23.5	11.9	5.0	0.9
20–24.....	7.7	8.0	7.7	22.5	26.6	17.8	6.9	2.9
25–34.....	6.4	6.3	5.0	18.3	25.2	22.5	10.5	5.8
35–44.....	6.6	5.2	4.1	16.6	24.2	21.5	14.3	7.5
45+.....	10.5	6.6	4.7	14.5	22.3	19.8	13.3	8.4
Total	8.1	7.3	6.1	19.8	24.9	19.3	9.7	4.9
1983								
16–19.....	9.4	10.7	9.2	27.1	23.7	14.7	4.3	0.9
20–24.....	7.7	7.1	6.4	22.5	27.4	17.9	8.1	3.0
25–34.....	6.5	5.4	4.8	18.5	25.7	21.9	11.5	5.7
35–44.....	5.9	4.3	4.2	17.2	23.9	21.7	14.8	8.2
45+.....	9.7	6.5	4.1	15.0	19.1	22.4	13.5	9.7
Total	7.5	6.6	5.6	20.1	24.8	19.9	10.3	5.2
1982								
16–19.....	9.2	10.2	8.1	27.6	24.0	13.8	5.0	2.0
20–24.....	7.4	6.8	6.6	23.4	25.6	19.0	7.9	3.4
25–34.....	6.4	5.7	4.2	18.2	25.3	22.4	12.4	5.5
35–44.....	6.4	4.5	4.8	15.6	22.1	22.5	14.0	10.1
45+.....	9.3	5.9	5.1	13.3	20.6	22.4	13.6	9.9
Total	7.5	6.5	5.6	20.0	24.2	20.2	10.4	5.6
1981								
16–19.....	9.9	9.6	8.8	28.3	25.4	12.5	4.2	1.4
20–24.....	7.4	7.8	6.2	22.2	26.8	19.3	7.2	3.2
25–34.....	5.9	5.8	4.9	17.4	24.9	22.5	12.3	6.4
35–44.....	5.5	4.6	3.9	14.7	23.3	23.4	13.8	10.7
45+.....	9.2	5.0	5.1	14.0	19.6	23.7	14.2	9.2
Total	7.3	6.6	5.7	19.5	24.6	20.5	10.2	5.7
1980								
16–19.....	10.6	10.5	8.4	26.3	24.9	13.2	4.0	2.1
20–24.....	8.4	7.8	6.9	23.4	25.1	17.7	7.6	3.1
25–34.....	6.6	5.3	4.5	18.9	25.2	21.8	12.0	5.8
35–44.....	7.1	4.5	2.9	14.4	23.7	23.2	14.5	9.7
45+.....	7.4	6.0	4.4	14.5	20.0	21.8	15.2	10.8
Total	7.9	6.8	5.6	20.2	24.2	19.4	10.2	5.6
1979								
16–19.....	10.7	11.8	10.1	26.5	23.2	11.9	4.1	1.7
20–24.....	6.4	8.2	6.2	23.5	25.9	19.3	7.4	3.0
25–34.....	5.6	5.6	4.7	20.9	26.9	20.4	10.9	5.2
35–44.....	6.8	4.8	4.0	13.3	22.3	23.3	15.2	10.3
45+.....	8.2	5.1	3.5	14.0	20.8	24.2	14.7	9.5
Total	7.2	7.2	5.8	20.7	24.6	19.5	9.8	5.2

Table 10. Percentage¹ distributions of BAC² among alcohol-involved drivers, according to sex and age, United States, 1977–99. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Male								
1978								
16–19.....	12.3	10.8	9.9	28.3	22.3	12.0	3.3	1.2
20–24.....	8.3	7.8	6.7	23.8	25.2	18.8	7.1	2.4
25–34.....	6.3	5.0	4.9	19.9	26.5	20.3	11.3	5.8
35–44.....	6.3	6.2	3.5	14.9	20.1	23.8	15.5	9.8
45+.....	8.1	6.1	4.1	13.8	20.6	22.9	13.6	10.9
Total	8.1	7.1	5.9	20.8	23.8	19.3	9.7	5.4
1977								
16–19.....	12.4	10.7	8.6	30.0	22.2	11.1	3.4	1.7
20–24.....	8.1	8.0	6.9	22.6	26.3	18.8	6.2	3.0
25–34.....	6.7	5.2	4.8	18.5	24.4	21.5	12.2	6.7
35–44.....	5.9	4.0	3.8	16.6	23.5	21.9	15.6	8.8
45+.....	8.7	3.9	4.1	16.6	19.9	21.9	14.5	10.5
Total	8.3	6.6	5.8	21.1	23.8	19.1	9.7	5.6
Female								
1999								
16–19.....	23.7	10.8	4.3	20.9	16.6	15.1	5.8	2.9
20–24.....	11.6	9.6	5.0	25.1	21.6	17.6	6.5	3.0
25–34.....	10.6	5.9	3.6	19.7	27.4	17.9	10.4	4.5
35–44.....	6.3	5.8	6.1	17.2	23.8	21.3	11.9	7.6
45+.....	21.7	6.9	6.9	10.6	21.2	13.8	12.0	6.9
Total	12.6	7.0	5.1	18.5	23.5	17.9	10.1	5.4
1998								
16–19.....	18.3	11.9	4.0	26.2	24.6	13.5	0.8	0.8
20–24.....	9.9	10.3	6.9	22.3	27.5	13.3	7.7	2.2
25–34.....	9.3	6.7	5.8	17.7	24.7	21.6	10.5	3.7
35–44.....	9.0	7.2	3.5	16.2	21.7	19.9	14.8	7.9
45+.....	19.0	6.9	5.2	16.0	22.8	14.7	9.5	6.0
Total	11.6	7.9	5.0	18.4	23.9	18.0	10.3	4.8
1997								
16–19.....	13.9	8.8	9.5	27.7	21.9	8.0	6.6	3.7
20–24.....	11.4	15.2	4.3	23.3	24.8	12.9	5.6	2.4
25–34.....	9.2	6.5	8.1	17.1	28.3	18.2	10.6	2.0
35–44.....	6.3	5.3	6.1	16.5	20.3	24.3	12.7	8.6
45+.....	18.4	7.0	4.0	15.4	17.7	19.9	11.0	6.6
Total	10.9	7.6	6.4	18.5	23.0	18.4	10.1	4.9
1996								
16–19.....	15.4	15.4	9.6	28.7	24.3	5.2	1.5	0.0
20–24.....	13.2	11.0	9.1	18.7	25.1	13.2	7.8	1.8
25–34.....	7.9	5.5	5.0	19.2	25.2	21.7	11.2	4.2
35–44.....	8.6	6.2	5.2	16.8	24.0	20.7	12.1	6.4
45+.....	13.7	8.4	5.6	18.1	18.5	16.9	11.2	7.6
Total	10.4	7.8	6.1	19.1	23.7	18.0	10.1	4.6
1995								
16–19.....	17.9	13.8	9.8	23.6	22.8	6.5	4.9	0.8
20–24.....	11.6	10.8	10.0	19.2	23.2	16.4	6.0	2.8
25–34.....	7.4	7.9	4.6	22.1	25.7	17.7	9.2	5.4
35–44.....	9.1	7.3	4.0	14.9	23.2	21.2	13.9	6.3
45+.....	17.2	8.2	4.5	16.4	16.8	20.1	10.7	6.2
Total	10.9	8.8	5.7	19.0	23.0	17.9	9.8	5.0
1994								
16–19.....	23.2	11.3	8.5	26.1	18.3	7.8	3.5	1.4
20–24.....	11.2	10.8	7.7	22.0	23.6	14.7	6.6	3.5
25–34.....	7.0	7.2	4.9	16.6	24.4	21.3	12.1	6.5
35–44.....	9.6	6.2	3.1	18.7	20.1	20.1	15.6	6.5
45+.....	14.4	7.2	4.8	15.4	22.1	15.9	10.6	9.6
Total	11.0	8.0	5.3	18.8	22.3	17.8	10.9	5.9

Table 10. Percentage¹ distributions of BAC² among alcohol-involved drivers, according to sex and age, United States, 1977–99. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Female								
1993								
16–19.....	21.0	12.9	8.1	21.8	19.4	11.3	3.2	2.4
20–24.....	9.8	8.3	7.2	22.3	25.3	17.4	6.4	3.4
25–34.....	7.0	5.3	6.8	15.4	23.7	24.2	9.7	7.9
35–44.....	9.5	5.9	4.4	14.8	19.2	21.0	13.9	11.2
45+.....	16.7	10.4	3.7	19.8	21.4	10.4	13.0	4.7
Total	10.5	7.3	6.0	17.6	22.3	19.4	9.9	7.0
1992								
16–19.....	18.1	10.4	10.4	25.7	19.4	10.4	4.9	0.7
20–24.....	14.1	10.3	8.1	20.0	25.9	13.4	7.2	0.9
25–34.....	6.9	8.2	4.8	15.8	27.4	17.8	12.7	6.4
35–44.....	6.8	4.0	5.0	16.4	23.8	22.9	13.6	7.4
45+.....	15.9	8.9	7.5	13.3	15.5	21.2	13.3	4.4
Total	10.6	8.1	6.4	17.3	24.0	17.8	11.2	4.7
1991								
16–19.....	17.7	16.2	9.9	24.0	19.2	10.4	3.7	1.0
20–24.....	10.5	9.9	6.6	22.3	28.1	16.3	5.2	1.1
25–34.....	7.0	6.2	3.6	18.7	25.6	20.0	12.7	6.2
35–44.....	10.2	6.7	5.1	16.8	20.3	20.3	13.3	7.3
45+.....	15.2	10.4	5.7	18.0	19.9	13.7	10.4	6.6
Total	10.6	8.7	5.5	19.7	23.5	17.4	9.9	4.8
1990								
16–19.....	20.6	12.8	11.3	22.1	21.6	8.3	2.9	0.5
20–24.....	12.7	6.9	7.7	18.0	27.3	18.3	5.8	3.2
25–34.....	6.2	6.3	5.6	17.9	25.0	22.3	11.5	5.3
35–44.....	12.5	6.6	2.8	17.6	21.9	16.9	14.4	7.2
45+.....	17.4	7.2	5.5	13.6	17.4	18.6	13.1	7.2
Total	11.8	7.3	6.2	17.8	23.6	18.4	10.1	4.9
1989								
16–19.....	17.8	10.7	13.2	23.1	18.2	11.2	5.0	0.8
20–24.....	9.3	7.4	6.8	24.3	25.9	17.4	7.1	1.9
25–34.....	9.4	5.9	4.8	17.3	23.6	23.2	10.8	5.0
35–44.....	7.1	3.7	7.4	17.5	22.2	22.2	13.2	6.8
45+.....	14.5	6.1	6.1	15.3	18.2	21.4	12.1	6.5
Total	10.7	6.5	6.9	19.2	22.4	20.1	9.9	4.4
1988								
16–19.....	18.5	9.2	9.6	24.5	19.3	11.2	6.0	1.6
20–24.....	10.3	7.3	5.3	23.3	28.0	16.0	6.8	3.3
25–34.....	8.0	6.8	4.8	17.1	23.5	22.0	11.2	6.6
35–44.....	10.5	3.3	5.6	14.4	23.0	22.0	13.1	8.2
45+.....	22.1	6.8	4.3	16.2	18.7	20.0	6.0	6.0
Total	12.1	6.6	5.6	18.9	23.2	19.0	9.2	5.4
1987								
16–19.....	19.8	10.3	9.1	21.7	24.5	11.1	2.4	1.2
20–24.....	7.9	10.1	5.4	25.9	23.4	17.3	7.0	2.9
25–34.....	9.0	7.1	4.4	17.2	24.4	22.6	9.9	5.4
35–44.....	9.7	7.5	4.1	14.6	23.1	21.5	11.2	8.4
45+.....	19.7	7.0	3.5	14.0	16.2	18.9	14.5	6.1
Total	11.6	8.3	5.1	19.0	23.0	19.2	9.0	4.9
1986								
16–19.....	14.6	17.4	9.1	21.6	21.6	9.8	5.2	0.7
20–24.....	9.7	6.4	7.7	23.2	25.1	16.7	9.0	2.2
25–34.....	8.0	6.4	6.4	17.5	23.9	22.4	10.6	4.9
35–44.....	9.8	7.0	4.9	16.8	22.5	18.4	11.5	9.0
45+.....	21.5	7.2	3.6	15.7	15.3	19.3	10.8	6.7
Total	11.4	8.4	6.6	19.3	22.6	18.0	9.5	4.3
1985								
16–19.....	16.9	11.4	9.1	26.5	22.4	9.1	3.7	0.9
20–24.....	6.9	12.1	5.5	24.3	25.9	16.7	6.9	1.8
25–34.....	10.2	8.1	6.5	19.7	21.7	17.3	11.6	4.9
35–44.....	8.7	6.4	5.7	17.1	19.7	22.0	12.5	8.0
45+.....	20.9	6.4	5.0	15.5	21.8	14.1	8.2	8.2
Total	11.4	9.1	6.3	20.8	22.6	16.4	9.0	4.5

Table 10. Percentage¹ distributions of BAC² among alcohol-involved drivers, according to sex and age, United States, 1977–99. (Continued)

Sex, year, and age	BAC Level							
	0.01–.04	0.05–.07	0.08–.09	0.10–.14	0.15–.19	0.20–.24	0.25–.29	0.30+
Female								
1984								
16–19.....	16.8	13.5	11.5	23.4	19.3	11.5	3.3	0.8
20–24.....	9.7	9.3	5.2	20.2	23.2	21.3	8.4	2.8
25–34.....	9.6	6.2	4.6	18.6	26.0	22.6	8.6	3.8
35–44.....	7.6	6.8	4.4	19.1	26.7	17.5	11.6	6.4
45+.....	13.0	7.3	5.8	11.6	23.7	19.3	11.6	7.7
Total	10.8	8.3	5.9	19.0	24.1	19.4	8.6	4.0
1983								
16–19.....	11.3	12.6	6.3	24.8	26.1	11.7	5.0	2.3
20–24.....	9.1	7.4	5.4	19.0	29.0	20.5	7.1	2.6
25–34.....	6.5	5.7	4.2	21.6	23.1	20.6	13.2	5.2
35–44.....	5.6	5.1	3.7	21.5	23.4	19.2	13.1	8.4
45+.....	13.2	5.4	3.0	15.0	22.2	20.4	14.4	6.6
Total	8.6	7.1	4.6	20.6	25.0	18.9	10.4	4.7
1982								
16–19.....	11.6	10.8	9.1	23.7	22.0	16.0	5.2	1.7
20–24.....	8.8	6.5	6.8	21.8	24.6	18.1	9.3	4.2
25–34.....	9.2	4.4	5.4	20.2	26.6	21.2	9.2	3.8
35–44.....	10.3	6.3	4.9	18.4	22.0	24.2	8.1	5.8
45+.....	14.1	8.9	6.3	18.8	16.7	16.2	10.9	8.3
Total	10.3	6.9	6.4	20.7	23.2	19.3	8.6	4.5
1981								
16–19.....	12.4	9.5	8.1	26.9	25.8	13.8	2.5	1.1
20–24.....	5.8	7.2	9.0	23.3	26.3	18.0	7.4	2.9
25–34.....	9.0	6.1	4.9	16.8	26.9	20.6	10.2	5.6
35–44.....	6.0	5.5	5.1	16.1	25.2	23.4	11.9	6.9
45+.....	16.6	6.1	7.7	14.4	21.6	17.1	9.4	7.2
Total	9.3	6.9	6.9	20.0	25.6	18.6	8.2	4.4
1980								
16–19.....	8.8	10.8	10.0	26.7	20.8	17.1	4.6	1.3
20–24.....	9.1	8.3	5.6	22.1	26.7	18.1	7.7	2.4
25–34.....	9.0	5.4	4.6	21.8	23.3	20.8	10.0	5.1
35–44.....	4.1	4.6	2.6	21.9	25.0	22.5	12.2	7.1
45+.....	6.4	4.1	4.6	13.3	28.0	19.7	11.5	12.4
Total	7.9	6.8	5.5	21.4	24.7	19.5	9.0	5.1
1979								
16–19.....	15.6	10.3	12.4	25.5	17.7	14.4	1.7	2.5
20–24.....	6.5	9.9	5.5	25.2	26.2	15.4	6.5	4.9
25–34.....	6.9	7.5	5.6	16.5	25.6	19.6	12.5	5.9
35–44.....	7.8	6.0	3.6	12.1	24.1	26.5	11.5	8.4
45+.....	8.7	6.2	3.7	14.3	19.9	23.6	14.9	8.7
Total	8.9	8.3	6.4	19.7	23.2	18.9	8.9	5.7
1978								
16–19.....	18.0	10.6	5.8	24.3	20.1	17.5	2.1	1.6
20–24.....	8.7	7.5	6.0	22.9	23.7	21.4	6.4	3.4
25–34.....	10.1	8.6	3.0	18.3	23.1	23.9	8.2	4.9
35–44.....	8.2	7.4	3.0	10.4	30.4	20.0	14.8	5.9
45+.....	11.0	5.5	6.1	17.1	20.1	14.0	20.1	6.1
Total	11.1	8.0	4.8	19.4	23.2	20.0	9.4	4.2
1977								
16–19.....	12.0	13.5	10.4	25.0	25.0	7.3	5.2	1.6
20–24.....	10.1	6.3	9.3	22.4	23.9	18.3	7.5	2.2
25–34.....	7.3	5.7	4.9	20.7	20.7	21.9	13.4	5.7
35–44.....	12.1	6.4	8.9	15.3	17.2	22.3	8.9	8.9
45+.....	15.6	5.6	2.8	13.3	20.6	20.0	12.8	9.4
Total	11.0	7.4	7.3	19.8	21.7	18.0	9.6	5.2

¹ Percentage is computed only for those drivers having known age and positive BAC scores.

² Blood alcohol concentration (in grams per deciliter).

Table 11. Alcohol-related traffic crash fatalities associated with young drivers ages 16 to 24, according to decedent's role, United States, 1977–99.

Year	Decedent's role in crash ¹							
	Driver		Passenger		Nonoccupant		All	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
1999.....	2,403	61.1	1,397	35.5	133	3.4	3,934	100.0
1998.....	2,353	59.8	1,444	36.7	139	3.5	3,936	100.0
1997.....	2,305	58.4	1,493	37.8	148	3.7	3,947	100.0
1996.....	2,479	58.6	1,587	37.5	164	3.9	4,231	100.0
1995.....	2,609	60.8	1,521	35.5	160	3.7	4,290	100.0
1994.....	2,726	61.4	1,540	34.7	172	3.9	4,438	100.0
1993.....	2,836	60.4	1,675	35.6	188	4.0	4,699	100.0
1992.....	2,942	60.4	1,722	35.3	209	4.3	4,873	100.0
1991.....	3,557	61.5	2,010	34.7	219	3.8	5,788	100.0
1990.....	3,934	61.1	2,220	34.5	285	4.4	6,441	100.0
1989.....	4,183	62.2	2,232	33.2	311	4.6	6,726	100.0
1988.....	4,759	62.4	2,556	33.5	314	4.1	7,629	100.0
1987.....	4,832	61.7	2,600	33.2	392	5.0	7,827	100.0
1986.....	5,273	62.2	2,802	33.0	403	4.7	8,483	100.0
1985.....	4,706	63.1	2,360	31.6	396	5.3	7,462	100.0
1984.....	5,075	62.4	2,636	32.4	418	5.1	8,132	100.0
1983.....	4,724	60.7	2,608	33.5	452	5.8	7,784	100.0
1982.....	5,088	60.5	2,787	33.1	531	6.3	8,409	100.0
1981.....	5,652	61.1	3,046	32.9	545	5.9	9,246	100.0
1980.....	6,047	61.0	3,319	33.5	545	5.5	9,918	100.0
1979.....	5,741	59.3	3,373	34.8	563	5.8	9,683	100.0
1978.....	5,156	59.2	3,058	35.1	490	5.7	8,704	100.0
1977.....	4,911	58.4	3,041	36.2	449	5.3	8,403	100.0

¹ There were 2, 6, 7, 3, 3, 3, 5, 3, 2, 2, 2, 1, 1, and 1 cases of unknown decedent's role for the years 1977, 1979, 1980, 1981, 1982, 1984, 1986, 1987, 1989, 1990, 1991, 1996, 1997, and 1999 respectively. No cases were unknown for 1978, 1983, 1985, 1988, 1992–95, and 1998.

Table 12. Traffic crash fatalities among young drivers and young drinking drivers ages 16 to 24, United States, 1977–99.

Year	Fatalities					
	All drivers ¹			Drinking drivers ¹		
	Number		Percent who are young	Number		Percent who are young
	All ages	Young (ages 16–24)		All ages	Young (ages 16–24)	
1999.....	25,091	6,029	24.0	7,901	2,136	27.0
1998.....	24,544	5,786	23.6	7,771	2,062	26.5
1997.....	24,470	5,731	23.4	7,847	2,003	25.5
1996.....	24,227	5,876	24.3	8,238	2,164	26.3
1995.....	24,167	6,023	24.9	8,603	2,249	26.1
1994.....	23,450	6,125	26.1	8,423	2,373	28.2
1993.....	22,941	5,998	26.2	8,728	2,479	28.4
1992.....	22,402	5,862	26.2	8,904	2,531	28.4
1991.....	23,744	6,606	27.8	9,973	3,128	31.4
1990.....	25,532	7,220	28.3	11,153	3,402	30.5
1989.....	26,137	7,566	29.0	11,316	3,593	31.8
1988.....	27,003	8,410	31.1	11,834	4,128	34.9
1987.....	26,535	8,363	31.5	11,981	4,140	34.6
1986.....	26,332	8,712	33.1	11,975	4,536	37.9
1985.....	25,013	8,321	33.3	10,855	4,072	37.5
1984.....	25,273	8,632	34.2	11,103	4,359	39.3
1983.....	23,868	8,017	33.6	10,359	3,998	38.6
1982.....	24,410	8,535	35.0	10,689	4,280	40.0
1981.....	27,755	9,778	35.2	12,065	4,729	39.2
1980.....	28,456	10,571	37.2	12,109	5,051	41.7
1979.....	28,482	10,864	38.1	11,467	4,845	42.3
1978.....	27,896	10,820	38.8	10,188	4,269	41.9
1977.....	25,782	10,091	39.1	9,662	4,191	43.4

¹ Ages under 16 and unknown are excluded.

Table 13. Alcohol involvement among young drivers ages 16–20 in fatal traffic crashes, United States, 1977–99.

Year	Drivers ¹					
	Ages 16–20			Ages 21 and older		
	Number		Percent alcohol-involved	Number		Percent alcohol-involved
	Total	Alcohol-involved		Total	Alcohol-involved	
1999.....	7,985	1,554	19.5	47,374	9,787	20.7
1998.....	7,767	1,569	20.2	47,637	9,891	20.8
1997.....	7,719	1,555	20.2	47,693	10,052	21.1
1996.....	7,804	1,581	20.3	47,617	10,690	22.4
1995.....	7,725	1,504	19.5	47,122	11,037	23.4
1994.....	7,723	1,652	21.4	45,515	10,810	23.8
1993.....	7,256	1,728	23.8	44,824	11,337	25.3
1992.....	7,192	1,856	25.8	43,490	11,609	26.7
1991.....	8,002	2,274	28.4	45,005	12,687	28.2
1990.....	8,821	2,672	30.3	48,572	14,191	29.2
1989.....	9,442	2,694	28.5	49,428	14,202	28.7
1988.....	10,171	3,100	30.5	50,487	14,746	29.2
1987.....	9,910	3,130	31.6	49,919	15,335	30.7
1986.....	10,163	3,488	34.3	48,525	14,933	30.8
1985.....	9,386	2,910	31.0	46,936	13,723	29.2
1984.....	9,804	3,365	34.3	46,218	13,833	29.9
1983.....	9,334	3,283	35.2	43,850	13,164	30.0
1982.....	9,858	3,603	36.5	44,604	13,571	30.4
1981.....	11,635	4,074	35.0	49,603	15,145	30.5
1980.....	12,766	4,464	35.0	49,511	14,861	30.0
1979.....	13,501	4,510	33.4	50,017	13,982	28.0
1978.....	13,761	4,048	29.4	49,126	12,603	25.7
1977.....	13,142	3,912	29.8	46,182	11,989	26.0

¹ Ages under 16 and unknown are excluded.