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2003 Motor Vehicle Occupant Safety Survey

Volume 4

Crash Injury and Emergency Medical Services Report

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16. Abstract

The 2003 Motor Vehicle Occupant Safety Survey was the fifth in a series of biennial national telephone surveys on occupant protection issues conducted for the National Highway Traffic Safety Administration (NHTSA). Data collection was conducted by Schulman, Ronca & Bucuvalas, Inc., a national survey research organization. The survey used two questionnaires, each administered to a randomly selected national sample of about 6,000 persons age 16 or older. Interviewing began January 8, 2003 and ended March 30, 2003. This report presents the survey findings pertaining to crash injury and emergency medical services. Detailed information on the survey methodology, as well as copies of the questionnaires, are contained in a separate NHTSA report ("2003 Motor Vehicle Occupant Safety Survey. Volume 1. Methodology Report").

Nearly three-in-ten persons age 16 and older (27.4%) reported having been injured in a vehicle crash where they required medical attention. Approximately 16% of the total population, age 16 and older, has received injuries from motor vehicle crashes severe enough to prevent them from performing some of their normal activities for at least a week. Persons not wearing a safety belt at the time of the (most recent) crash were about twice as likely to be hospitalized from the crash-related injuries as those wearing safety belts. People have more concerns about stopping at the scene of a vehicle crash in 2003. However, virtually everyone said that they would call for help in situations where it was too dangerous to stop and provide assistance. The proportion of drivers who have a wireless phone with them when they drive has continued to increase.

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INTRODUCTION

Background

The Motor Vehicle Occupant Safety Survey is conducted biennially for the National Highway Traffic Safety Administration (NHTSA). It is a national telephone survey composed of two questionnaires, each administered to several thousand randomly selected persons age 16 and older. The Version 1 Questionnaire emphasizes safety belt issues while Version 2 emphasizes child restraint issues. The questionnaires also contain smaller modules addressing such areas as air bags, emergency medical services, and crash injury experience. For the 2003 survey, each questionnaire was administered to approximately 6,000 individuals.

NHTSA conducted the first Motor Vehicle Occupant Safety Survey in 1994. Subsequent versions of the survey have included modest revisions to reflect changes in information needs. Thus the 2003 survey contained numerous items from the earlier surveys, which allows the agency to monitor change over time in knowledge, attitudes, and (reported) behavior related to motor vehicle occupant safety. The 2003 survey also included new questions dealing with such areas as wireless phone features and use of wireless phones while driving.

The following report presents findings from the 2003 Motor Vehicle Occupant Safety Survey pertaining to crash injury and emergency medical services. Section 1 presents the 2003 results. Section 2 compares findings across years, from 1994 through 2003.

Methodology

The 2003 Motor Vehicle Occupant Safety Survey was conducted by Schulman, Ronca & Bucuvalas, Inc. (SRBI), a national survey research organization. SRBI conducted a total of 12,377 telephone interviews among a national population sample. To reduce the burden on respondents, the survey employed two questionnaires. A total of 6,180 interviews were completed in Version 1 and 6,197 interviews were completed with Version 2. Although some questions appeared in both versions (e.g., demographics, crash injury experience, safety belt use), each questionnaire had its own set of distinct topics. Each sample was composed of approximately 6,000 persons age 16 and older, including oversamples of persons ages 16-39. The procedures used in the survey yielded national estimates of the target population within specified limits of expected sampling variability, from which valid generalizations can be made to the general public.

The survey was conducted from January 8, 2003 to March 30, 2003. For a complete description of the methodology and sample disposition, including computation of weights, refer to the 2003 Motor Vehicle Occupant Safety Survey, Volume 1: Methodology Report. This report includes English and Spanish language versions of the questionnaires.

The percentages presented in this report are weighted to reflect accurately the national population age 16 and older. Unweighted sample sizes ("N's") are included so that readers know the exact number of respondents answering a given question, allowing them to estimate sampling precision (see Appendix A for related technical information).

Percentages for some items may not add to 100 percent due to rounding, or because the question allowed for more than one response. In addition, the number of cases involved in subgroup analyses may not sum to the grand total who responded to the primary questionnaire item being analyzed. Reasons for this include some form of nonresponse on the grouping variables (e.g., "Don't Know" or "Refused"), or use of only selected subgroups in the analysis. Moreover, if one of the variables involved in the subgroup analysis appeared on both versions of the questionnaire but the other(s) appeared on only one questionnaire, then the subgroup analysis was restricted to data from only one version of the questionnaire.

There are also instances where a percentage is cited in text that combines two or more response categories, but that percentage differs by a percentage point from the sum of the component categories that also are listed in the report. This is because the numbers cited in the report have been rounded, whereas the numbers being combined are the unrounded numbers.

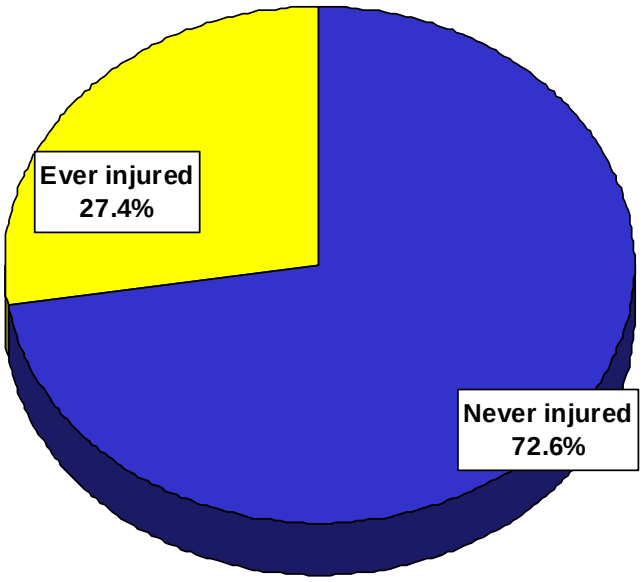
The survey employed two questions to categorize cases for subgroup analyses involving race and ethnicity. The first asked respondents if they considered themselves to be Hispanic or Latino. Those who said "yes" composed the Hispanic analytic subgroup in the study, and those who said "No" composed a non-Hispanic comparison group. The second question was treated independently of the ethnicity question, i.e., it was asked of every respondent. The interviewers recited several different racial categories, and asked respondents which categories described them. Respondents could select more than one. For purposes of analysis, a respondent was assigned to a specific racial category if s/he selected only that category. The few respondents who selected multiple categories (fewer than 350 out of more than 12,000 cases) were analyzed as a separate multi-racial group. Because race and ethnicity were considered independently, each racial group could include both Hispanics and non-Hispanics, and the Hispanic analytic subgroup included both African Americans/Blacks and Whites.

SECTION 1: 2003 SURVEY RESULTS

INJURIES IN VEHICLE CRASHES

Nearly three-in-ten persons (27.4%) age 16 and over reported ever having been injured in a motor vehicle crash where they required medical attention. The proportions for males and females were very close to the overall proportion — 27% and 28% respectively.

Figure 1
Crash Injury Experience, 2003



Qx: Have you ever been injured in a motor vehicle accident? Only count injuries that required medical attention.

Qx: Have you ever been injured in a motor vehicle accident when you were a passenger, or have you ever been hit and injured by a motor vehicle when you were walking or riding a bike? Only count injuries that required medical attention.

Base: Total population 16 and over.

Unweighted *N=12,377*

Nearly one-third (30%)[1] of those who had ever been injured in a motor vehicle crash incurred a crash-related injury in the last five years. About 10% occurred 6 to 9 years ago, 15% occurred 10 to 14 years ago, and 42% occurred more than 14 years ago.

Table 1
When Most Recent Crash-Related Injury Occurred, 2003

Qx: How long ago did [that/the most recent] accident occur?

Base: Ever injured in a vehicle accident.

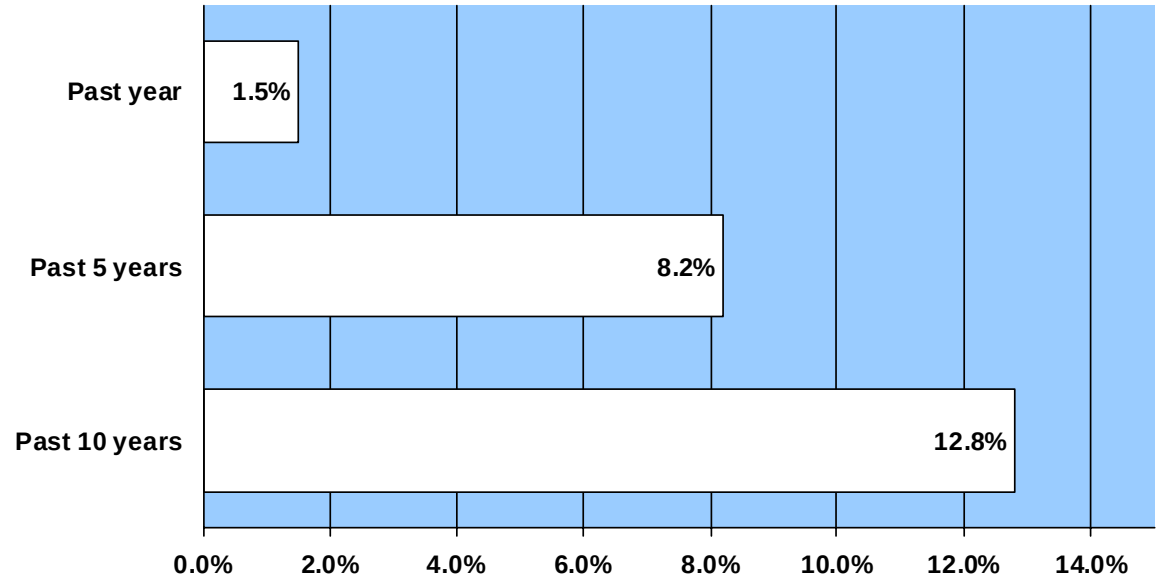
Unweighted *N=3,470*

Within the past year	6%
1 year ago	4%
2 years ago	6%
3 years ago	5%
4 years ago	4%
5 years ago	5%
6 to 9 years ago	10%
10 to 14 years ago	15%
15 to 19 years ago	10%
20 to 29 years ago	16%
30 or more years ago	17%
Don't know/refuse	2%

[1] When a percentage is cited in text that combines two or more response categories, it is combined using non-rounded numbers. That combined percentage may differ slightly from the sum of the listed percentages for the component categories because the category percentages are rounded numbers.

Another way to look at these data is to ask what proportion of the total population age 16 and older had been injured in a crash in the last year, the last five years, or the last 10 years. This analysis showed that 1.5% of the total population was injured in a crash in the last year, 8.2% was injured in a crash in the last five years (this includes those who were injured in a crash in the last year), and 12.8% of the population was injured in a crash in the last ten years (this includes those who were injured in a crash in the last five years).

Figure 2
Percent Of Total Population Injured In A Vehicle Crash Over Time, 2003



Qx: Have you ever been injured in a motor vehicle accident? Only count injuries that required medical attention.

Qx: Have you ever been injured in a motor vehicle accident when you were a passenger, or have you ever been hit and injured by a motor vehicle when you were walking or riding a bike? Only count injuries that required medical attention.

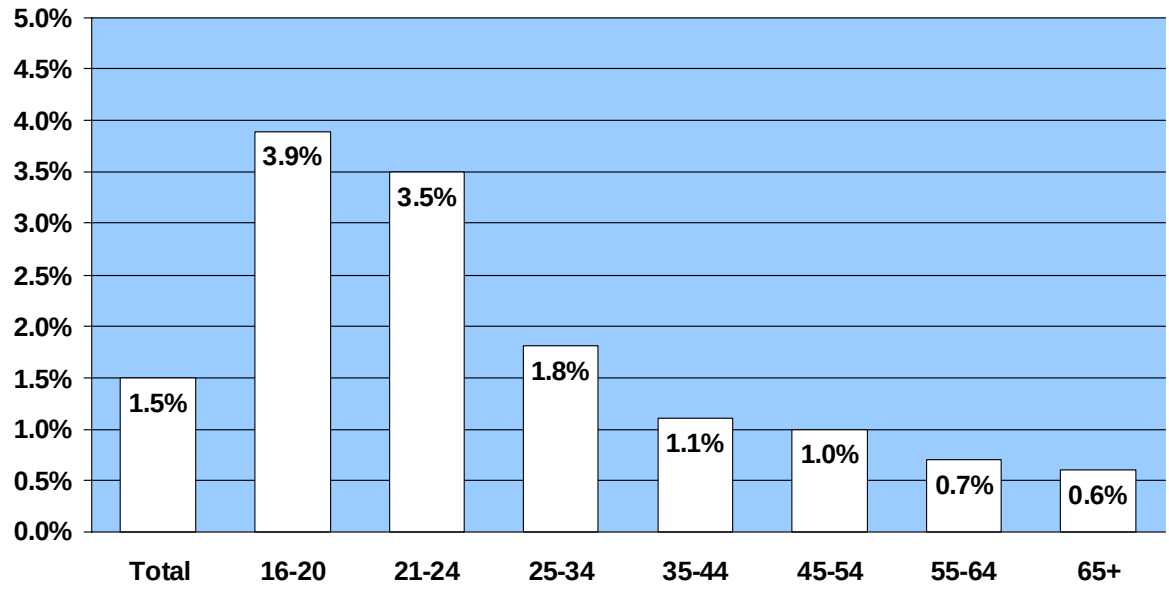
Qx: How long ago did [that/the most recent] accident occur?

Base: Total population 16 and over.

Unweighted *N=12,377*

The prevalence of crash-related injuries in the last year was highest among those in the 16 to 20 age group (3.9%) and the 21 to 24 age group (3.5%). These age groups comprised almost two-fifths (39%) of all persons age 16 and older who sustained crash-related injuries in the past year, and showed a rate more than two times the population average of 1.5%. The rate dropped to 1.8% of those in the 25 to 34 age group, 1.1% in the 35 to 44 age group, and 1.0% for those 45-54 years old. The proportion of persons with crash-related injuries in the past year was lowest for those 55-64 years old (0.7%) and those 65 and older (0.6%).

Figure 3
Percent Injured In A Vehicle Crash Last Year By Age, 2003



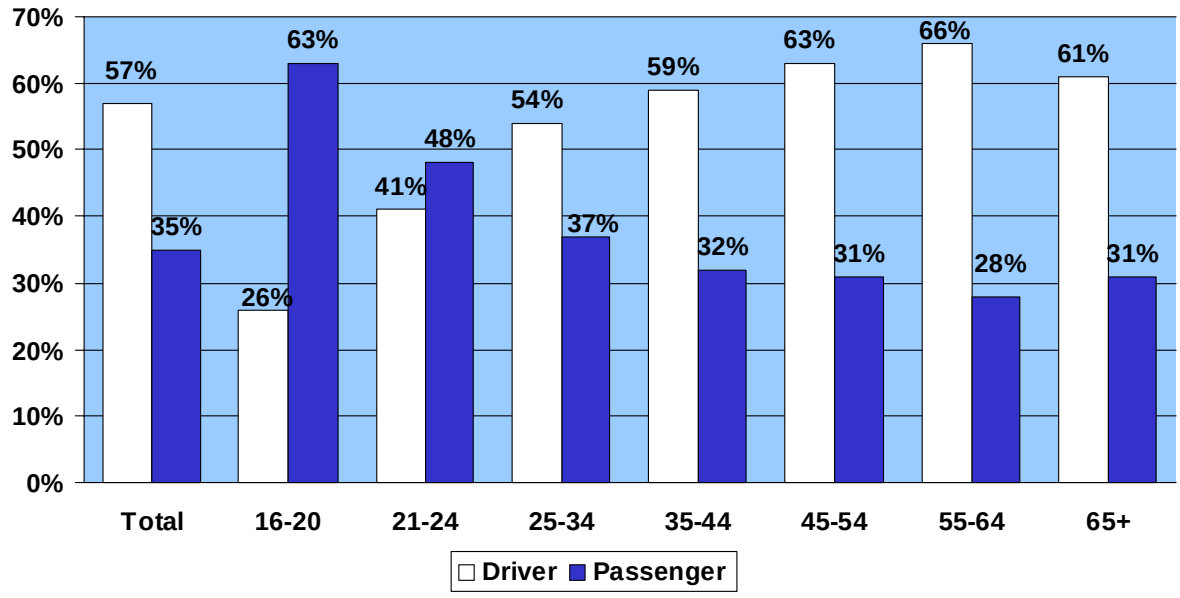
Qx: How long ago did [that/the most recent] accident occur?

Base: Total population 16 and over.

Unweighted *N=12,377*

More than half (57%) of those injured in (most recent)[2] vehicle crashes were drivers. The bulk of the remaining crash victims (35%) were passengers, but some were pedestrians (4%) or bicyclists (3%). The youngest group had the lowest proportion of drivers injured. Only about one-in-four (26%) of those injured in the 16 to 20 age group were drivers. This proportion rose to two-fifths (41%) for those in the 21 to 24 age group and to over half (54%) of those in the 25-34 age group. It increased to 59% of those age 35-44, 63% of those age 45-54, 66% of those age 55-64% and then declined to 61% of those 65 and older.

Figure 4
Injured By Driver/Passenger Status And Age, 2003



Qx: Were you a driver or a passenger in that accident?

Base: Ever injured in a vehicle accident.

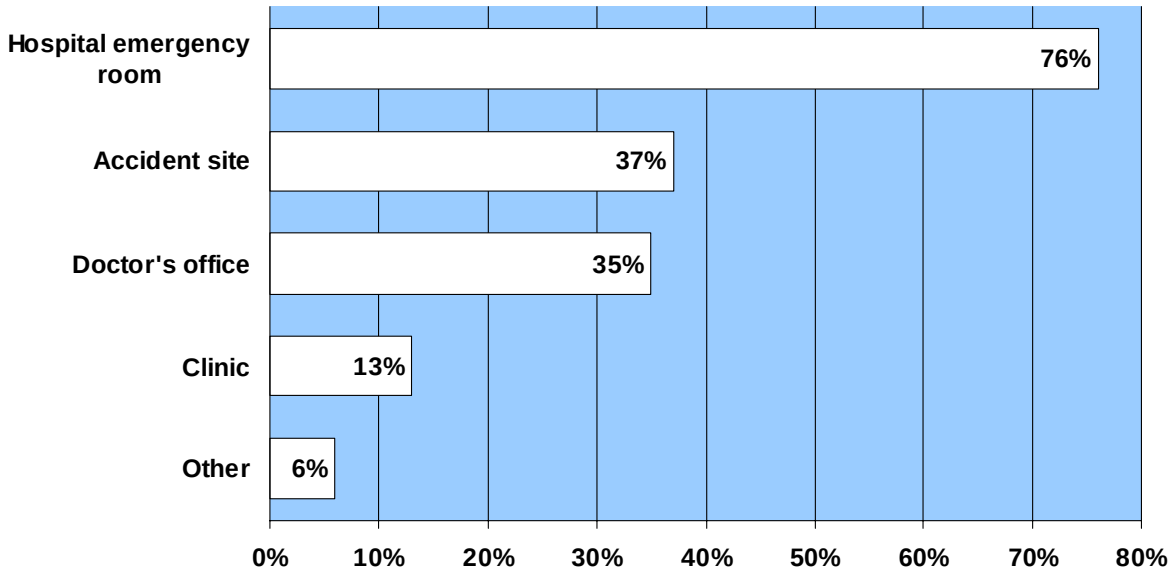
Unweighted *N=3,470*

[2] In cases where a respondent was injured in multiple crashes, data are presented only for the most recent crash.

TREATED FOR CRASH INJURIES

Those who received a crash-related injury requiring medical attention were asked where they were treated for those (most recent)[3] injuries. They were given the opportunity to report more than one type of treatment site if, in fact, they received treatment for those injuries at more than one place. About three-in-four (76%) were treated in a hospital emergency room. Additionally, more than one-third (37%) were treated at the crash site, about one-third (35%) reported being treated in a doctor's office, 13% were treated at a clinic, and 6% mentioned some other location.

Figure 5
Where Treated For Crash-Related Injuries*, 2003



Qx: At which of the following were you treated for your injuries?

Base: Ever injured in a vehicle accident.

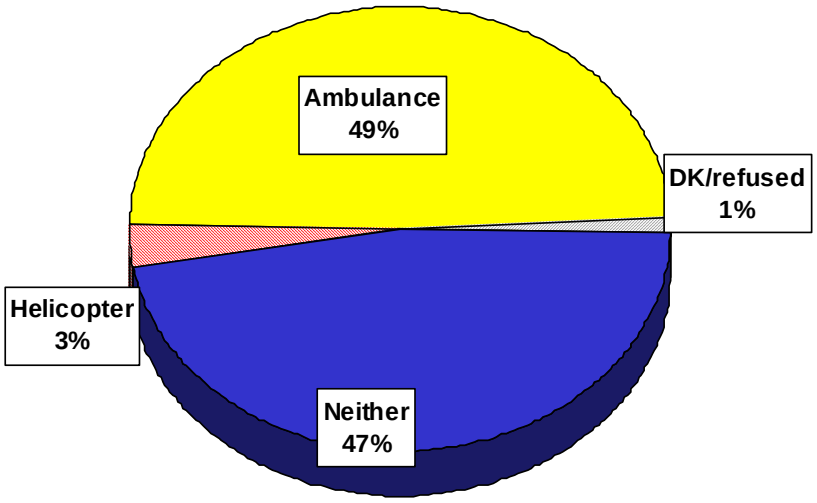
Unweighted *N=3,470*

** Total exceeds 100% since multiple responses were accepted.*

[3] In cases where a respondent was injured in multiple crashes, data are presented only for the most recent crash.

About one-half (52%) of those injured in a vehicle crash were transported to another location for treatment by ambulance (49%) or helicopter (3%). [4]

Figure 6
How Transported From Crash Site, 2003



Qx: Were you transported from the accident scene by ambulance or helicopter?

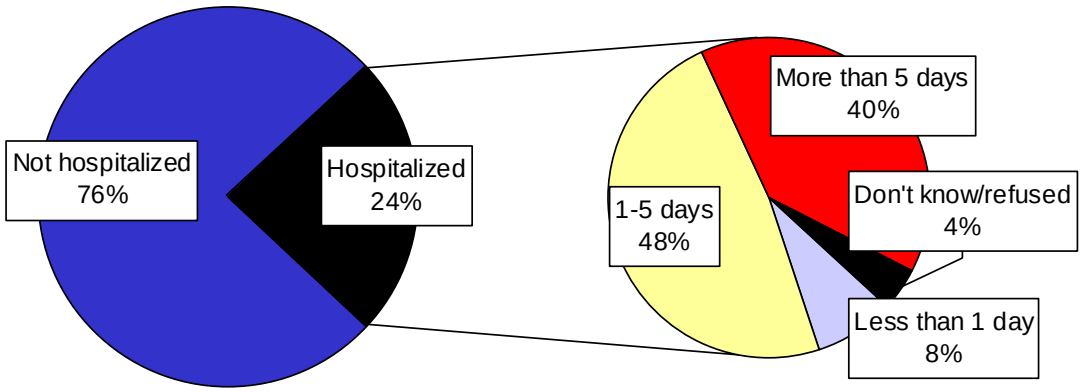
Base: Ever been injured in a vehicle accident.

Unweighted *N=3,470*

[4] In cases where a respondent was injured in multiple crashes, data are presented only for the most recent crash.

About one-fourth (24%) of those who were injured in a vehicle crash were hospitalized.[5] Two-fifths of those hospitalized (40%) reported being hospitalized for more than 5 days. This represented 10% of persons injured in crashes.

Figure 7
Length Of Hospitalization, 2003



Qx: Were you hospitalized?

Qx: How long were you hospitalized?

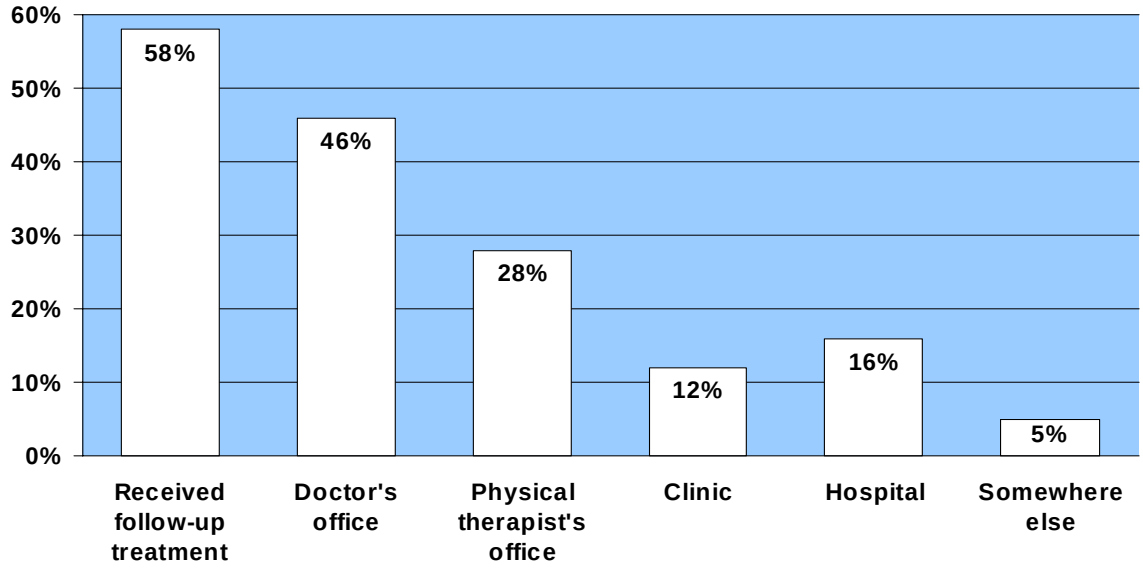
Base: Ever been injured in a vehicle accident.

Unweighted *N=3,470*

[5] In cases where a respondent was injured in multiple crashes, data are presented only for the most recent crash.

More than half (58%) of those injured in a vehicle crash received follow-up treatment.[6] Nearly half (46%) of those injured received follow-up treatment at a doctor's office, 28% at a physical therapist's office, 16% at a hospital, and 12% at a clinic.

Figure 8
Proportion Who Received Follow-Up Treatment After Crash And Where Treatment Was Given*, 2003



Qx: Did you receive any continuing or follow-up treatment for your injuries?

Qx: Where did you receive this follow-up treatment? Was it at… ?

Base: Ever been injured in vehicle accident.

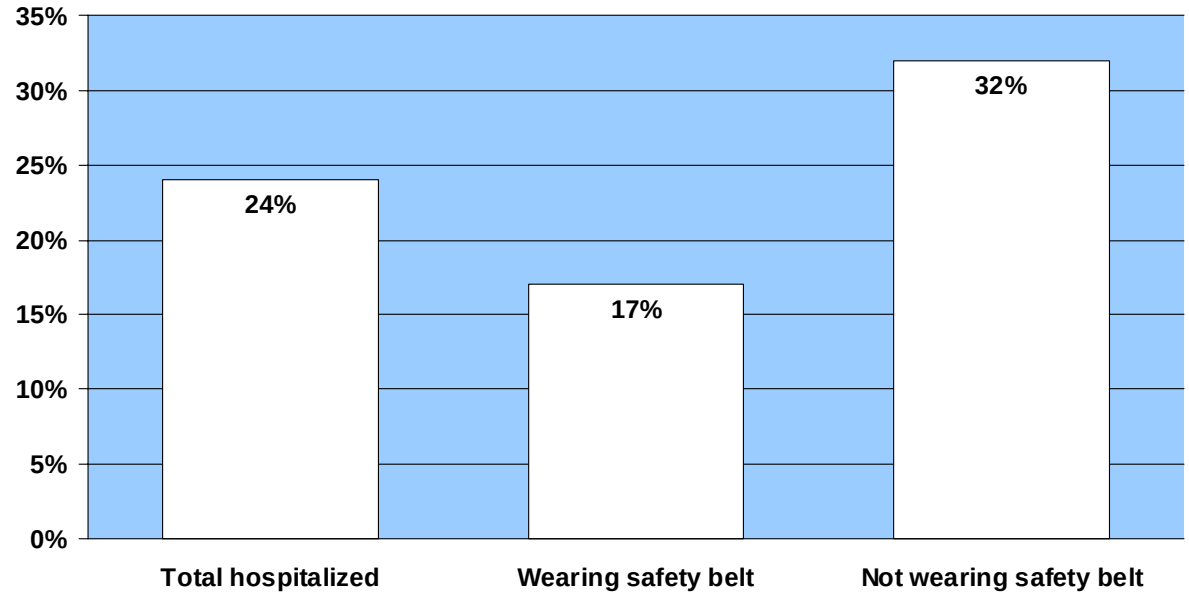
Unweighted *N=3,470*

** Total exceeds 100% since multiple responses were accepted.*

[6] In cases where a respondent was injured in multiple crashes, data are presented only for the most recent crash.

Use of safety belts at the time of the crash made a significant difference in hospitalization outcomes. Persons who were not wearing their safety belt at the time of the crash were almost twice as likely to be hospitalized as those wearing their safety belt (32% versus 17%).

Figure 9
Hospitalized By Safety Belt Use, 2003



Qx: Were you hospitalized?

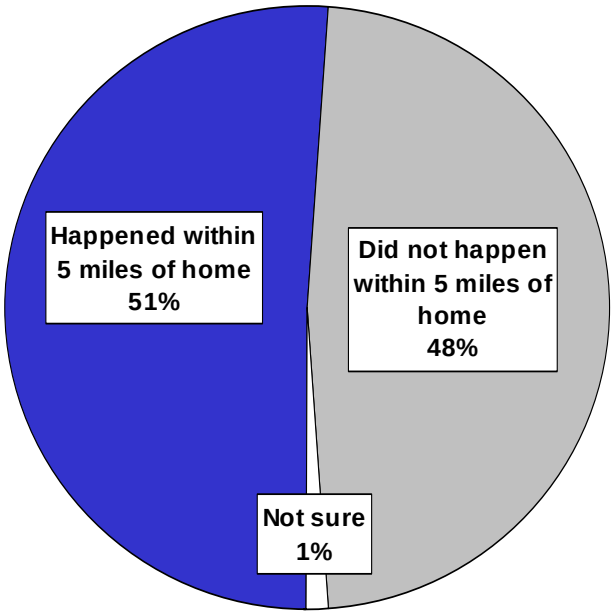
Qx: Were you wearing your seat belt at the time of the accident?

Base: Ever been injured in a vehicle accident.

Unweighted *N=3,470*

About half of those injured in a motor vehicle crash said the crash occurred within 5 miles of home (51%).

Figure 10
Crash Occurred Less Than Five Miles From Home, 2003



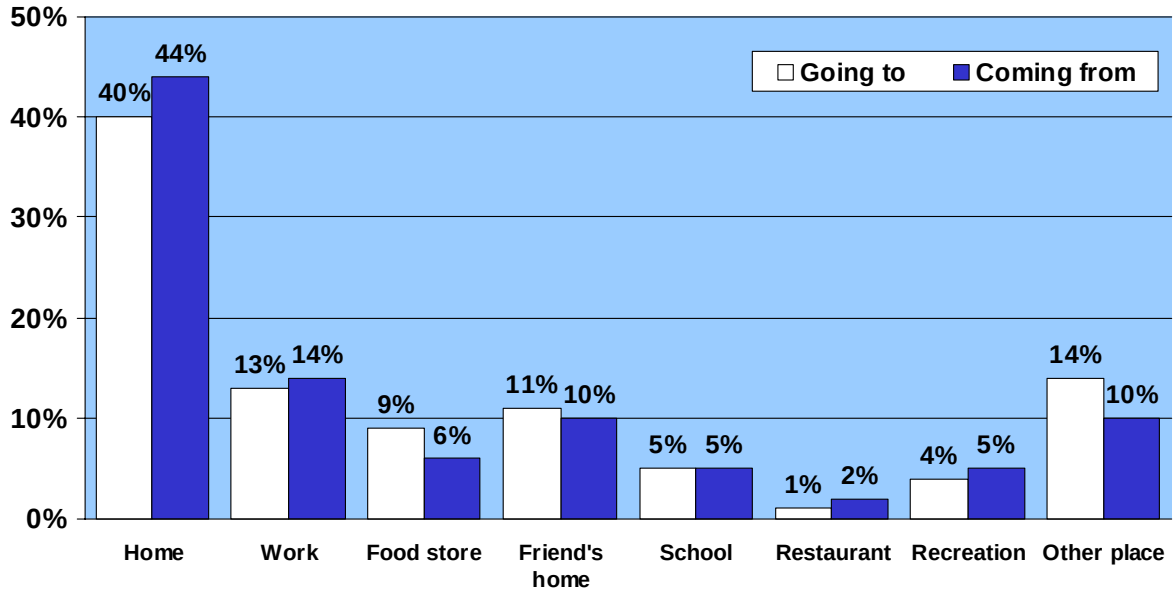
Qx: Did (that/the most recent) accident happen less than five miles from where you lived at the time of the accident?

Base: Ever been injured in a vehicle accident.

Unweighted *N=1,757*

Most of those who said they were injured in a crash that occurred within five miles of home said they were going home (40%) or coming from home (44%) when the crash occurred.

Figure 11
Where Going To and Coming From When Crash Occurred, 2003



Qx: Where were you GOING when you had that accident? Were you going home, going to work, going to the food store, going to a friend's home or were you going somewhere else?

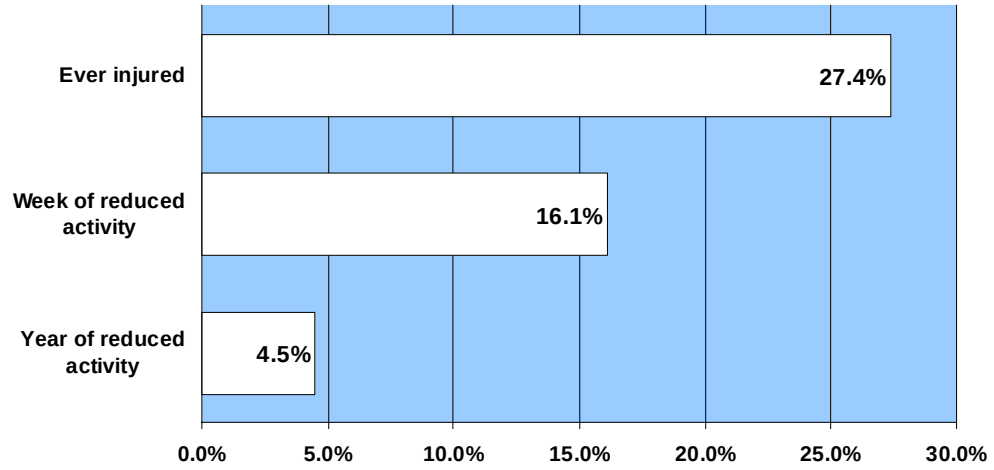
Qx: Where were you COMING FROM when you had that accident? Were you coming from …

Base: Injured in a vehicle accident that was less than 5 miles from home.

Unweighted *N=898*

As mentioned earlier (Figure 1, page 2), 27.4% of the total population said they had been injured in a vehicle crash to the extent of needing medical attention. More than half of those ever injured, 16.1% of the total population, have at some time been unable to perform some of their normal activities (work, school, household) for at least a week because of the crash. Almost one-in-twenty (4.5% of the total population) were unable to resume some of their normal activities even a year after the crash.

Figure 12
Level Of Disability Resulting From A Vehicle Crash, 2003



Qx: Have you ever been injured in a motor vehicle accident? Only count injuries that required medical attention.

Qx: Have you ever been injured in a motor vehicle accident when you were a passenger, or have you ever been hit and injured by a motor vehicle when you were walking or riding a bike? Only count injuries that required medical attention.

Qx: Did your injuries from that accident prevent you from performing any of your normal activities (work, school, household) for at least a week?

Qx: Have you ever received injuries from a vehicle accident that prevented you from performing any of your normal activities (work, school, household) for at least a week?

Qx: Were there any activities that you were unable to resume because of your injuries even a year after the accident?

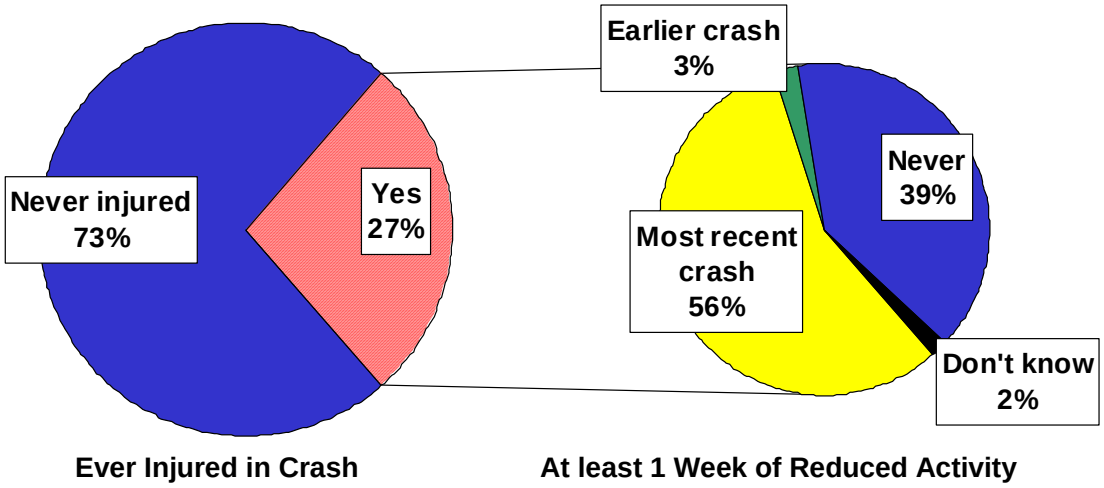
Qx: Have you ever received injuries from a vehicle accident that prevented you from performing any of your normal activities (work, school, household) a year after the accident?

Base: Total population 16 and over.

Unweighted *N=12,377*

About one-in-four (27%) had been injured in a motor vehicle crash to the point where they required medical attention. About three-in-five of those ever injured (59%) were injured to the point where they were unable to perform some of their normal activities (work, school, household) for at least a week either in the most recent crash (56%) or an earlier vehicle crash (3%). The remaining 41% reported that they had never incurred crash injuries that prevented them from performing all normal activities a week afterwards, or else reported that they were unsure.

Figure 13
Crash Injury Experience, 2003



Qx: Have you ever been injured in a motor vehicle accident? Only count injuries that required medical attention.

Qx: Have you ever been injured in a motor vehicle accident when you were a passenger, or have you ever been hit and injured by a motor vehicle when you were walking or riding a bike? Only count injuries that required medical attention.

Qx: Did your injuries from that accident prevent you from performing any of your normal activities (work, school, household) for at least a week?

Qx: Have you ever received injuries from a vehicle accident that prevented you from performing any of your normal activities (work, school, household) for at least a week?

Base: Total population 16 and over.

Unweighted *N=12,377*

CONCERNS ABOUT STOPPING AT A CRASH

About two-fifths (43%) of the driving age public said they would have no concerns about stopping to help or call if they saw a crash where no one was at the scene to help. The most commonly mentioned concerns were about personal safety (21%) and not knowing how to provide assistance (19%). The third most often mentioned concern was the fear of being sued for giving improper assistance (13%). Concerns about causing further injury to the victim were cited by 9%.

Females were more concerned about stopping at the site of a crash than males. While half of males (50%) had no concern about stopping to help or call, less than two-fifths (37%) of females had no concerns. Females were more concerned than males about not knowing what to do or how to help (22% vs. 16%). Females were also more concerned about personal safety issues than males (25% vs. 16%), including the possibility that the crash could be a ploy to lure and harm innocent people (6% vs. 3%). Females, however, were less concerned about the possibility of lawsuits resulting from offering improper assistance than males (11% vs. 14%).

Table 2
Concerns About Stopping To Help At A Vehicle Crash By Gender, 2003

Qx: Suppose that you are driving, you see an accident happen and no one is there at the scene to help. What concerns might you have about stopping to help? Anything else?

[Multiple responses were accepted.]

Base: Total population age 16 and over.

	Total	Male	Female
Unweighted N (total population)	*6,197*	*2,944*	*3,253*
No concern/would stop to help or call	**43%**	**50%**	**37%**
Assistance (net)	**19%**	**16%**	**22%**
Not knowing how to help/what to do	19%	16%	21%
People already there	*	*	*
Not physically able to help	*	*	*
Personal safety (net)	**21%**	**16%**	**25%**
Ploy to hurt innocent people	4%	3%	6%
Concern for my safety	16%	12%	19%
Fear of contracting HIV	1%	1%	1%
Ability to stop safely	1%	1%	1%
Depends on safety of location	*	*	*
Safety of family, kids, other occupants	1%	*	1%
Risk of fire, flames, or explosion	1%	1%	*
Depends on time of day	*	*	*
Lawsuits/liability for improper assistance	**13%**	**14%**	**11%**
Victim's safety (net)	**9%**	**9%**	**9%**
Possibility of causing further injury	6%	6%	6%
Depends on seriousness of crash	*	*	*
Extent of injuries	3%	3%	3%
Other	**3%**	**2%**	**4%**
Don't want to see dead, mangled bodies	1%	*	1%
If I were rushed, late, in a hurry	*	*	*
Other	3%	2%	3%
Don't know/refuse	**7%**	**6%**	**8%**

** Less than 0.5%.*

Overall, proportionately more African Americans/Blacks (46%) than Whites (42%) said they had no concerns about stopping at the site of a crash. Whites (20%) were more concerned than African Americans/Blacks (16%) about being unable to offer the correct assistance. Whites (22%) and non-Hispanics (22%) were more concerned about personal safety than African Americans/Blacks (19%) and Hispanics (14%). Whites (14%) and non-Hispanics (14%) were also more concerned about the possibility of a lawsuit arising out of improper assistance than African Americans/Blacks (6%) or Hispanics (6%).[7]

Table 3
Concerns About Stopping To Help At A Vehicle Crash By Race & Ethnicity, 2003

Qx: Suppose that you are driving, you see an accident happen and no one is there at the scene to help. What concerns might you have about stopping to help? Anything else?

[Multiple responses were accepted.]

Base: Total population age 16 and over.

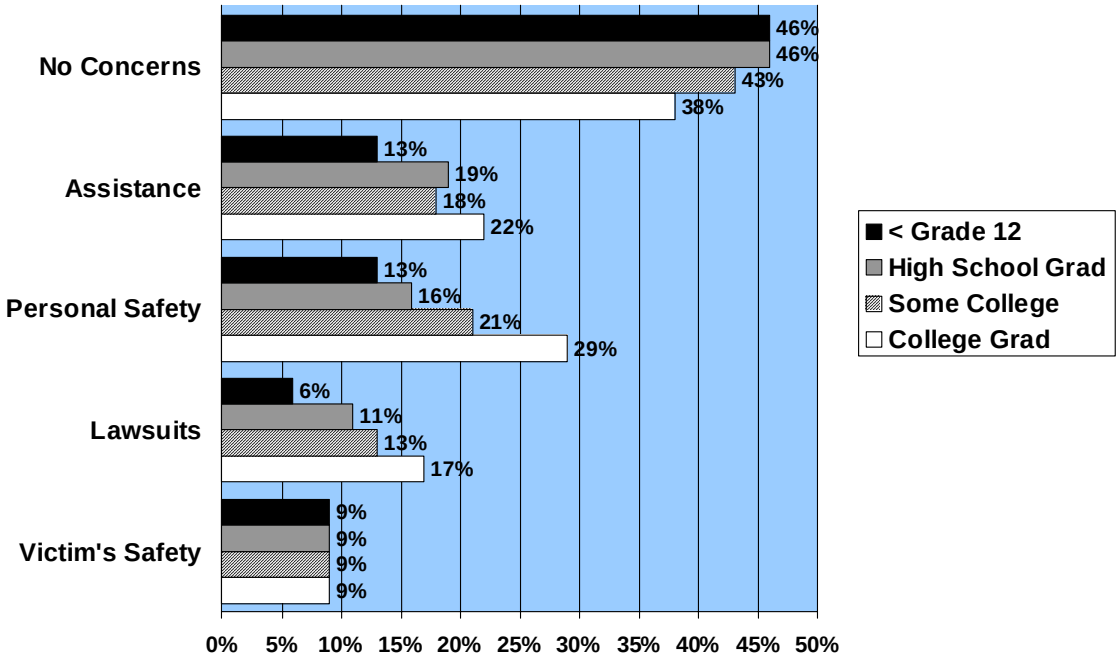
	White	AfAm/Black	Hispanic	Non-Hispanic
Unweighted N (total population)	*4,588*	*559*	*762*	*5,358*
No concern/would stop to help or call	**42%**	**46%**	**40%**	**43%**
Assistance (net)	**20%**	**16%**	**18%**	**19%**
Not knowing how to help/what to do	20%	16%	18%	19%
People already there	*	-	*	*
Not physically able	*	*	*	*
Personal safety (net)	**22%**	**19%**	**14%**	**22%**
Ploy to hurt innocent people	4%	5%	3%	4%
Concern for my safety	17%	13%	11%	17%
Fear of contracting HIV	1%	1%	*	1%
Ability to stop safely	1%	*	1%	1%
Depends on safety of location	*	*	*	*
Safety of family, kids, other occupants	1%	*	1%	1%
Risk of fire, flames, or explosion	1%	1%	*	1%
Depends on time of day	*	*	-	*
Lawsuits/liability for improper assistance	**14%**	**6%**	**6%**	**14%**
Victim's safety (net)	**9%**	**11%**	**8%**	**9%**
Possibility of causing further injury	6%	6%	5%	6%
Depends on seriousness of crash	*	-	-	*
Extent of injuries	3%	5%	4%	3%
Other	**3%**	**4%**	**3%**	**3%**
Don't want to see dead, mangled bodies	1%	1%	*	1%
If I were rushed, late, in a hurry	*	*	*	*
Other	3%	3%	2%	3%
Don't know/refuse	**5%**	**9%**	**18%**	**5%**

** Less than 0.5%.* *- None.* *AfAm is an abbreviation for African American.*

[7] The Motor Vehicle Occupant Safety Survey collects data from all races. However, because of their small numbers in the survey sample and the resulting reduction in the precision of associated sample estimates, this report does not include breakouts of the data for American Indians and Alaskan Natives, Asians, and Native Hawaiians and Other Pacific Islanders.

College graduates were most likely to express concerns about stopping to help. Fewer than two-fifths (38%) said they had no concerns about stopping compared to 43% of those with some college experience and 46% of those who had not entered college. Concerns about personal safety, and legal liability, increased as educational level increased.

Figure 14
Concerns About Stopping To Help At A Crash By Education, 2003



Qx: Suppose that you are driving, you see an accident happen and no one is there at the scene to help. What concerns might you have about stopping to help? Anything else? [Multiple responses were accepted.]

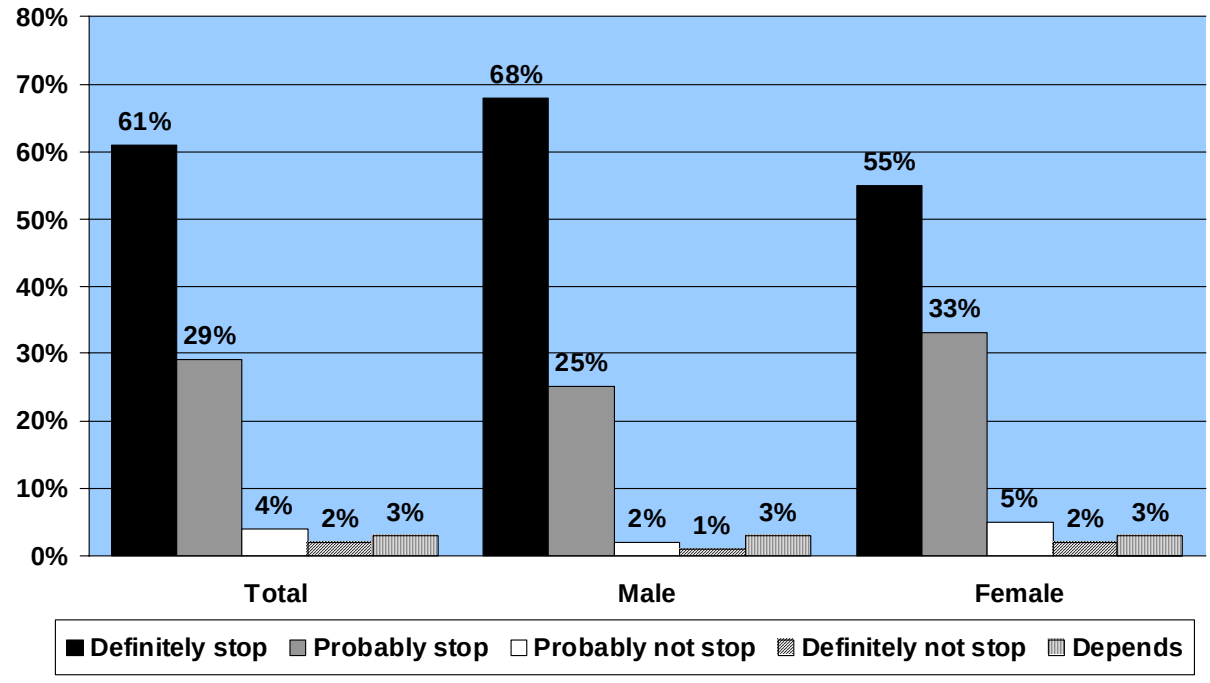
Base: Total population age 16 and over.

Unweighted *N=6,197*

After being asked what *concerns* they might have about stopping to help at a crash site, respondents were asked how likely they would be to stop. Overall, about three-in-five (61%) said they definitely would stop. An additional three-in-ten (29%) said they probably would stop. By contrast, 4% felt they probably would not stop and 2% believed they definitely would not stop. In addition 3% said "it depends."

Earlier, the survey found that females were more concerned than males about stopping at a crash scene (Table 2). Similarly, females (55%) were less likely than males (68%) to respond that they would definitely stop. This is almost offset by the fact that females were more likely to say they probably would stop than males (33% vs. 25%). Nonetheless, females were about twice as likely as males to say they probably (5% vs. 2%) or definitely (2% vs. 1%) would not stop.

Figure 15
Likelihood Of Stopping By Gender, 2003



Qx: How likely would you be to stop? Do you think...

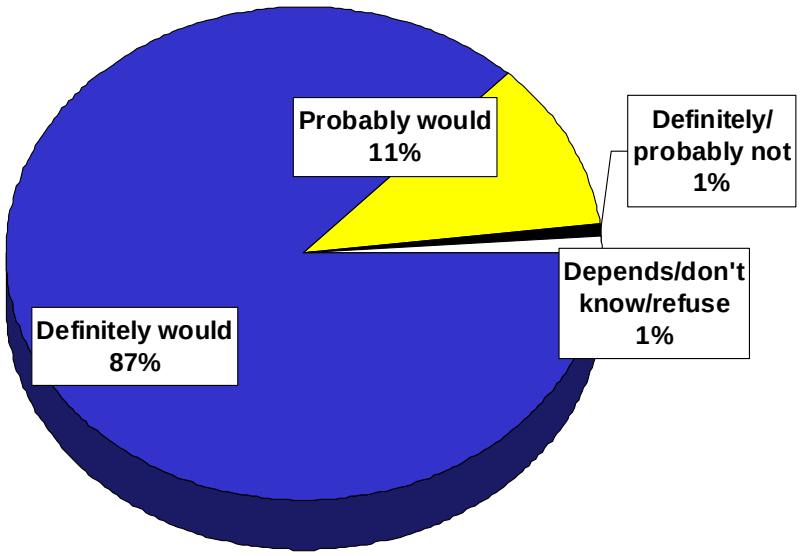
Base: Total population age 16 and over.

Unweighted *N=6,197*

TELEPHONING FOR HELP AT AN INJURY CRASH

Respondents were also asked how likely they would be to call for help in situations where it was too dangerous to stop and provide assistance. Virtually everyone (98%) said they would call at the nearest phone, with 87% saying they definitely would call and 11% saying they probably would call.

Figure 16
Likelihood Of Calling To Get Help For A Crash, 2003



Qx: Suppose you are driving, you see an accident and think that someone might be injured, but it is too dangerous to pull over and help at the scene. How likely would you be to call for help from the nearest available phone? (If no one else was on the scene.) Do you think that you…?

Base: Total population age 16 and over.

Unweighted *N=6,197*

Respondents who did not say they "definitely would call" were asked what, if anything, would prevent them from calling. About one-quarter (26%) said the unavailability of a phone was a barrier to calling, while 9% said safety concerns would prevent them and 27% mentioned other reasons. Fourteen percent said they were not sure or would not say what would prevent them from calling.

Table 4
Reasons For Not Making A Call, 2003

Qx: What, if anything, would prevent you from telephoning for help? [Multiple responses were accepted.]

Base:Did not say "definitely would call".

	Total	Male	Female
Unweighted N	*792*	*432*	*360*
Nothing would prevent me	**31%**	**28%**	**34%**
Telephone availability (net)	**26%**	**27%**	**24%**
Availability, finding, access	17%	18%	16%
Don't have car or cellular phone	7%	7%	7%
Phone not working	3%	3%	3%
Other availability	2%	2%	1%
Safety concerns (net)	**9%**	**9%**	**10%**
Unsafe area	3%	3%	4%
Hazardous situation	4%	5%	3%
Time of day	*	-	*
Other safety	2%	2%	3%
Miscellaneous (net)	**27%**	**30%**	**22%**
Assistance already there	3%	2%	3%
In a hurry	4%	4%	3%
Personal emergency	2%	2%	1%
Depends on the accident	3%	4%	1%
Traffic	3%	2%	5%
Thought someone already called	8%	9%	6%
Possible lawsuit	1%	1%	*
Other miscellaneous	6%	7%	6%
Not sure/refused	**14%**	**12%**	**16%**

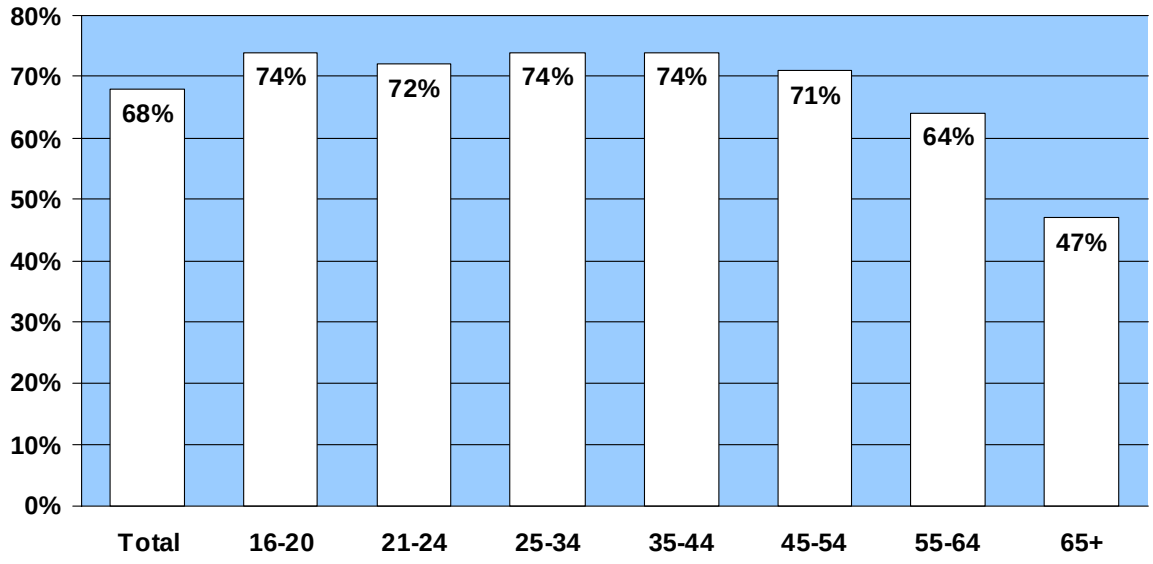
** Less than 0.5%.* *- None.*

AVAILABILITY AND USE OF WIRELESS PHONES IN VEHICLE

The availability of wireless phones in vehicles makes it easier for individuals who come upon a crash to report it to the police or call for EMS assistance. More than two-thirds of drivers age 16 or over (68%) reported that they usually have a wireless phone in their vehicle when they drive.

While there was little difference in the proportion of males (67%) and females (69%) who reported carrying wireless phones with them when they drove, drivers over the age of 54 were less likely than younger drivers to have them. A phone was usually in the vehicle of almost three-quarters of those ages 16 to 54. The proportion of drivers with car phones then declines to 64% for those ages 55 to 64, and to 47% for those 65 and over.

Figure 17
Usually Have A Wireless Phone In Vehicle By Age, 2003



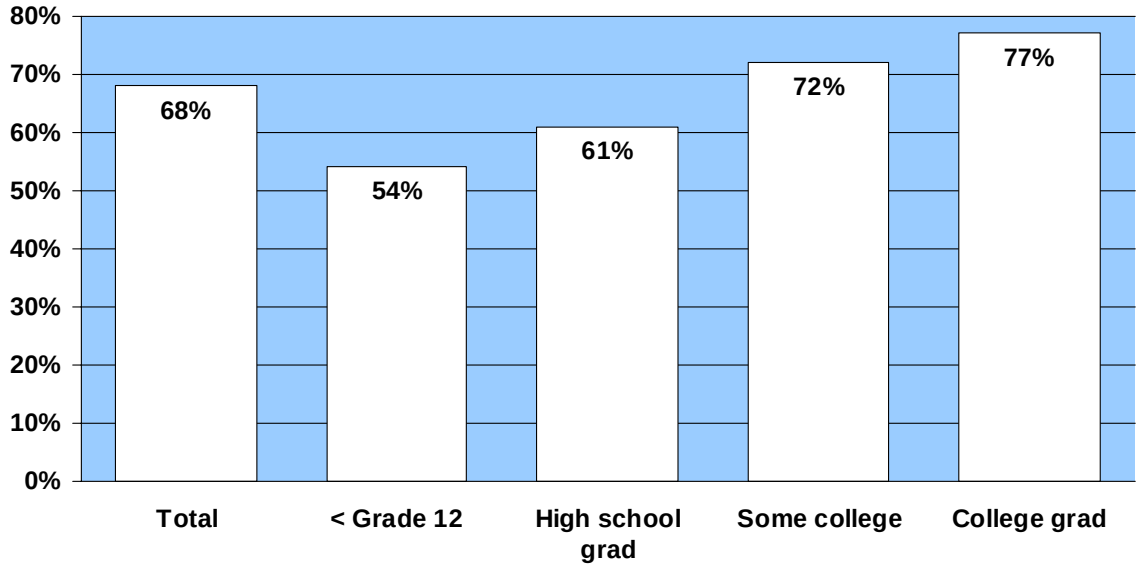
Qx: When you drive a motor vehicle, do you usually have a wireless phone of some type in the vehicle with you? This could be a car phone, a cellular phone, a PCS phone, a GSM phone or a satellite phone?

Base: Drivers.

Unweighted *N=5,509*

Having a wireless phone in the vehicle was directly related to educational level. Fifty-four percent of those who had not graduated from high school reported usually having a wireless phone with them in the vehicle when they drove. The percentage increased to 61% of those who graduated from high school, to 72% of those with some college experience, and to 77% of those who had graduated college.

Figure 18
Usually Have A Wireless Phone in Vehicle By Education, 2003



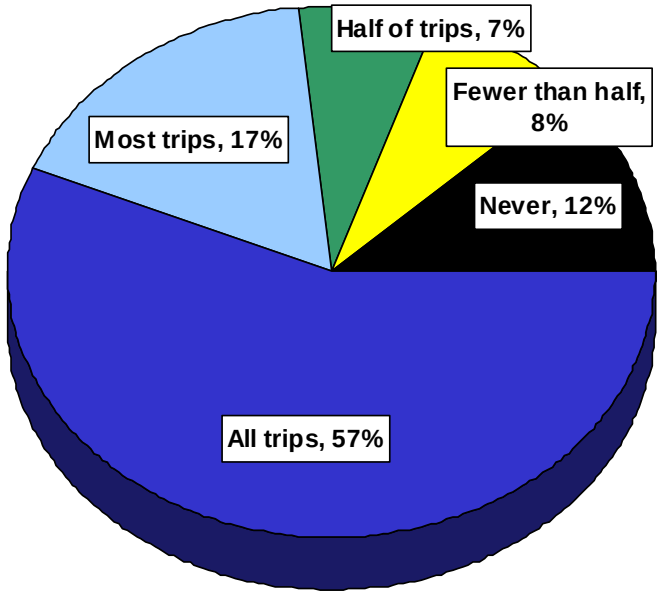
Qx: When you drive a motor vehicle, do you usually have a wireless phone of some type in the vehicle with you? This could be a car phone, a cellular phone, a PCS phone, a GSM phone or a satellite phone?

Base: Drivers.

Unweighted *N=5,509*

Of those who said they usually have a wireless phone in their vehicle when they drive, about three-quarters (73%)[8] said that they keep the phone turned on so they can receive calls during all trips (57%) or most trips (17%). Another 7% said they keep their phone turned on during about half of their trips, and 8% said they keep their phone turned on during fewer than half of their trips. Twelve percent said that they never keep the phone turned on when they drive.

Figure 19
How Often Wireless Phone Is On While Driving, 2003



Qx: When you drive, how often would you say you keep the phone turned on so that you can receive calls? Would you say that you keep the phone turned on during all trips, most trips, about half your trips, fewer than half your trips or never?

Base: Usually have a wireless phone in vehicle.

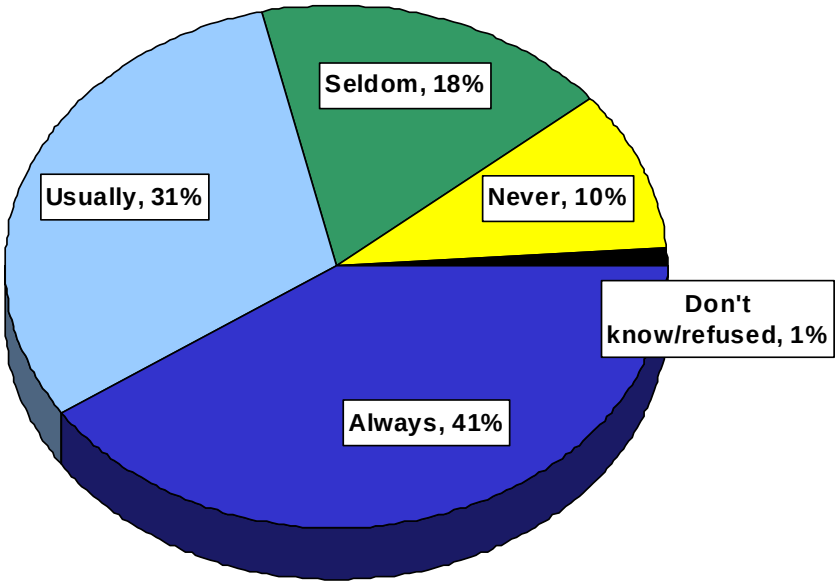
Unweighted *N=3,846*

**The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.*

[8] The number does not equal the sum of the components in the Figure due to rounding.

Among drivers who at least sometimes kept the phone turned on to receive calls while in the vehicle, 72% said that they always (41%) or usually (31%) answered incoming calls when driving. Males (75%) were more likely than females (68%) to say they always or usually answered the phone while driving. In addition, Whites (73%) and non-Hispanics (72%) were more likely than African Americans/Blacks (68%) and Hispanics (66%) to say they always or usually answered the phone while driving.

Figure 20
How Often Answer Wireless Phone While Driving, 2003



Qx: When you get a call on the phone while you are driving, how often do you answer the call? Would you say you always, usually, seldom, or never answer a call while driving?

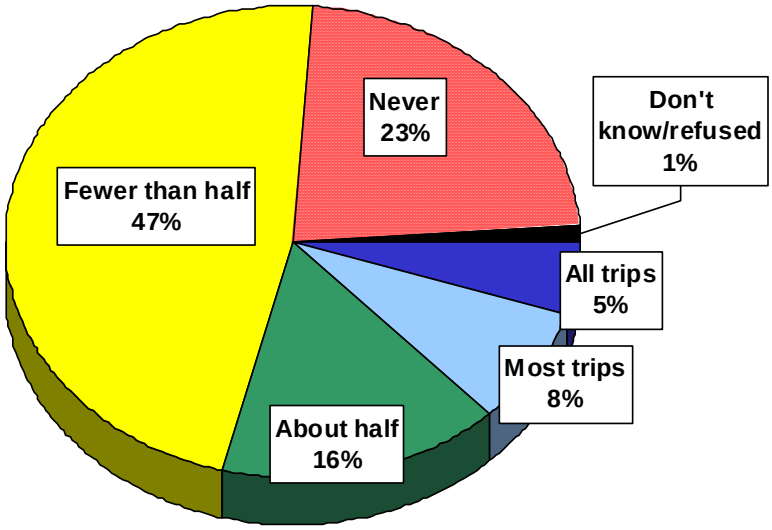
Base: Keep the phone turned on to receive calls.

Unweighted *N=3,430*

**The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.*

Although most drivers said they had a wireless phone turned on when they drive, and most of those said they would answer the phone while driving, relatively few reported talking on the phone during most trips. Only 13% of drivers who usually carried a wireless phone said they talk on the phone while driving during most or all trips. Another 16% said they do so on about half their trips.

Figure 21
How Often Talk On Phone While Driving, 2003



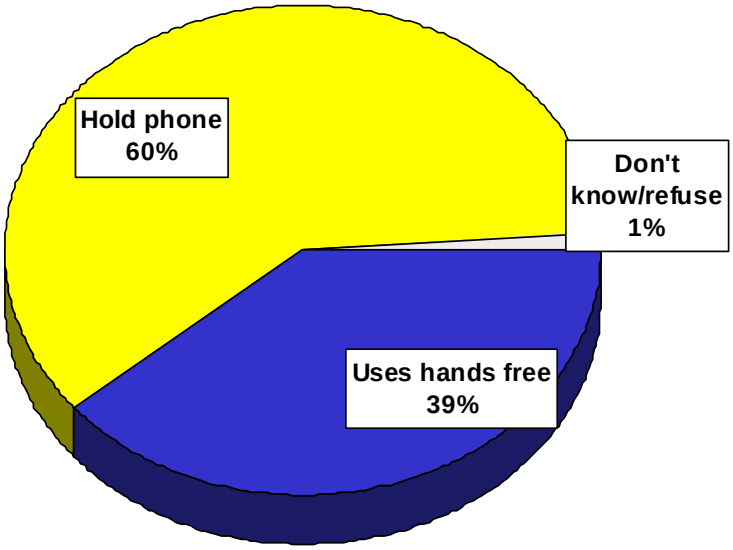
Qx: How often do you talk on the phone while you are driving? Would you say you talk on the phone while driving during…?

Base: Usually have a wireless phone in vehicle.

Unweighted *N=3,846*

Drivers who said they at least on occasion talked on the phone while driving were asked if they tend to hold the phone with their hand when they use it, or if they tend to use the phone hands free. Three-fifths (60%) said they tend to hold the phone with their hand. Thirty-nine percent tend to use the phone hands free.

Figure 22
Usually Holds Phone With Hand Or Usually Uses Phone Hands Free, 2003



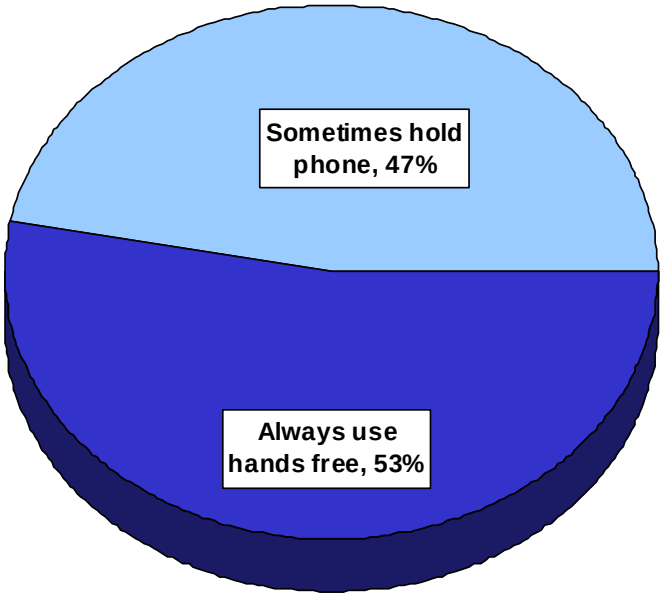
Qx: When you are talking on the phone while driving, do you tend to hold the phone with your hand or do you tend to use the phone hands free?

Base: At least on occasion talks on phone while driving.

Unweighted *N=3,036*

Almost half (47%) of drivers who tended to use the phone hands free also sometimes held it by hand when driving and talking on the phone.

Figure 23
How Often Use Wireless Phone Hands Free While Driving, 2003



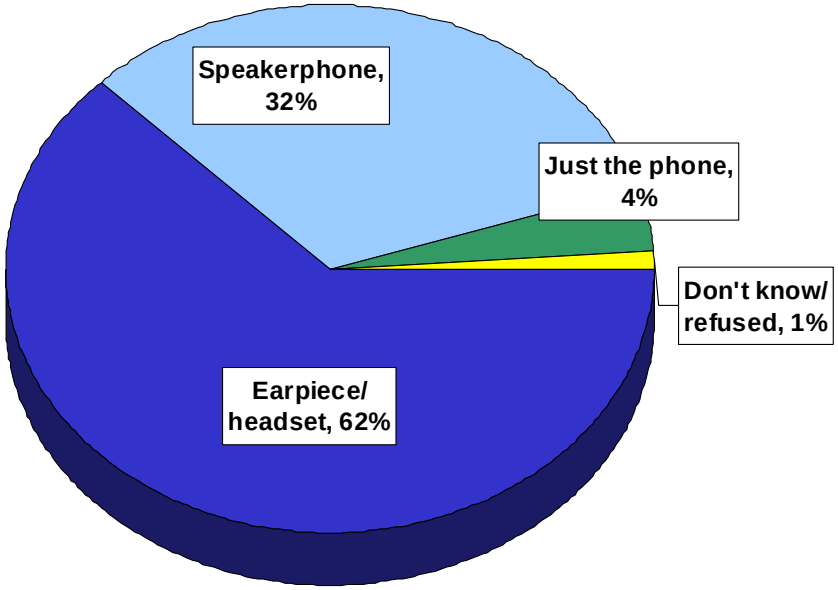
Qx: Do you always use the phone hands free when you are talking on the phone while driving, or do you sometimes hold the phone by hand when driving and talking on the phone?

Base: Tend to use the phone hands free when talking while driving.

Unweighted *N=1,236*

Drivers were about twice as likely to use earpieces or headsets as use speakerphones during hands free operation of phones while driving.

Figure 24
Device Usually Used To Talk Hands Free While Driving, 2003



Qx: When you are talking on the phone while driving, do you usually use an earpiece or headset to talk, do you usually use a speakerphone to talk, or do you usually use something else to talk?

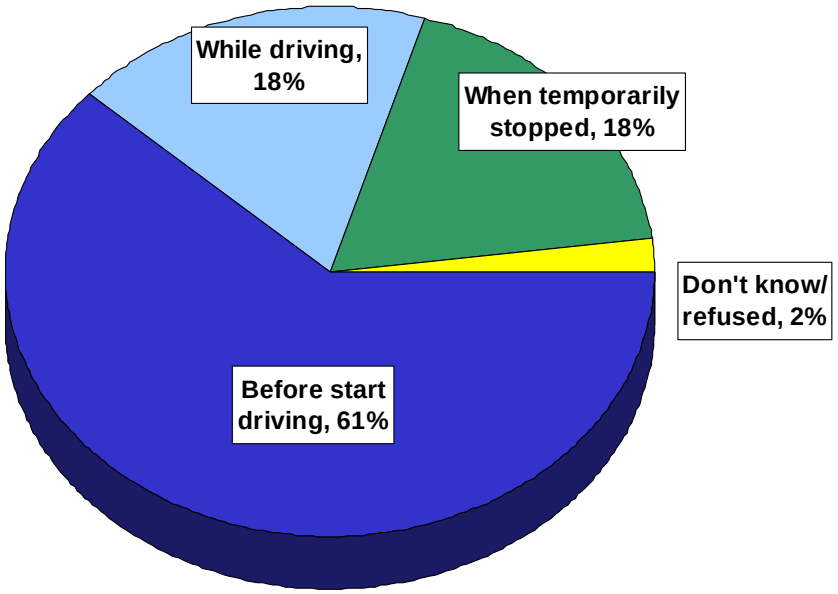
Base: Tend to use the phone hands free when talking while driving.

Unweighted *N=1,236*

**The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.*

The majority of drivers put their phone earpiece or headset on before they began driving (61%). About one-fifth (18%) said they put the earpiece or headset on while driving and the same percentage (18%) said they put it on while temporarily stopped.

Figure 25
When Is Earpiece/Headset Usually Put On, 2003



Qx: When do you usually put the (earpiece/headset) on? Do you usually put the (earpiece/headset) on before you start driving, do you put it on while you are driving, or do you usually put it on while temporarily stopped?

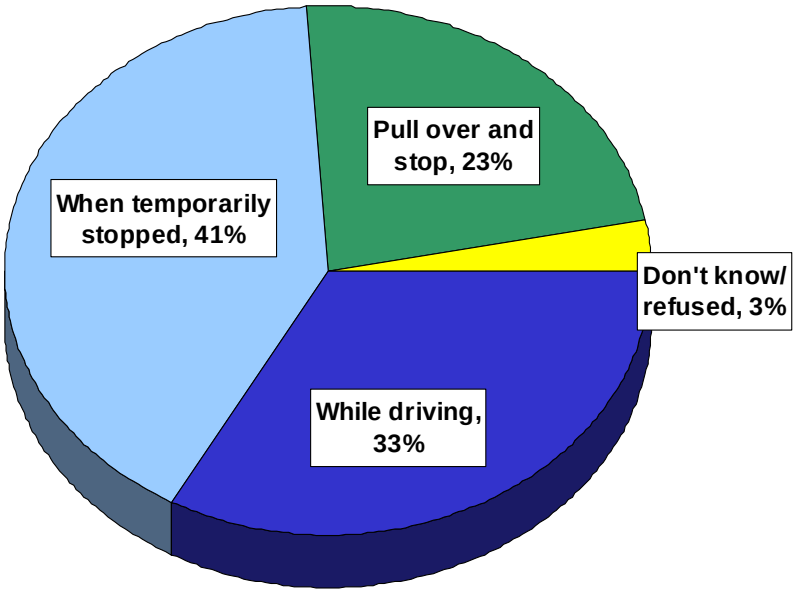
Base: Usually use an earpiece or headset when talking while driving.

Unweighted *N=799*

**The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.*

When making calls, one-third (33%) said they tended to dial the phone while driving and 41% said they tended to dial during a temporary stop. Fewer drivers (23%) said they tended to pull over and stop before dialing the phone.

Figure 26
When Is Phone Dialed While Driving, 2003



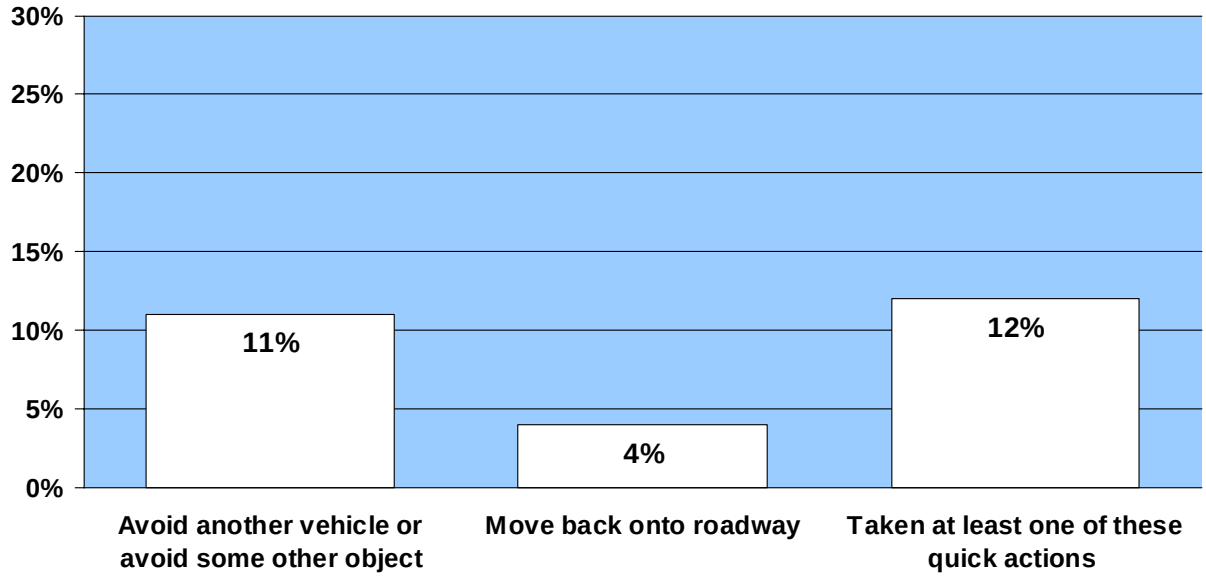
Qx: When you are driving and want to dial the phone, do you tend to dial the phone while you are driving, do you tend to dial the phone while you are temporarily stopped, or do you tend to pull over and stop the motor vehicle before dialing?

Base: At least on occasion talks on the phone while driving.

Unweighted *N= 3,036*

Drivers who said they usually have a wireless phone in the vehicle with them were asked if they had ever had to take quick action in a driving situation while talking on the phone in the past 12 months. About one-in-ten (11%) said they had to take quick action to avoid another vehicle or some other object in the past 12 months. Four percent had to take quick action to move back onto the roadway in the past 12 months. Twelve percent of drivers had to take at least one of these quick actions in a driving situation while talking on the phone in the past 12 months.

Figure 27
Ever Had To Take Quick Action When On Phone While Driving, 2003



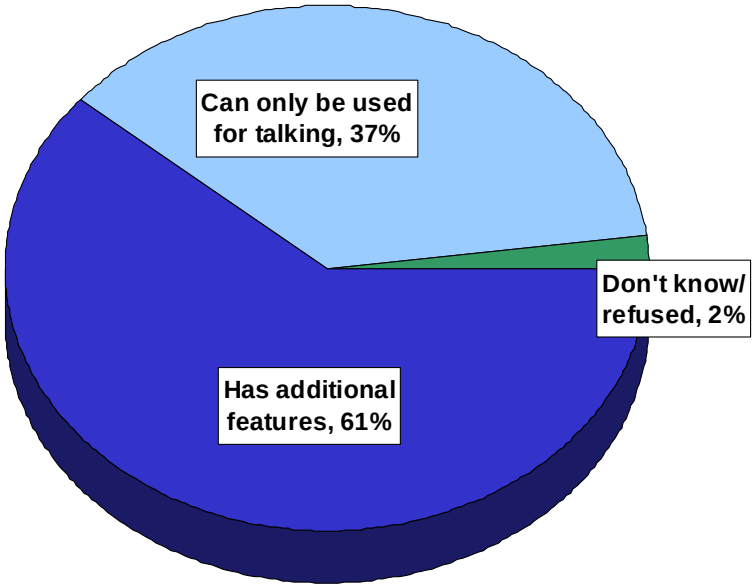
Qx: In the past 12 months, were there any times where you were talking on the phone while driving and suddenly had to take quick action to…?

Base: Usually have a wireless phone in vehicle.

Unweighted *N=3,846*

Drivers were asked if the phone they usually carried when they drove had additional features besides those that allowed people to talk to others. Most had phones with added features (61%). Only 37% had a phone with no added features.

Figure 28
Phone Used While Driving Has Added Features, 2003



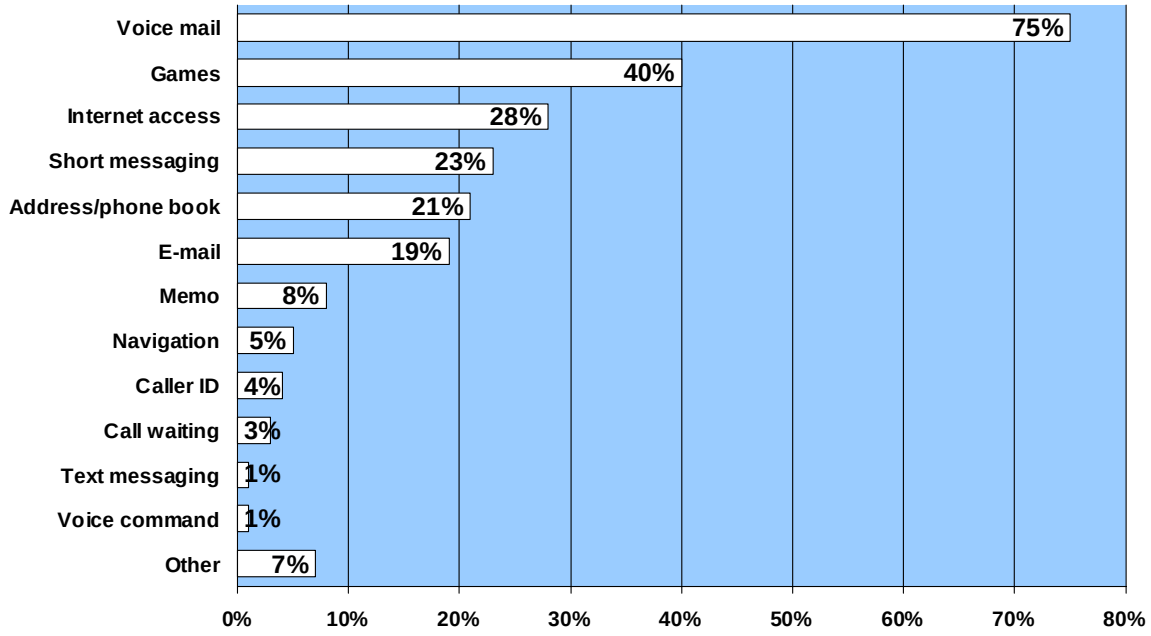
Qx: Besides allowing people to talk to someone else, many phones now have additional features such as voice mail, Internet access, e-mail, address books, games, short messaging, or navigation assistance. Does the phone you usually carry when you drive have any features like these, or can it only be used for talking to others?

Base: Usually have a wireless phone in the vehicle when driving.

Unweighted *N=3,846*

Drivers with phones with extra features mentioned voice mail (75%), games (40%), Internet access (28%), short messaging (23%), address books (21%), and e-mail (19%).

Figure 29
Features Of Phone, 2003



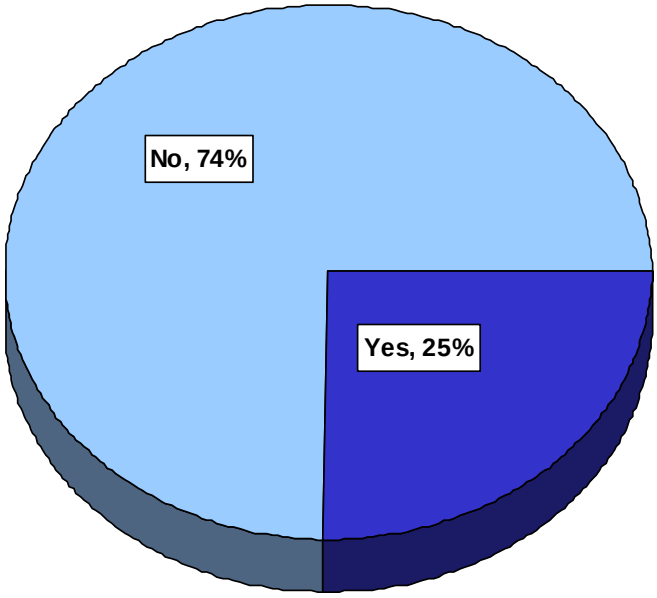
Qx: What are the features that the phone has?

Base: Phone has additional features.

Unweighted *N=2,433*

About a quarter of drivers who had phones with extra features said they had used one or more of those features while driving (25%). About three-fourths said they had never used the extra features while driving (74%). Fewer than one-half of one percent were unsure or refused to answer.

Figure 30
Use Features Of Phone While Driving, 2003



Qx: Do you ever use (that feature/any of those features) while you are driving?

Base: Phone has additional features.

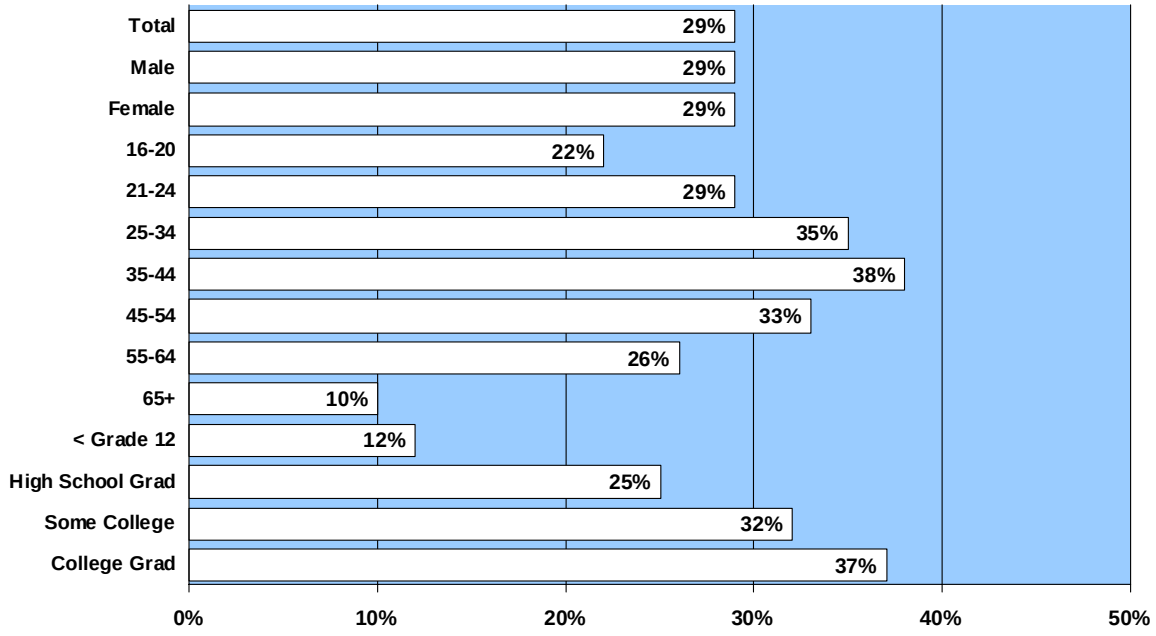
Unweighted *N=2,433*

**The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.*

All drivers were asked if they had ever used a wireless phone to report an emergency while they were driving or riding in a motor vehicle. About three-in-ten (29%) answered "Yes." The percentage did not differ between males and females. However, there were differences by age, with the youngest and oldest drivers being least likely to have ever used a wireless phone to report an emergency while riding in a motor vehicle.

Drivers with more years of formal education were both more likely to carry a wireless phone with them while driving (see page 23), and more likely to have called in an emergency from a motor vehicle. Twelve percent of those who had not graduated high school had used a wireless phone to report a road emergency. This increased to 25% and 32% for those who graduated high school or had some college experience, respectively, and to 37% for those who had graduated from college.

Figure 31
Used A Car/Cellular Phone To Report An Emergency By Gender, Age And Education, 2003



Qx: Have you ever used a car phone or cellular phone or other type of wireless phone to report an emergency while you were driving or riding in a motor vehicle?

Base: Drivers.

Unweighted *N=5,509*

Those individuals who had used their phones to call in an emergency were asked the specific nature of the call. The majority (59%) made a call to report a vehicle crash. The next most common emergencies reported were DWI or suspected drunk driving (9%) and disabled vehicles (9%). Other emergency situations reported by wireless phone were mentioned by 7% or less.

Table 5
Kind Of Emergency Reported, 2003

Qx: What kind of emergency did you call about?

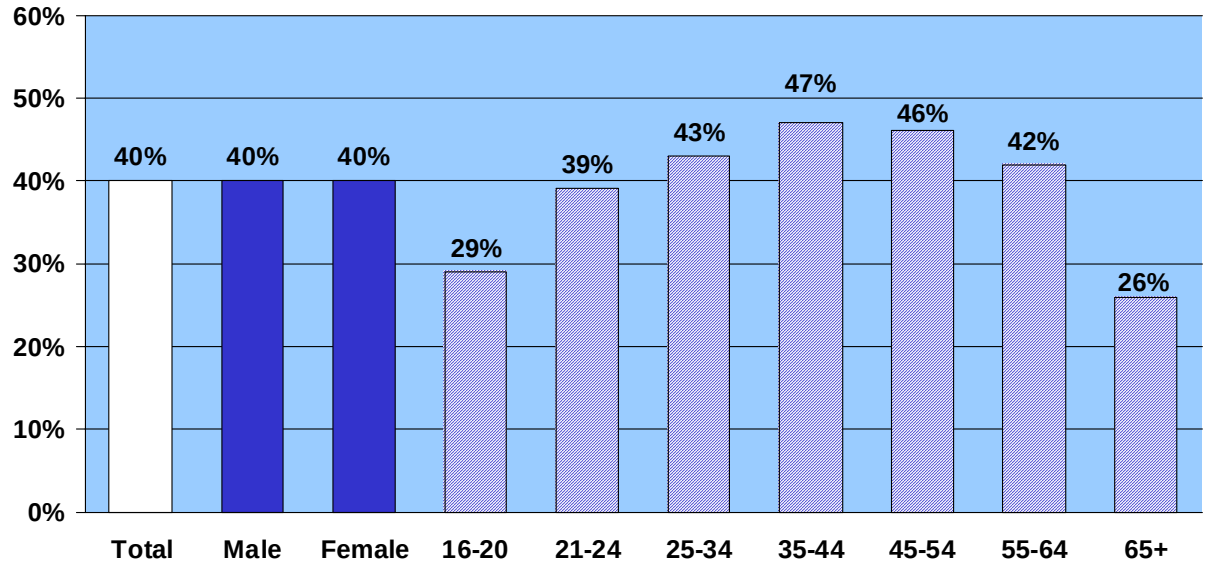
Base: Drivers who used a wireless phone in motor vehicle to report an emergency.

Unweighted N	*1,691*
Car or automobile accident	59%
Disabled or stalled car or automobile	9%
DWI or suspected drunk driver	9%
Out of control, weaving vehicle	7%
Criminal behavior	5%
Fire (unsp.)	4%
Car or automobile fire	3%
Animal on roadway	2%
Debris on roadway	2%
Person laying in the street	1%
Person became ill or sick	1%
Hit and run	1%
Flat tire	1%
Person walking on highway	1%
Other	2%
Don't know	2%

KNOWLEDGE OF INITIALS "EMS"

Two-fifths of the population age 16 and older (40%) knew that the initials "EMS" stand for "emergency medical services/systems". The percentage did not differ between males and females, but there was a curvilinear relationship to age.

Figure 32
Know What The Initials "EMS" Stand For
By Gender And Age, 2003



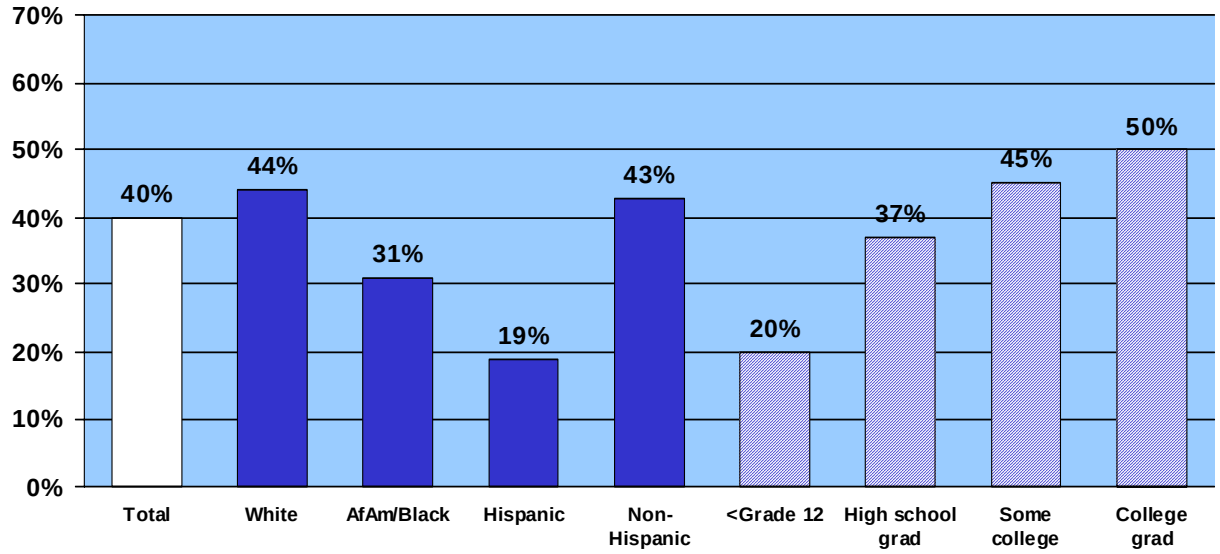
Qx: Can you tell me what the initials "EMS" stand for?

Base: Total population 16 and over.

Unweighted *N=6,197*

White respondents (44%) were more likely than African American/Black respondents (31%) to answer that EMS stood for emergency medical services, as were non-Hispanic respondents (43%) compared to Hispanic respondents (19%). Recognition increased with increases in formal educational level.

Figure 33
Know What The Initials "EMS" Stand For By Race/Ethnicity And Education, 2003



Qx: Can you tell me what the initials "EMS" stand for?

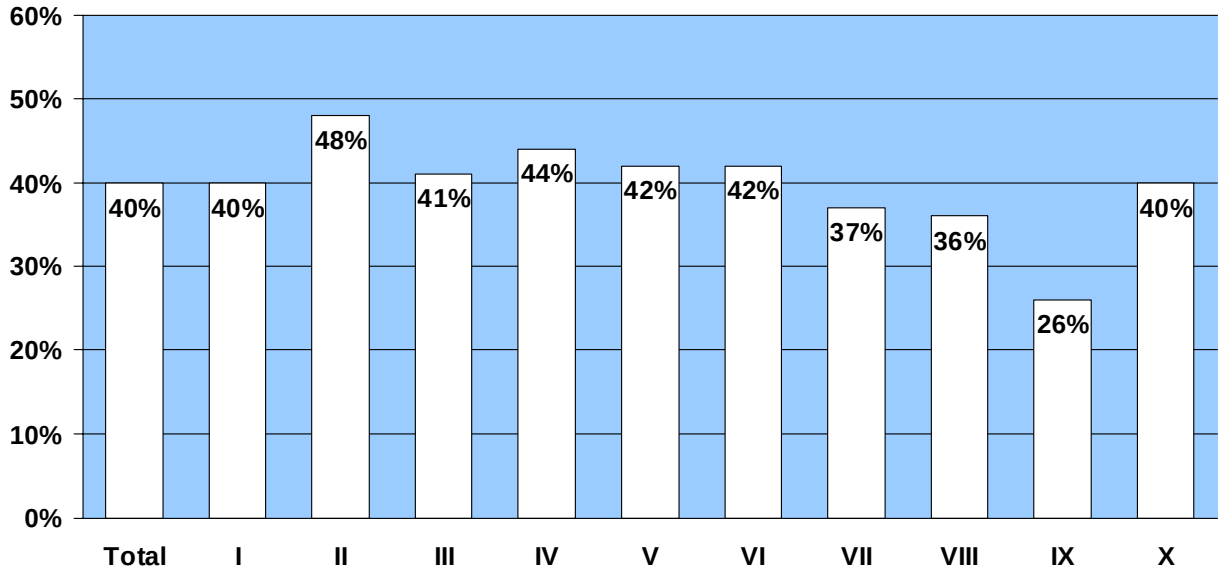
Base: Total population 16 and over.

Unweighted *N=6,197*

**AfAm is an abbreviation for African American.*

One of the more interesting findings concerning public knowledge of the initials "EMS" comes from an analysis by NHTSA region[9]. NHTSA segments the States into ten regions for purposes of programmatic outreach (see list of regions below). The data showed lesser recognition in western regions of the country that "EMS" stands for emergency medical services, particularly in Region IX (26%). Recognition was highest in Region II (48%).

Figure 34
Know What The Initials "EMS" Stand For
By NHTSA Region, 2003



Qx: Can you tell me what the initials "EMS" stand for?

Base: Total population 16 and over.

Unweighted *N=6,197*

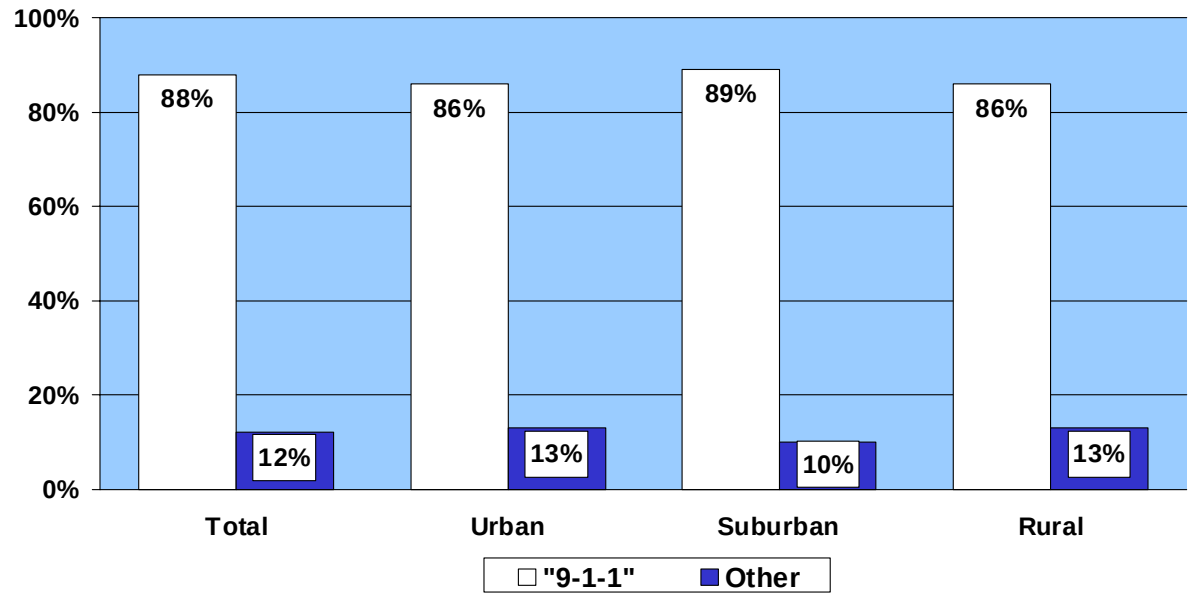
[9] **National Highway Traffic Safety Administration Regions**

I	New England Region	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
II	Eastern Region	New York, New Jersey
III	Mid Atlantic Region	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
IV	Southeast Region	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
V	Great Lakes Region	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
VI	South Central Region	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
VII	Central Region	Iowa, Kansas, Missouri, Nebraska
VIII	Rocky Mountain Region	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
IX	Western Region	Arizona, California, Hawaii, Nevada
X	Northwest Region	Alaska, Idaho, Oregon, Washington

TELEPHONING FOR HELP IN A MEDICAL EMERGENCY

The survey asked respondents whom they would call first in the event of a medical emergency. About nine-in-ten (88%) specifically said they would call “9-1-1”. Other responses included emergency medical services (4%), police (3%), ambulance service (1%), fire department (1%), and spouse or relative (1%).

Figure 35
First Call In A Medical Emergency By Community Type, 2003



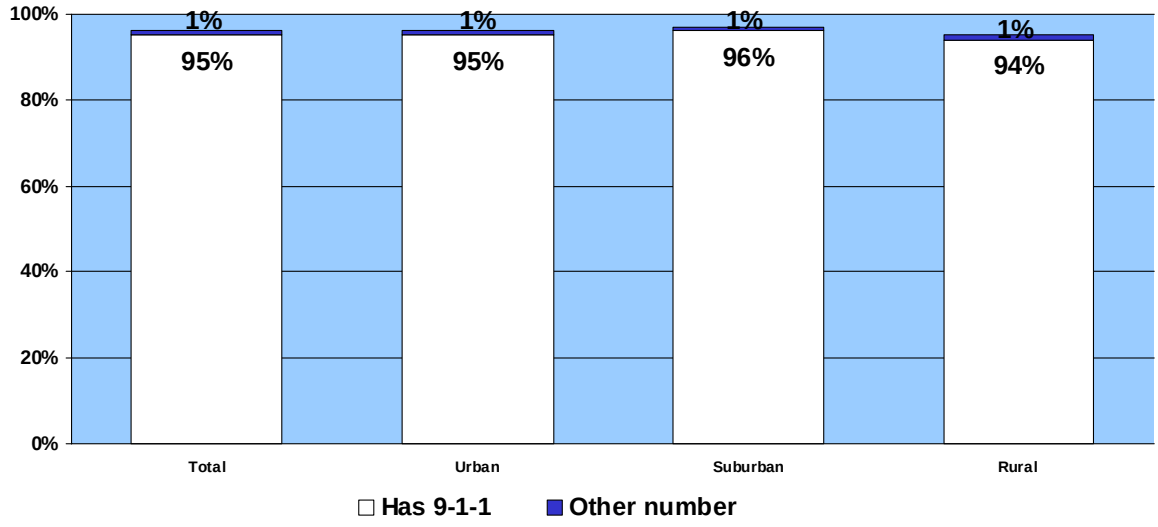
Qx: If someone was experiencing a medical emergency and you needed to get help for that person, who would you call first?

Base: Total population age 16 and over.

Unweighted *N=6,197*

Respondents who did not say they would call “9-1-1” were asked if there was a specific number to call for medical emergencies in their community, and, if so, what was the number? An additional 7% of the total population acknowledged having “9-1-1”, while 1% gave some other number. Combined with the 88% who said they would call “9-1-1” first, this meant that 95% of the public reported having “9-1-1”. The percentage ranged from 94% in rural areas to 96% in suburban areas. Including all emergency numbers, 96% of the public reported having a specific telephone number to call for medical emergencies.

Figure 36
Has 9-1-1 Or Special Emergency Number By Community Type, 2003



Qx: If someone was experiencing a medical emergency and you needed to get help for that person, who would you call first?

Qx: Is there a particular telephone number to call for medical emergencies in your community?

Qx: What is that telephone number?

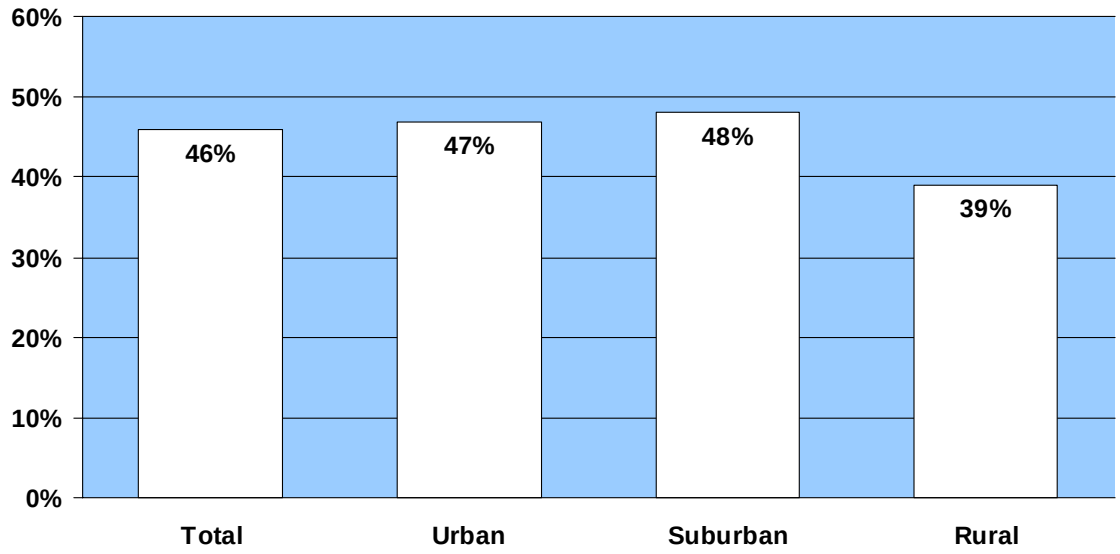
Base: Total population age 16 and over.

Unweighted *N=6,197*

Nearly half of persons age 16 or older (46%) have called “9-1-1” or some other emergency number for help at some time in the past. Unlike the earlier findings on reporting emergencies using car phones (see page 36), the percentage who had ever called an emergency number was higher for females (51%) than for males (40%).

Almost half of residents of urban (47%) and suburban (48%) communities had called an emergency number for help. Proportionally fewer residents in rural communities (39%) had called an emergency number for help.

Figure 37
Ever Called Emergency Phone Number By Community Type, 2003



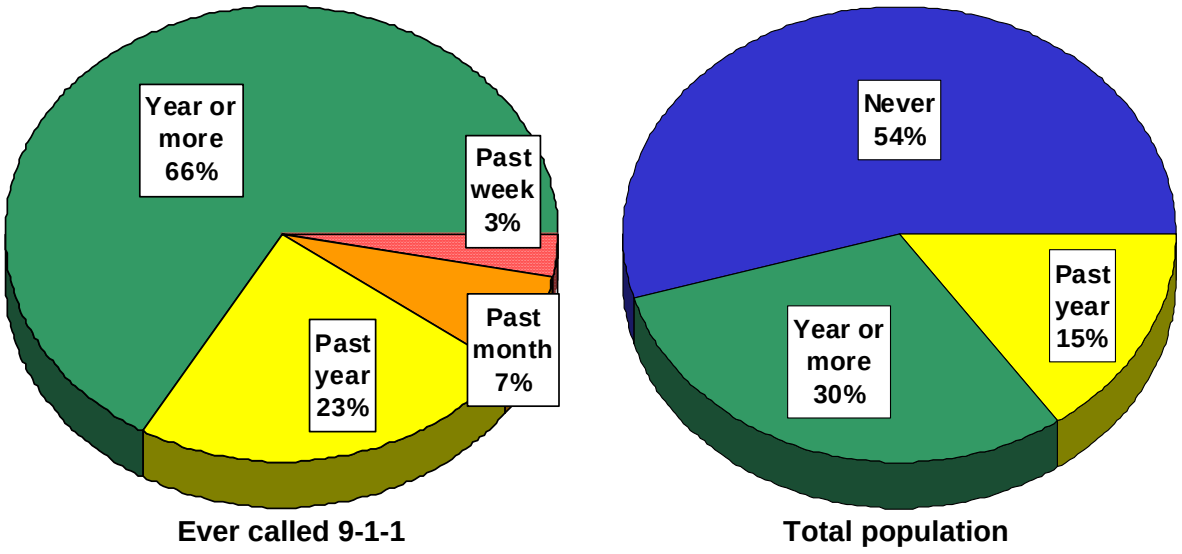
Qx: Have you personally ever called 9-1-1 or another emergency number for help?

Base: Total population age 16 and over.

Unweighted *N=6,197*

Those individuals who had ever called “9-1-1" or another emergency response number were asked how long ago the most recent call occurred. About one-in-three (34%)[10] had called within the last year. This includes calls that took place in the last week (3%), the past month (7%), or within the last year (23%)[11]. About two-in-three (66%) last called more than one year ago. Overall, 15% of the total population age 16 and older made an emergency call in the past year (past week, month or year).

Figure 38
How Long Ago Most Recent Emergency Call Took Place, 2003



Qx: How long ago did that occur (the last time)?

Base: Have ever called 9-1-1 or other emergency number, and total population.

Unweighted $N_{(Ever\ called)}$=2,856; $N_{(Total\ population)}$=6,197

**The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.*

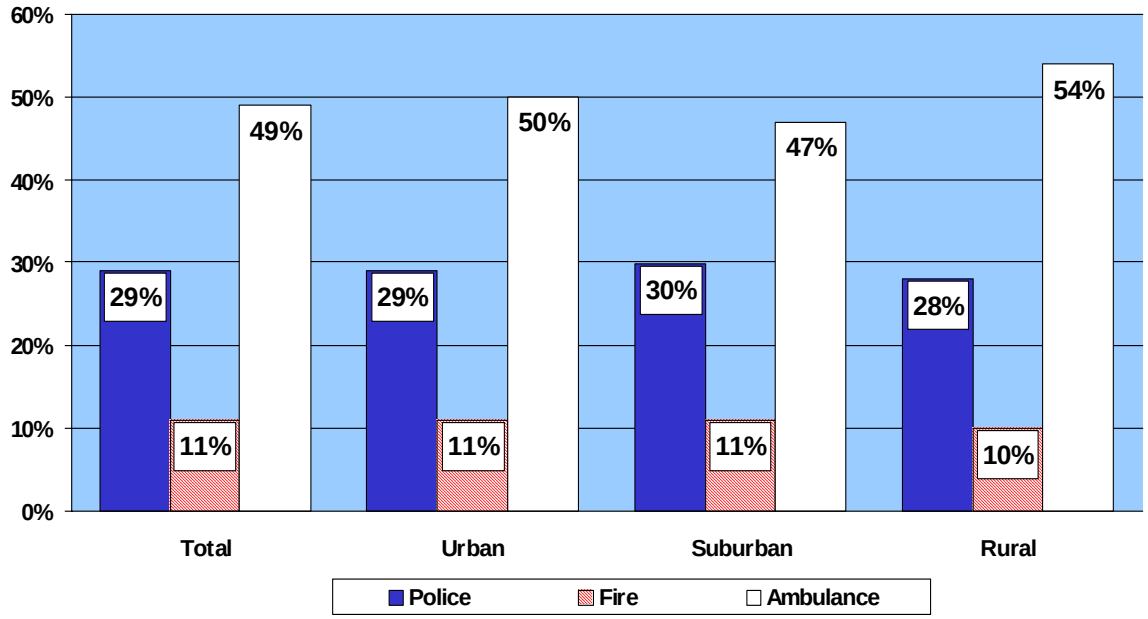
[10] The number does not equal the sum of the components in the Figure due to rounding.

[11] “Past Month” means within the past month but not within the past week, and “Past Year” means within the past year but not within the past month.

Those who made emergency calls were also asked whom they called on the most recent occasion. About half (49%) had called for an ambulance. Nearly three-in-ten (29%) called for the police and one-in-ten (11%) called for the fire department.

The percentage of persons who had called for the fire department or for the police was similar across community types. The percentage that had called for an ambulance was somewhat higher in rural areas.

Figure 39
Emergency Service Called By Community Type, 2003



Qx: Did you call for police, fire, an ambulance or something else?

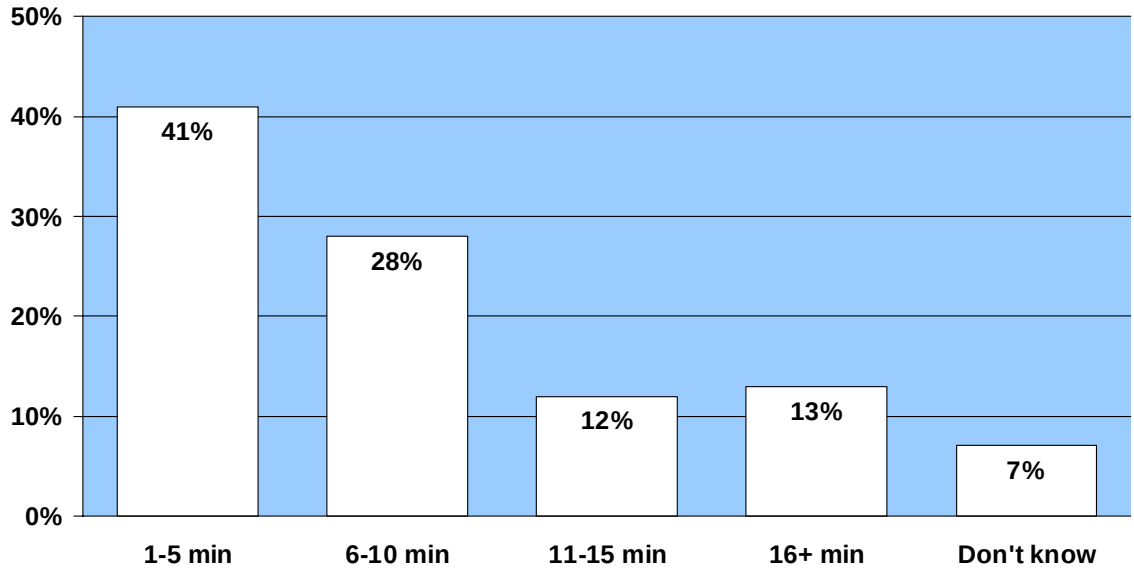
Base: Have called 9-1-1 or other emergency number.

Unweighted *N=2,856*

EXPECTATIONS FOR EMERGENCY RESPONSE

When asked their expectations regarding ambulance response time, people generally thought it would take only a few minutes for an ambulance to arrive. About two-in-five (41%) said they expected an ambulance to arrive within five minutes of being called, About two-in-three (68%)[12] expected an ambulance to arrive within 10 minutes, and four-in-five (80%) expected it to arrive within 15 minutes.

Figure 40
Expected Time For Ambulance To Arrive, 2003



Qx: If there was a medical emergency in your neighborhood and you called an ambulance, how long do you think it would take for the ambulance to arrive?

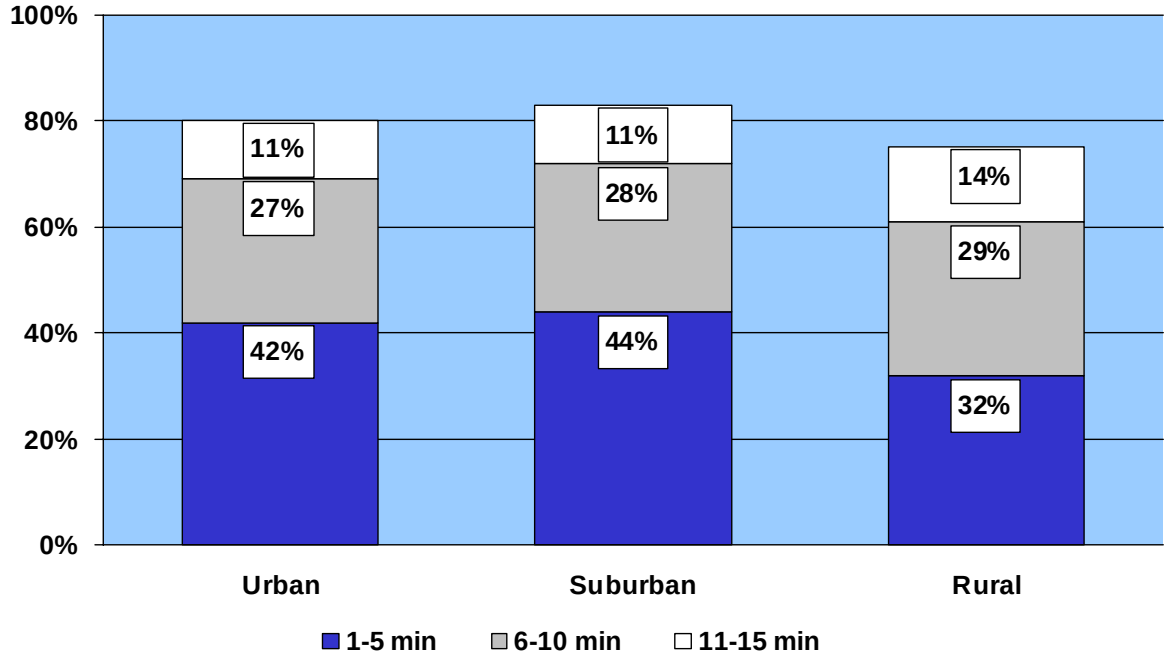
Base: Total population 16 and over.

Unweighted *N=6,197*

[12] The number does not equal the sum of the components in the Figure due to rounding.

Expectations varied by community type. More than two-in-five suburban residents (44%) expected the ambulance to arrive within 5 minutes of being called and 72% expected it to arrive within 10 minutes. People who lived in urban areas had only slightly lower expectations for a five minute arrival (42%) or for a 10 minute arrival (69%). Rural residents had the lowest expectations with 32% expecting a five minute arrival, 61% expecting a 10 minute arrival.

Figure 41
Expected Time For Ambulance To Arrive By Community Type, 2003



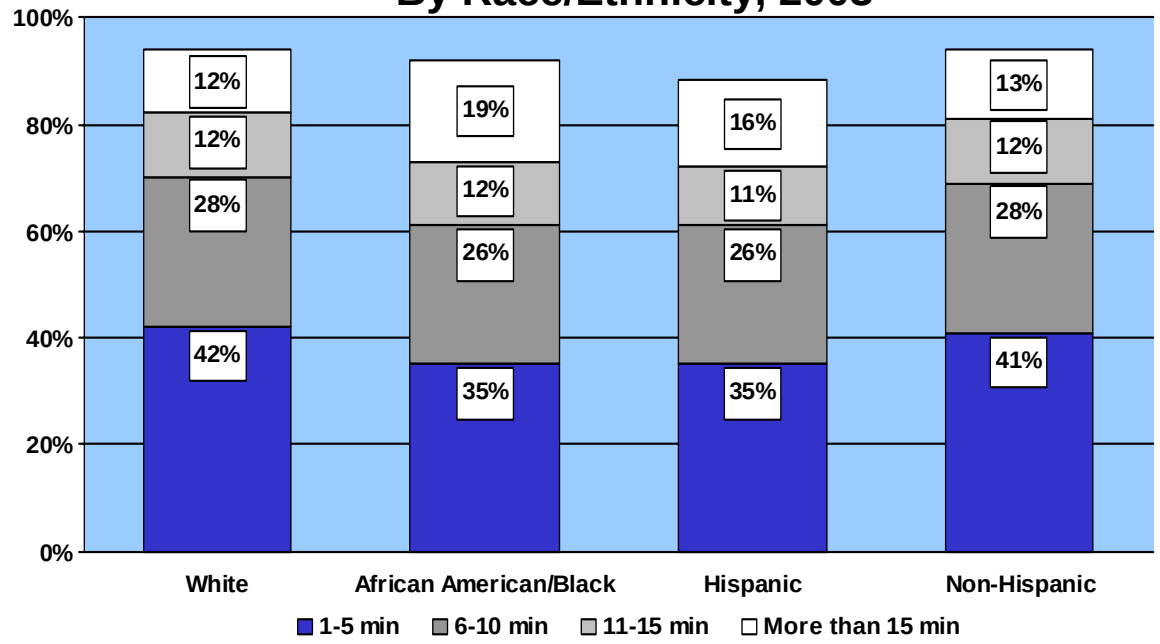
Qx: If there was a medical emergency in your neighborhood and you called an ambulance, how long do you think it would take for the ambulance to arrive?

Base: Total population 16 and over.

Unweighted *N=6,197*

Expectations about ambulance response time also varied considerably by race and ethnicity. More than two in five Whites (42%) expected the ambulance to arrive within five minutes of being called and 70% expected it to arrive within 10 minutes. African Americans/Blacks had the lowest expectations, with only 35% expecting arrival within five minutes and 62%[13] within 10 minutes. About one-third of Hispanics (35%) expected the ambulance to arrive within five minutes and three-fifths (61%) expected it to arrive within 10 minutes. Hispanics (16%) and African Americans/Blacks (19%) were more likely than non-Hispanics (13%) and Whites (12%) to expect arrival to take more than 15 minutes.

Figure 42
Expected Time For Ambulance To Arrive By Race/Ethnicity, 2003



Qx: If there was a medical emergency in your neighborhood and you called an ambulance, how long do you think it would take for the ambulance to arrive?

Base: Total population 16 and over.

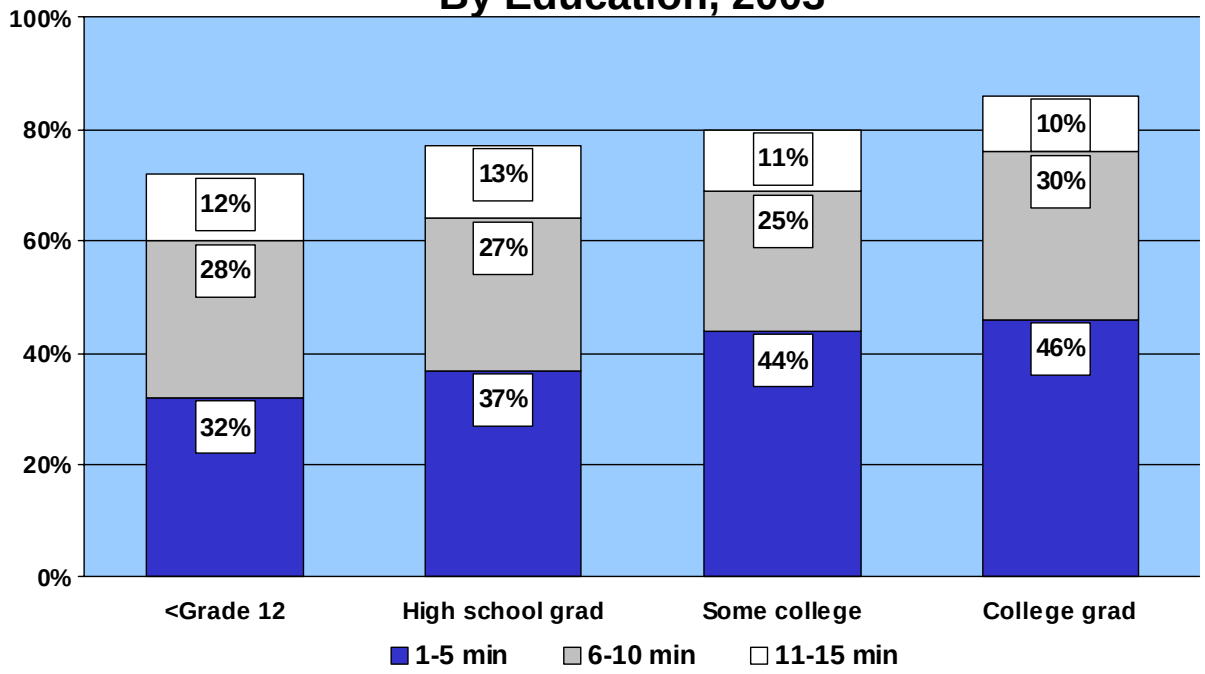
Unweighted *N=6,197*

**The sum of the percentages in each bar does not equal 100% because those who responded "Not sure" or "Refused" are not shown.*

[13] The number does not equal the sum of the components in the Figure due to rounding.

Expectations about ambulance response time tended to increase with education. Those who had not graduated high school had the lowest expectations of an ambulance to arrive within five minutes (32%). The percentage then increased to 37% of high school graduates, 44% of those with some college experience, and 46% of college graduates. The proportions expecting the ambulance to arrive within 10 minutes increased from 60% for those who had not completed high school, to 65%[14] for high school graduates, 70% for those with some college experience, and 76% for college graduates.

Figure 43
Expected Time For Ambulance To Arrive By Education, 2003



Qx: If there was a medical emergency in your neighborhood and you called an ambulance, how long do you think it would take for the ambulance to arrive?

Base: Total population 16 and over.

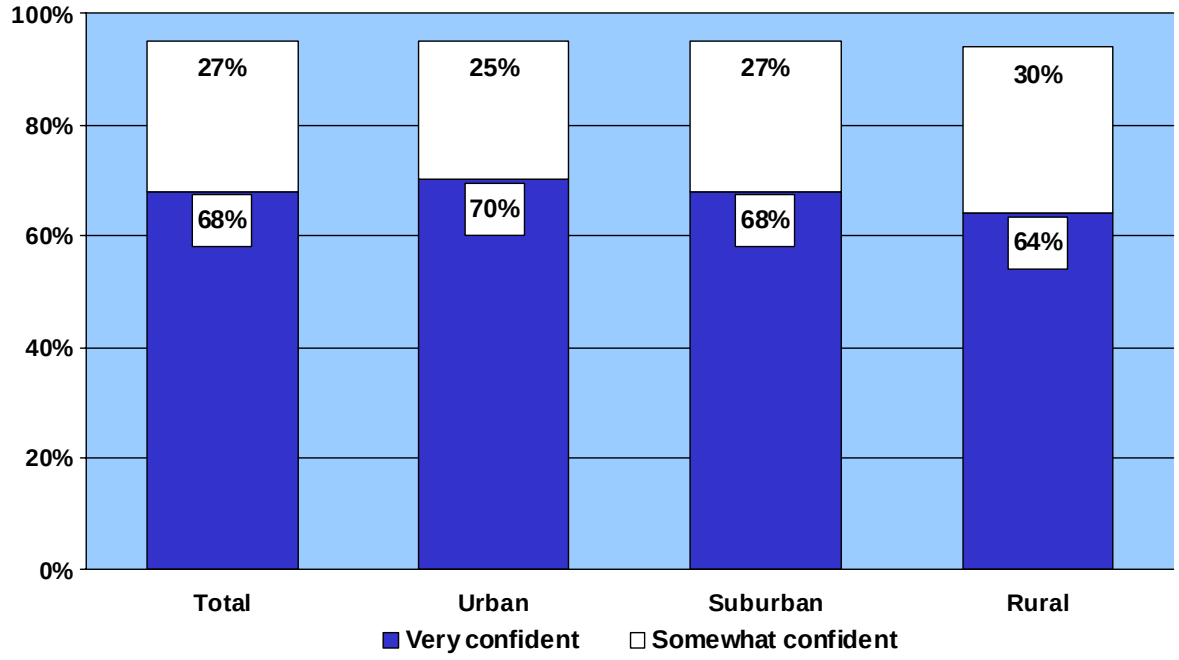
Unweighted *N=6,197*

[14] The number does not equal the sum of the components in the Figure due to rounding.

CONFIDENCE IN EMERGENCY WORKERS

About two-thirds of the driving age public (68%) was "very confident" that the ambulance or other emergency workers would know what to do and an additional 27% were "somewhat confident". Confidence in emergency workers was about the same in suburban (96%)[15], urban (95%) and rural communities (94%).

Figure 44
Confidence In Emergency Workers
By Community Type, 2003



Qx: Regardless of the type of medical emergency, how confident are you that the ambulance or other emergency workers would know what to do?

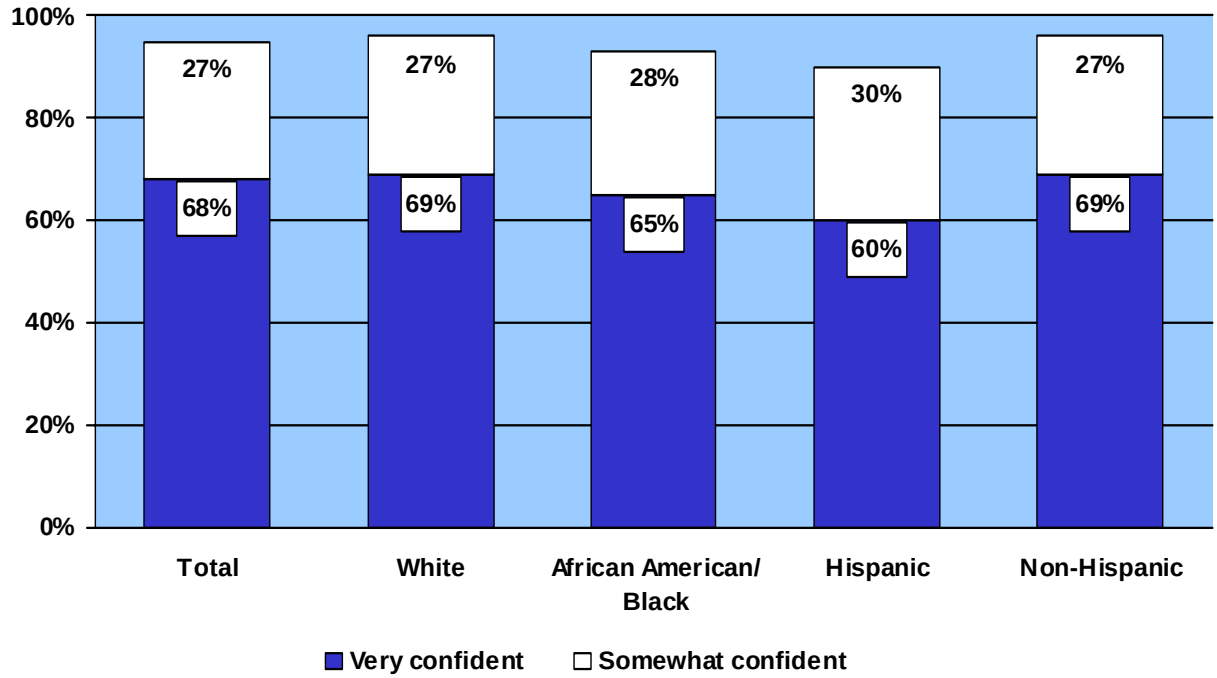
Base: Total population 16 and over.

Unweighted *N=6,197*

[15] The number does not equal the sum of the components in the Figure due to rounding.

Among the racial and ethnic groups analyzed in Figure 45, Hispanics showed the least confidence in the capabilities of emergency workers.

Figure 45
Confidence In Emergency Workers By Race/Ethnicity, 2003



Qx: Regardless of the type of medical emergency, how confident are you that the ambulance or other emergency workers would know what to do?

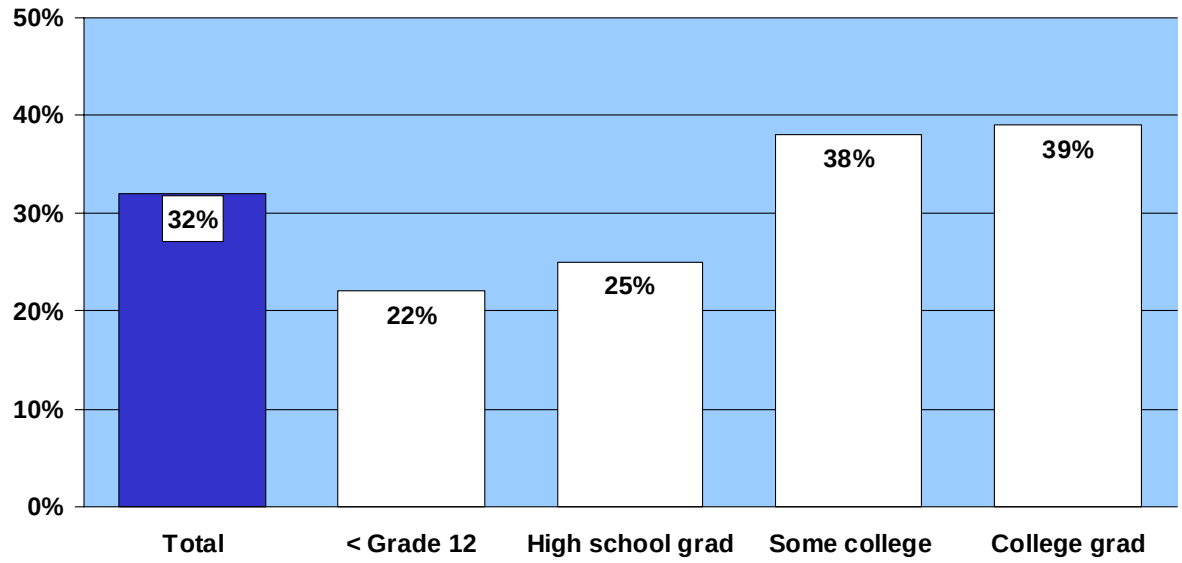
Base: Total population 16 and over.

Unweighted *N=6,197*

INTEREST IN TRAINING TO ASSIST CRASH VICTIMS

About one-in-three persons of driving age (32%) had taken some kind of an emergency or first aid course in the last five years. The proportion increased dramatically with education, those with college experience being more likely to have had training of this type than those who never attended college (39% vs. 24%).

Figure 46
First Aid Or Emergency Training In Past 5 Years
By Education, 2003



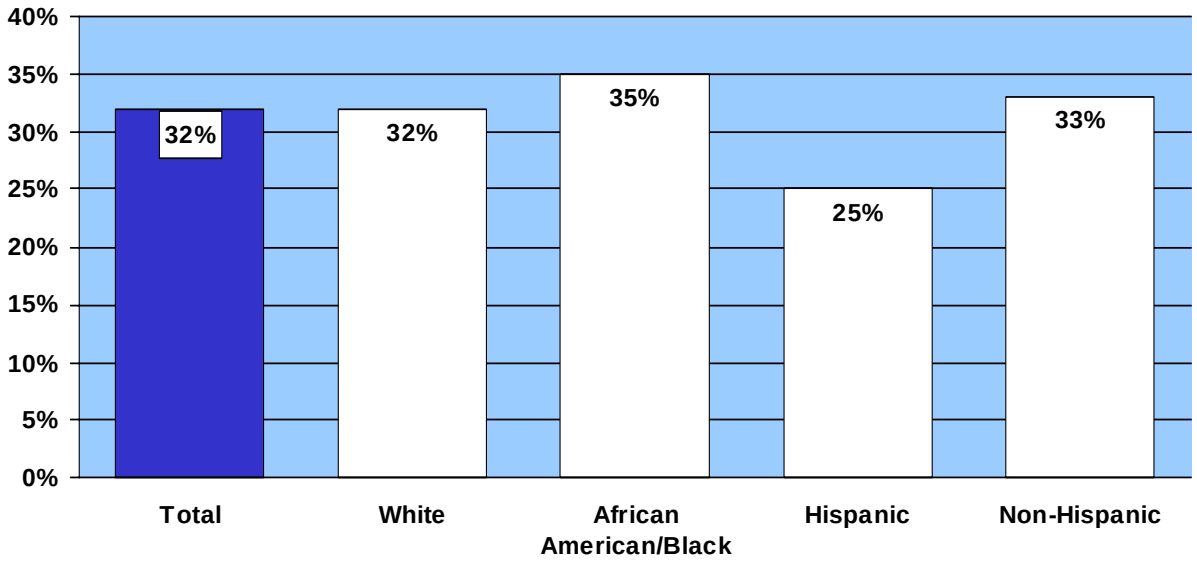
Qx: In the past 5 years, have you taken any kind of emergency or first aid training?

Base: Total population 16 and over.

Unweighted *N=6,197*

Almost one-in-three Whites (32%) had taken an emergency or first aid course in the last five years. The proportion was slightly higher for African Americans/Blacks where more than one-third had taken a course of this type (35%). However, the proportion of Hispanics (25%) that had taken some sort of emergency care course in the last five years was noticeably lower compared to non-Hispanics (33%).

Figure 47
First Aid Or Emergency Training In Past 5 Years By Race/Ethnicity, 2003



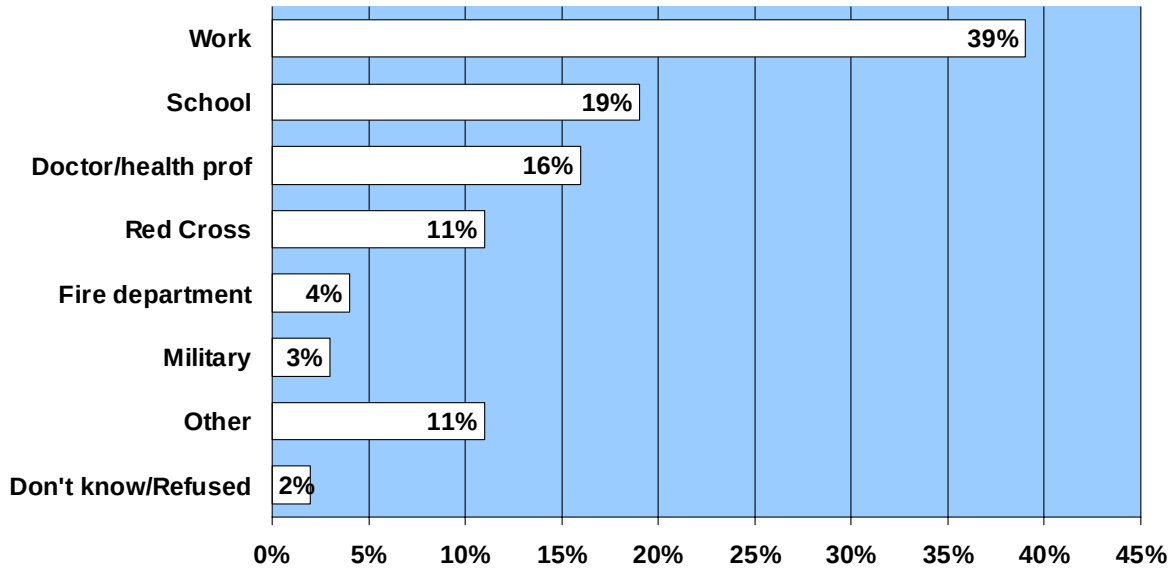
Qx: In the past 5 years, have you taken any kind of emergency or first aid training?

Base: Total population 16 and over.

Unweighted *N=6,197*

Those who had taken first aid or emergency training in the past five years were asked who provided the course. About two-fifths (39%) received training through work. About one-fifth (19%) received their training through school (for those under age 21 the proportion who received training through school was 60%). Sixteen percent were trained by a doctor or other health professional and 11% were trained by the Red Cross.

Figure 48
Who Provided Training*, 2003



Qx: Who provided the training?

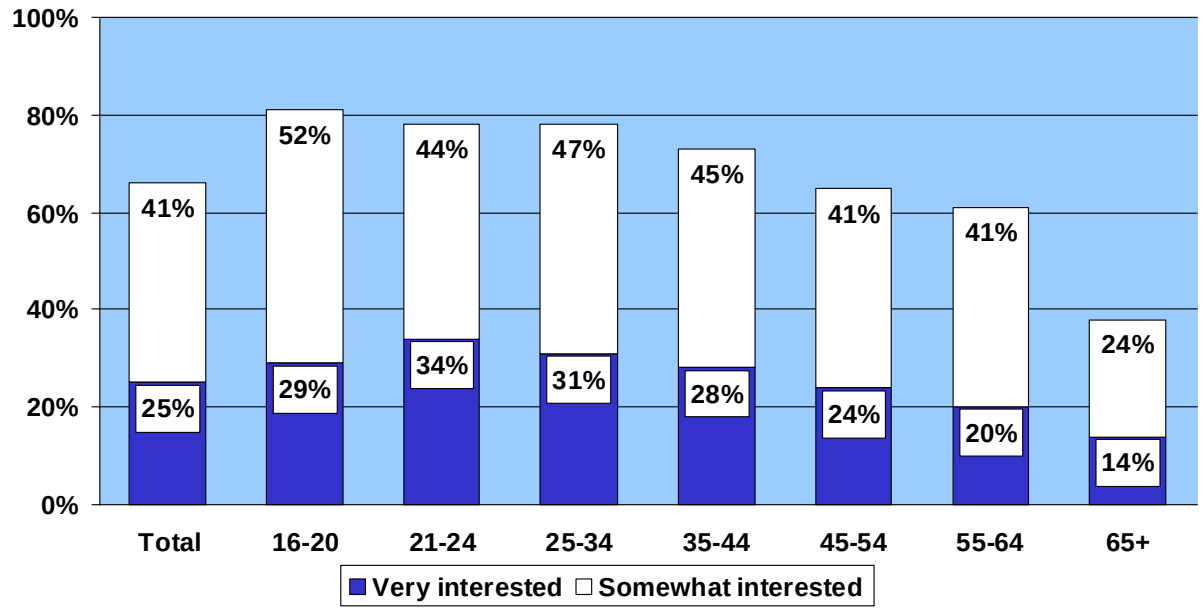
Base: Have taken first aid or emergency training in past 5 years. [Multiple responses were accepted.]

Unweighted *N=2,033*

** Total exceeds 100% since multiple responses were accepted.*

Respondents were asked how interested they would be in taking a course that would give them training to assist crash victims, assuming it was low cost and convenient. About two-thirds (66%) said they would be very interested (25%) or somewhat interested (41%) in this type of training. Interest in such a course was inversely related to age, that is, as people got older, interest declined. About four out of five in the 16 to 20 age group (81%), the 21 to 24 age group (79%)[16] and the 25 to 34 group (78%) said they would be interested. From this point interest declined to 74% in the 35 to 44 group, 65% in the 45 to 54 group, 65% in the 55 to 64 group, and finally to 38% for those over 65.

Figure 49
Interest In Training To Assist Crash Victims By Age, 2003



Qx: Assuming it was at low cost and in a convenient location, how interested would you be in taking training on how to assist injured persons in vehicle crashes?

Base: Total population 16 and over.

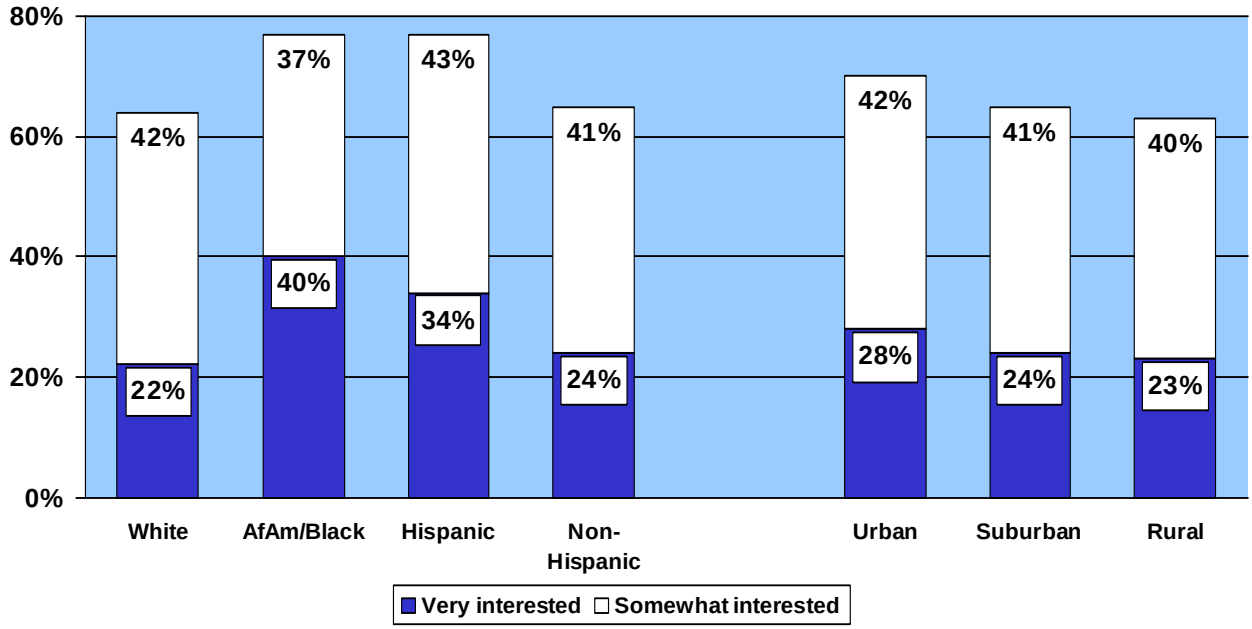
Unweighted *N=6,197*

[16] The number does not equal the sum of the components in the Figure due to rounding.

Only 64% of Whites and non-Hispanics were interested in training to assist crash victims compared to 77% of African Americans/Blacks and Hispanics.[17] It should be noted that this difference stemmed from high interest ("very interested") in such training. Two-in-five African Americans/Blacks (40%) and about one-third of Hispanics (34%) were very interested in such training, compared to about one-in-five Whites (22%).

Interest in training was highest in urban areas with seven-in-ten urban residents (70%) either very interested (28%) or somewhat interested (42%). Interest dropped to 65% among suburban residents and 63% for residents of rural communities.

Figure 50
Interest In Training To Assist Crash Victims By Race/Ethnicity And Community Type, 2003



Qx: Assuming it was at low cost and in a convenient location, how interested would you be in taking training on how to assist injured persons in vehicle crashes?

Base: Total population 16 and over.

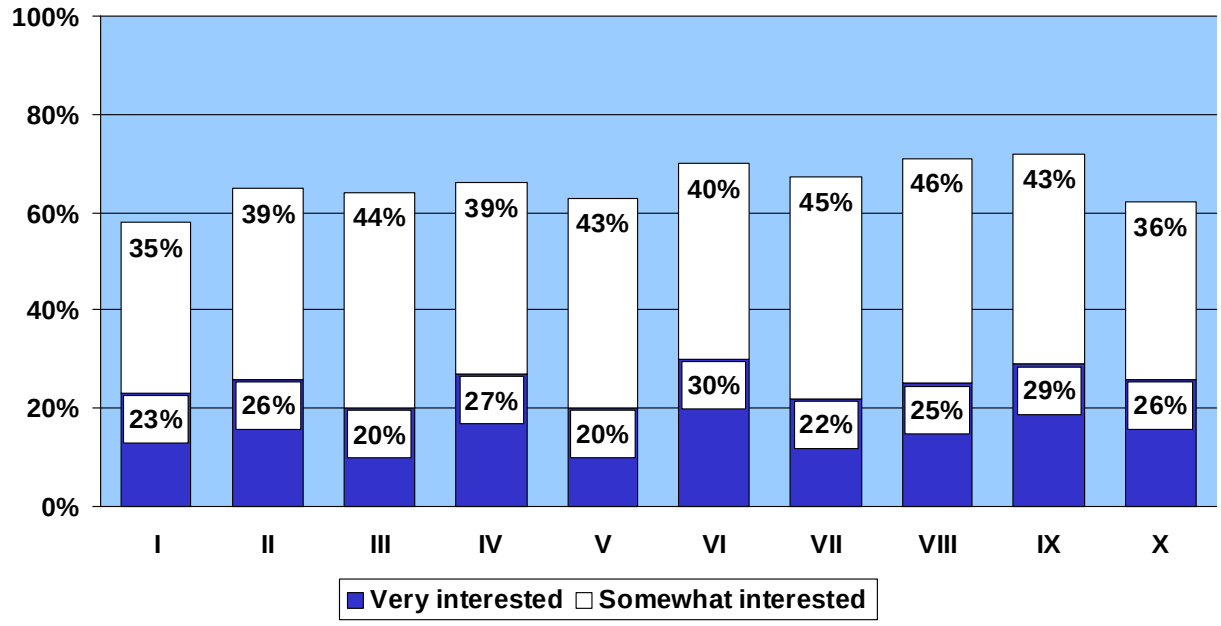
Unweighted *N=6,197*

**AfAm is an abbreviation for African American.*

[17] The number does not equal the sum of the components in the Figure due to rounding.

Interest in this type of training was highest in NHTSA Regions VI, VIII and IX where seven-in-ten (71%)[18] expressed interest. Interest was lowest in Region I (59%). In the remaining regions, interest was in the 63% to 66% range.[19]

Figure 51
Interest In Training To Assist Crash Victims By NHTSA Region, 2003



Qx: Assuming it was at low cost and in a convenient location, how interested would you be in taking training on how to assist injured persons in vehicle crashes?

Base: Total population 16 and over.

Unweighted *N=6,197*

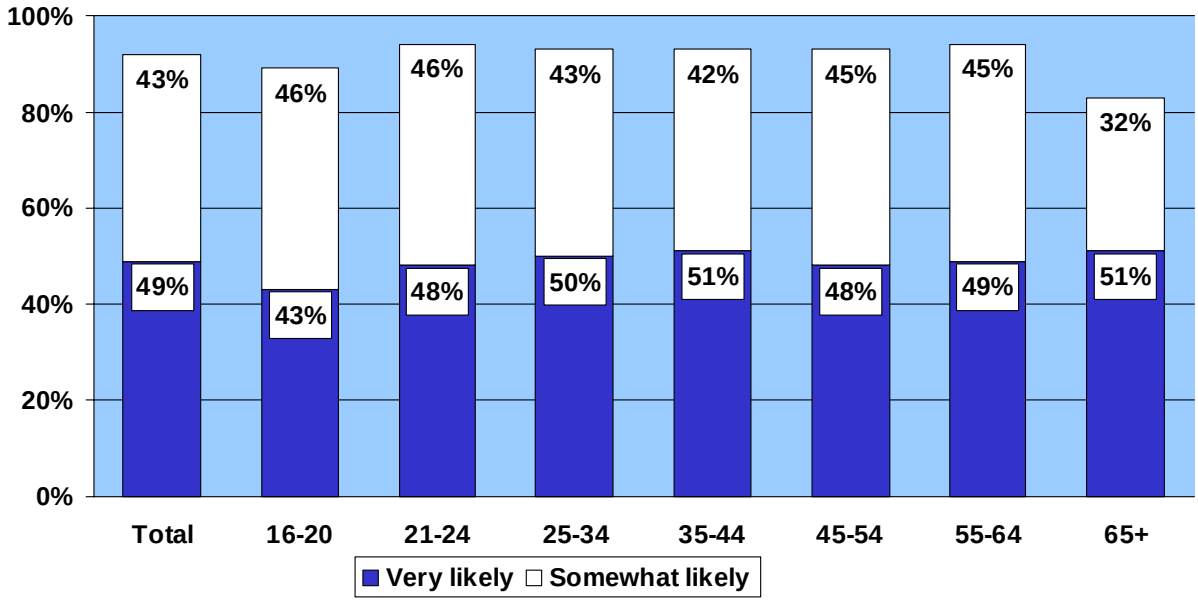
[18] The number does not equal the sum of the components in the Figure due to rounding.

[19] **National Highway Traffic Safety Administration Regions**

I	New England Region	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
II	Eastern Region	New York, New Jersey
III	Mid Atlantic Region	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
IV	Southeast Region	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
V	Great Lakes Region	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
VI	South Central Region	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
VII	Central Region	Iowa, Kansas, Missouri, Nebraska
VIII	Rocky Mountain Region	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
IX	Western Region	Arizona, California, Hawaii, Nevada
X	Northwest Region	Alaska, Idaho, Oregon, Washington

Individuals who expressed an interest in training to assist crash victims were given a specific scenario for a course — one 2-hour session — and asked how likely they would be to take such a course. Overall, 92% of those who said they were interested in a course said they were either "very likely" (49%) or "somewhat likely" (43%) to take this specific course. Only 8% said they were unlikely.

Figure 52
Likely To Take A 2-Hour Course By Age, 2003



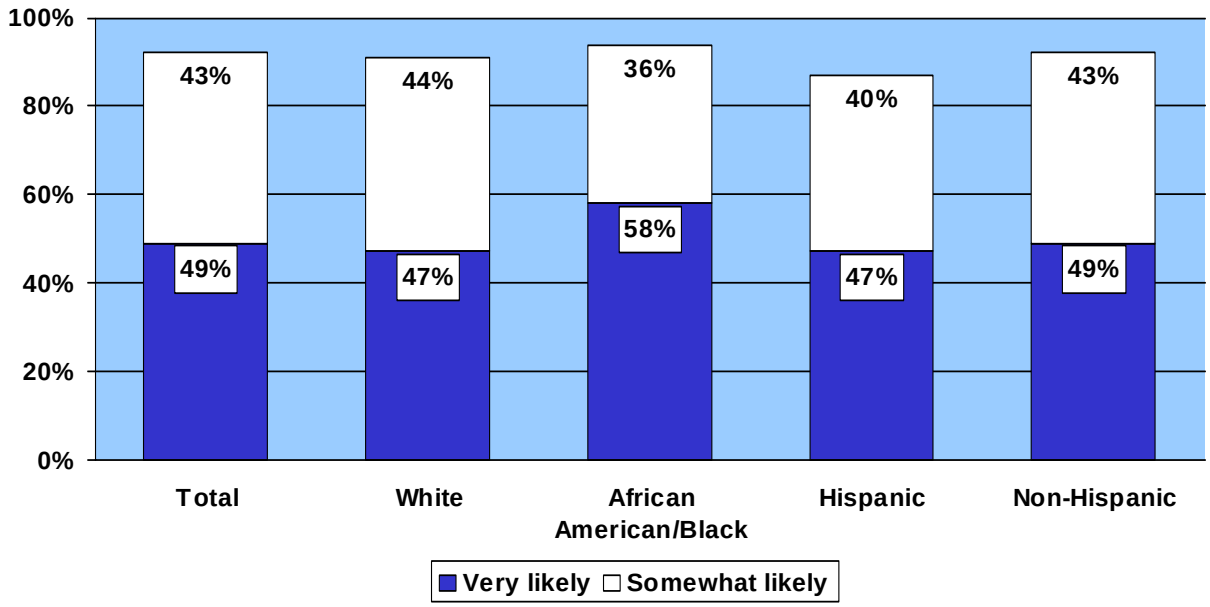
Qx: If the training took no more than 2 hours in a single class session, how likely would you be to take such a class?

Base: Interested in taking a course in assisting injured persons in vehicle crashes, or said "it depends".

Unweighted *N=4,202*

Whites, African Americans/Blacks, Hispanics and non-Hispanics who expressed general interest in taking a training course all voiced a high likelihood of taking the two-hour training — 92%[20], 95%, 87%, and 92%, respectively.

Figure 53
Likely To Take A 2-Hour Course By Race/Ethnicity, 2003



Qx: If the training took no more than 2 hours in a single class session, how likely would you be to take such a class?

Base: Interested in taking a course in assisting injured persons in vehicle crashes, or said "it depends".

Unweighted *N=4,202*

[20] The number does not equal the sum of the components in the Figure due to rounding.

CONCLUSIONS

Some of the notable findings from the Emergency Medical Services and crash injury components of the 2003 Motor Vehicle Occupant Safety Survey include:

- Almost three-in-ten persons age 16 and over reported that they had been injured in a vehicle crash at some time in the past where they required medical attention (27.4%), including an estimated 1.5% of the total population age 16 and older who were injured in the past year.
- Persons who were not wearing their safety belt at the time of the crash were almost twice as likely to be hospitalized as those wearing their safety belt (32% versus 17%).
- Of those who were ever injured in a vehicle crash, 59% (16% of the total population) had received injuries severe enough to prevent them from performing some of their normal activities (work, school, household) for at least a week. Between 4% and 5% of the total population have sustained crash injuries that prevented them from performing some of their normal activities a year after the crash.
- Males were more likely than females to state that they had no concerns about stopping to help victims at a crash site, or stopping to call for help (50% to 37%). Females were more likely to express concerns about not knowing what to do (21% to 16%) and about personal safety (25% to 16%).
- Nearly nine-in-ten persons (87%) reported that they definitely would make a telephone call to get help for a crash victim if it was too dangerous for them to stop and help.
- More than two-thirds of drivers (68%) said they usually have a wireless phone in the vehicle with them when they drive. About three-fourths of these drivers (73%) kept the phone turned on during all or most trips so that calls could be received.
- Among drivers who at least sometimes kept the phone turned on to receive calls while in the vehicle, more than seven-in-ten (72%) said that they would either always or usually answer a call while driving.
- About three-in-ten drivers (29%) who usually had a wireless phone in the vehicle with them said that they talk on the phone while driving during half or more of their trips.
- About three-in-ten drivers (29%) have used a car phone to report an emergency while they were driving or riding in a motor vehicle.
- Nearly nine-in-ten persons (88%) said they would call “9-1-1” first in the event of a medical emergency. Other responses included emergency medical services (4%), police (3%), ambulance service (1%), fire department (1%), and spouse or relative (1%).

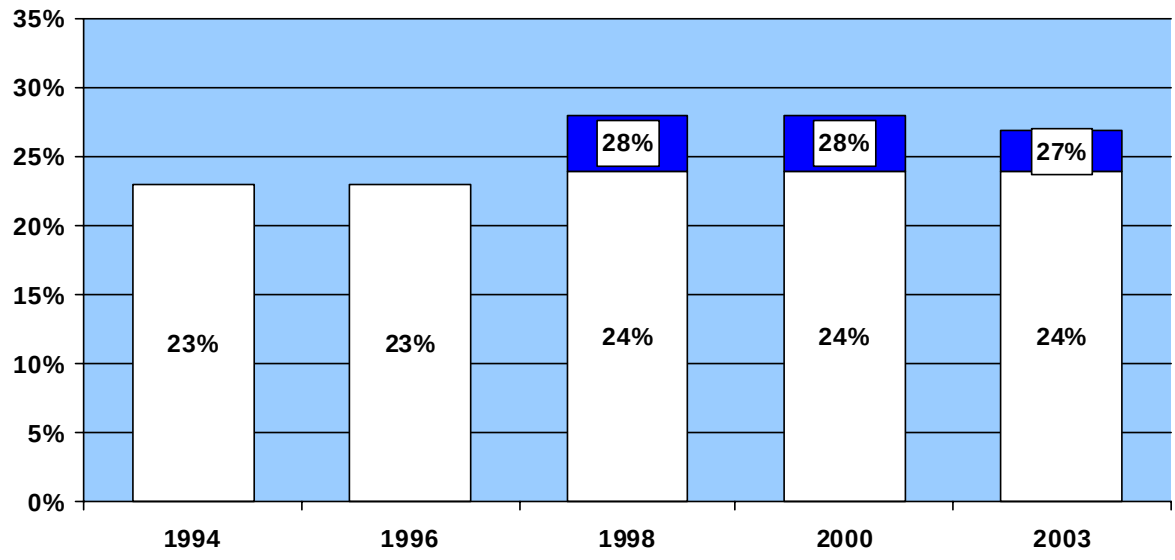
- Just under half of persons age 16 and older have called “9-1-1” or some other emergency number some time in the past (46%).
- Rural residents were less likely to have ever called an emergency number (39%) than residents of urban or suburban communities (47% and 48% respectively).
- About two-in-five persons age 16 and older said they expected an ambulance to arrive within five minutes after being called (41%) and about seven-in-ten (68%) expected arrival within 10 minutes.
- Most persons (95%) were very confident (68%) or somewhat confident (27%) in the abilities of the emergency response personnel to know what to do in a medical emergency.
- About one-third of persons age 16 and older (32%) had taken first aid or emergency training in the last 5 years.
- Two-thirds of persons age 16 and older (66%) expressed interest in taking training on how to assist persons injured in vehicle crashes. Interest in taking training to assist injured crash victims was higher among African Americans/ Blacks (77%) and Hispanics (77%) than among Whites (64%) and non-Hispanics (64%).

SECTION 2: TRENDS, 1994-2003

INJURIES IN VEHICLE CRASHES, 1994-2003

In 1994 and 1996, MVOSS used a single question to identify the percentage of the population age 16 and older ever injured in a motor vehicle crash to the extent that they required medical attention. Twenty-three percent had been injured according to data from both years. However, there were indications that some respondents had discounted certain types of injuries. In 1998, a second question was added to capture persons who may otherwise have discounted injuries as vehicle passengers, or as pedestrians or bicyclists hit by a motor vehicle. While there was little change from earlier years in the results of the first question (24% injured), the addition of the second question increased the total percentage of persons injured by several percentage points in all subsequent years (e.g., to 27% in 2003).

Figure 54
Ever Injured In A Vehicle Crash, 1994-2003



Qx: Have you ever been injured in a motor vehicle accident? Only count injuries that required medical attention.

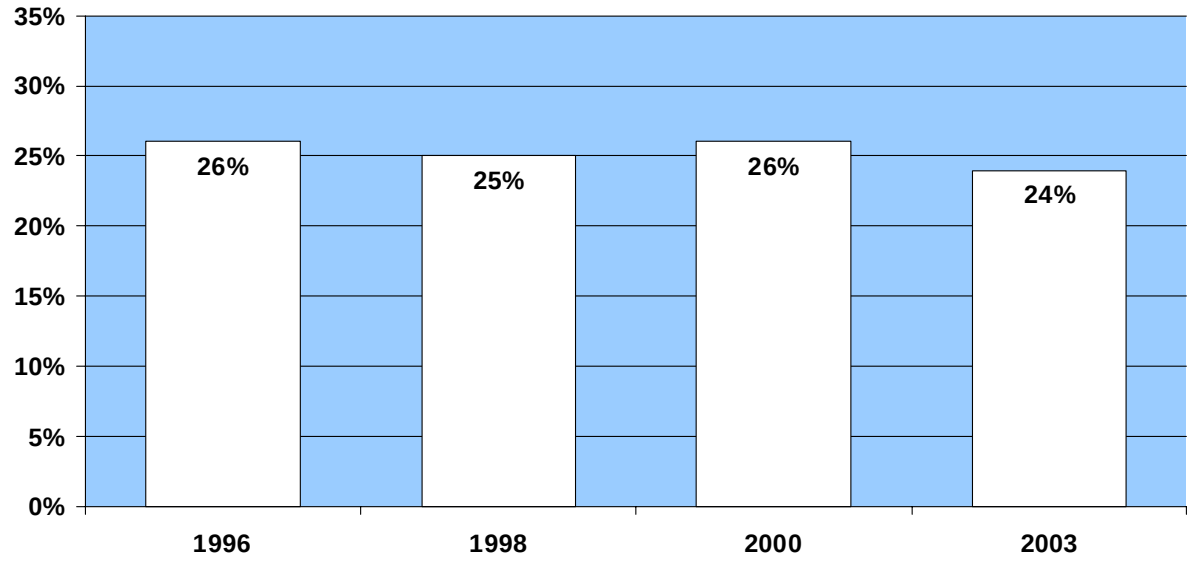
Qx: Have you ever been injured in a motor vehicle accident when you were a passenger, or have you ever been hit and injured by a motor vehicle when you were walking or riding a bike? Only count injuries that required medical attention. (Second question added in 1998, 2000 and 2003.)

Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population ; 2003-Total population.

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=8,210; $N_{(1998)}$=8,215; $N_{(2000)}$=12,121; $N_{(2003)}$=12,377

About one-quarter of those injured in a motor vehicle crash said they were hospitalized as a result.

Figure 55
Hospitalized After A Vehicle Crash, 1996-2003



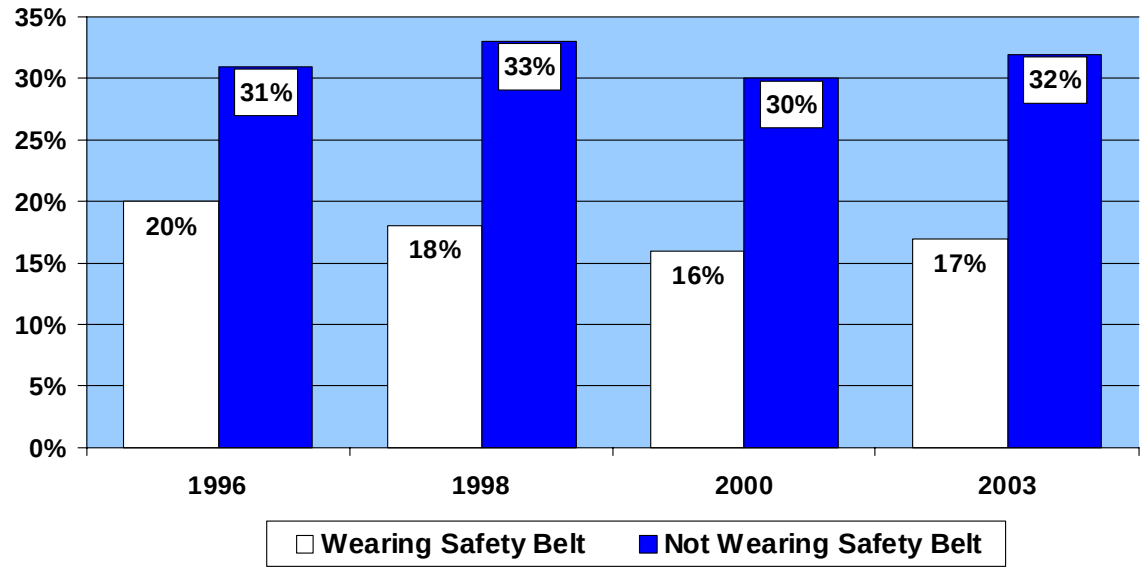
Qx: Were you hospitalized?

Base: 1996-Ever been injured in a vehicle accident; 1998-Ever been injured in a vehicle accident; 2000-Ever been injured in a vehicle accident; 2003-Ever been injured in a vehicle accident.

Unweighted $N_{(1996)}$=1,974; $N_{(1998)}$=1,155; $N_{(2000)}$=3,582; $N_{(2003)}$=3,470

Use of safety belts at the time of the crash made a significant difference in hospitalization outcomes. Less than one-in-five persons who were wearing a safety belt at the time of the crash were hospitalized, compared to more than three-in-ten who were not wearing a safety belt at the time of the crash.

Figure 56
Hospitalized By Safety Belt Use, 1996-2003



Qx: Were you hospitalized?

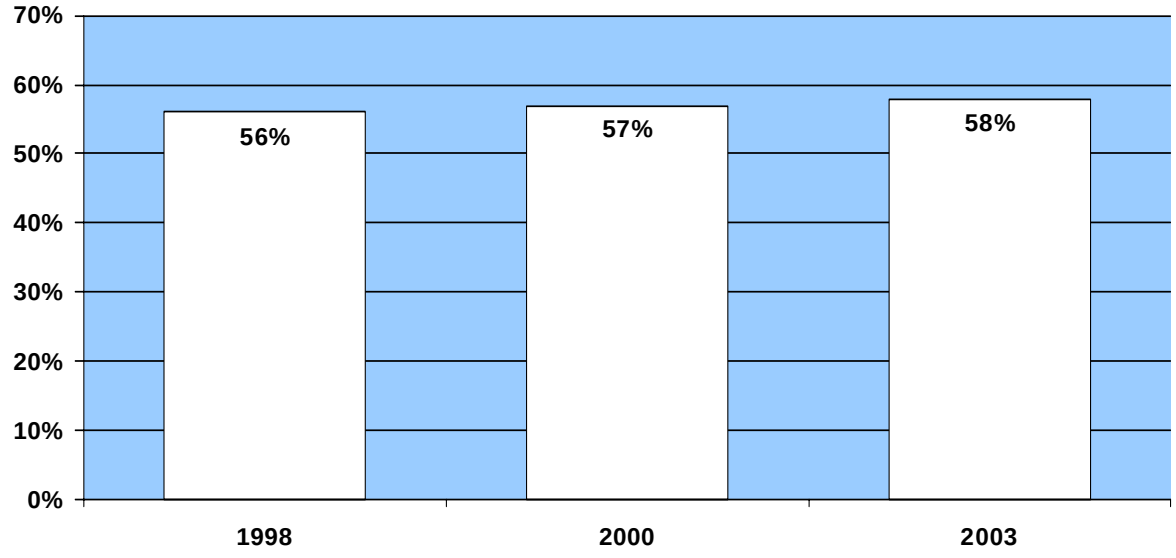
Qx: Were you wearing your seat belt at the time of the accident?

Base: 1996-Ever been injured in a vehicle accident; 1998-Ever been injured in a vehicle accident; 2000-Ever been injured in a vehicle accident; 2003-Ever been injured in a vehicle accident.

Unweighted $N_{(1996)}$=1,974; $N_{(1998)}$=1,155; $N_{(2000)}$=3,582; $N_{(2003)}$=3,470

More than half of those injured in a vehicle crash received follow-up treatment.[21]

Figure 57
Proportion Who Received Follow-Up Treatment After Crash, 1998-2003



Qx: Did you receive any continuing or follow-up treatment for your injuries?

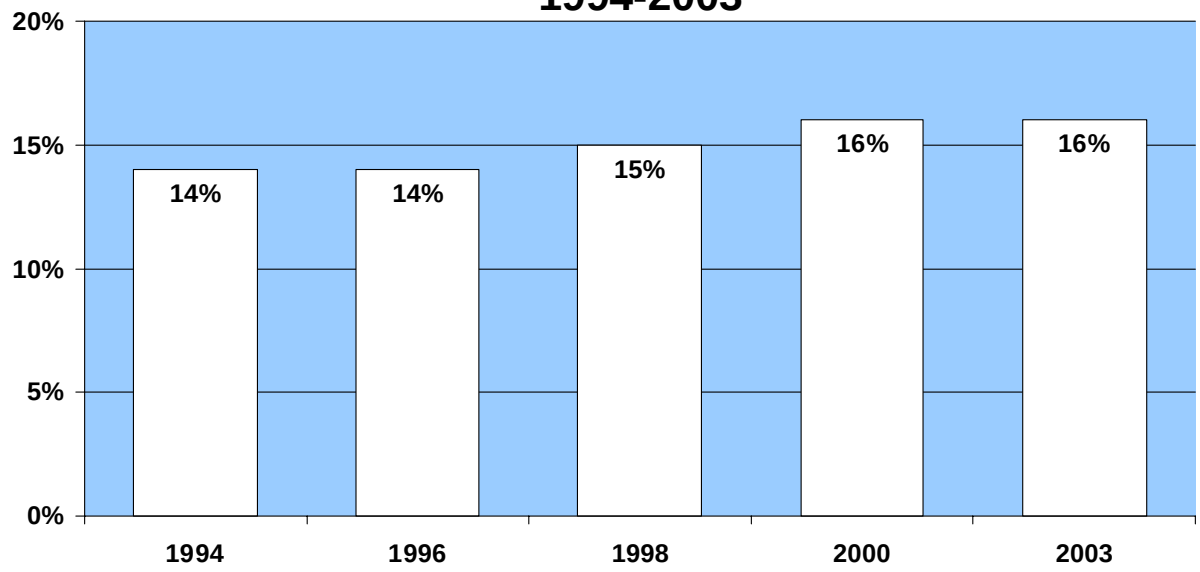
Base: 1998-Ever been injured in a vehicle accident; 2000-Ever been injured in a vehicle accident; 2003-Ever been injured in a vehicle accident.

Unweighted $N_{(1998)}$=1,247; $N_{(2000)}$=3,582; $N_{(2003)}$=3,470

[21] In cases where a respondent was injured in multiple crashes, data are presented only for the most recent crash.

More than half of those ever injured had received injuries severe enough to prevent them from performing some of their normal activities (work, school, household) for at least a week. In 2003, this translated into 16% of the total population being disabled for at least a week after a motor vehicle crash.

Figure 58
Disabled For At Least A Week After Vehicle Crash, 1994-2003



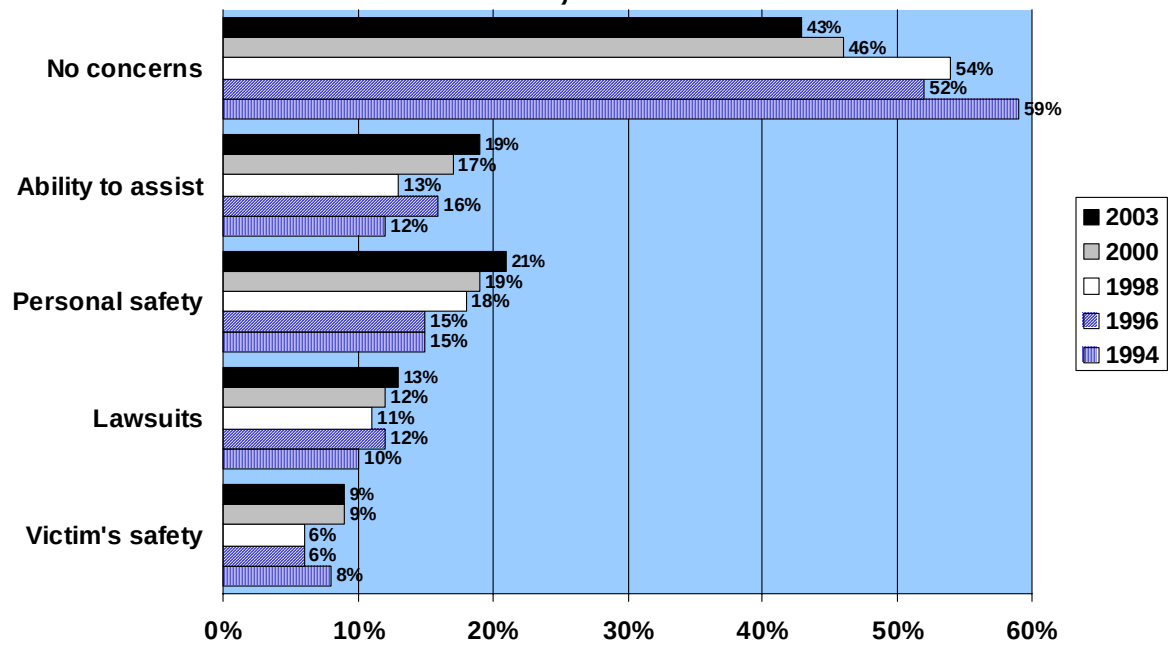
Qx: Have you ever been injured in a motor vehicle accident? Only count injuries that required medical attention.
Qx: Have you ever been injured in a motor vehicle accident when you were a passenger, or have you ever been hot and injured by a motor vehicle when you were walking or riding a bike? Only count injuries that required medical attention.
Qx: Did your injuries from that accident prevent you from performing any of your normal activities (work, school, household) for at least a week?
Qx: Have you ever received injuries from a vehicle accident that prevented you from performing any of your normal activities (work, school, household) for at least a week?

Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.
Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

CONCERNS ABOUT STOPPING AT A CRASH, 1994-2003

During the last several years there has been an increase in public concerns about stopping at the scene of a vehicle crash to offer assistance. Overall the proportion saying they had no concerns about stopping to help or call decreased from 59% in 1994 to 43% in 2003. Almost half of this change came from increased concerns about the ability to offer assistance (12% in 1994 to 19% in 2003). Most of the rest came from greater concerns about personal safety (15% in 1994 to 21% in 2003). There was a slight increase in concerns about lawsuits (10% in 1994 to 13% in 2003).

Figure 59
Concerns About Stopping To Help At A Vehicle Crash, 1994-2003



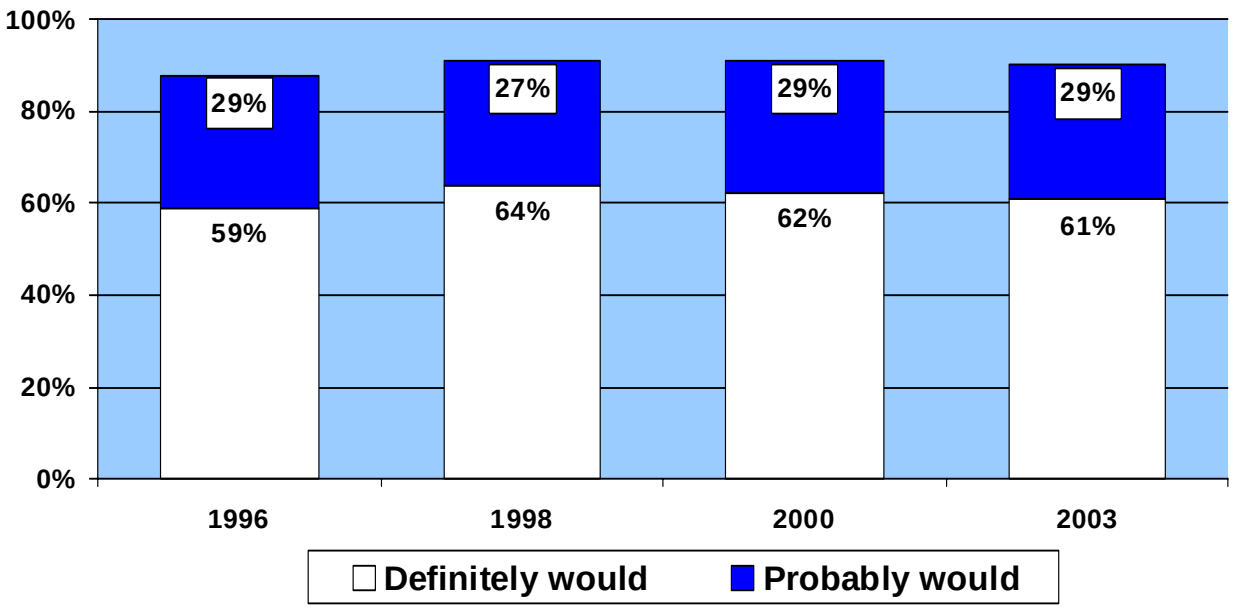
Qx: Suppose that you are driving. You see an accident happen and no one is there at the scene to help. What concerns might you have about stopping to help? Anything else? [Multiple responses accepted in all 5 studies.]

Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

Overall, about three-in-five said they would definitely stop at a motor vehicle crash. About three-in-ten said they would probably stop.

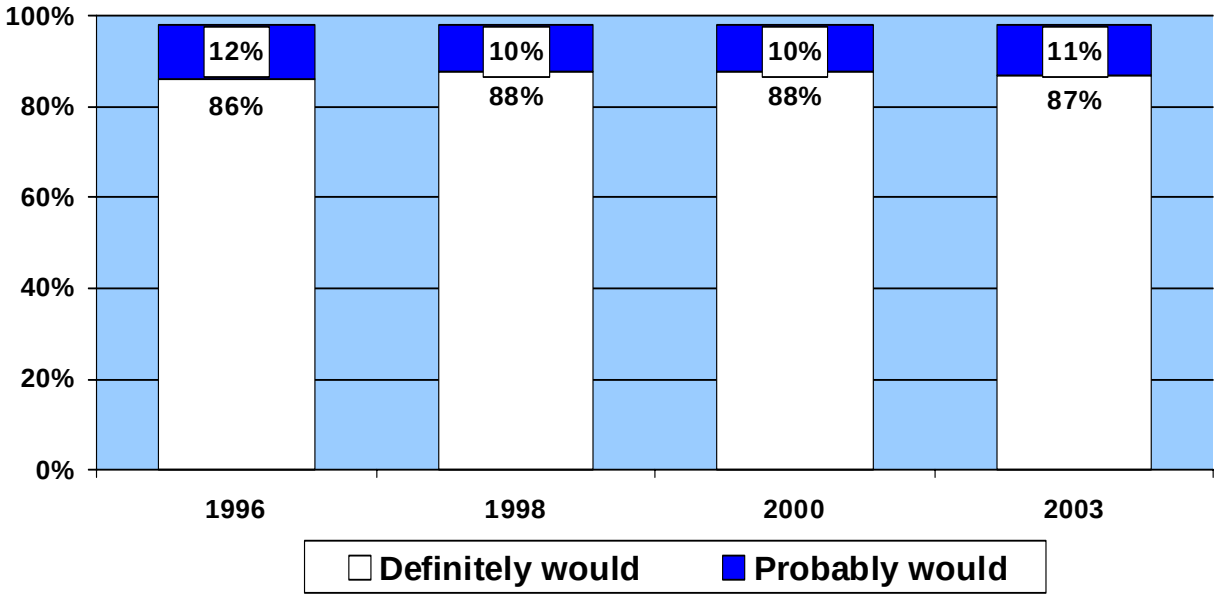
Figure 60
Likelihood Of Stopping At A Crash, 1996-2003



Qx: How likely would you be to stop? Do you think...
Base: 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.
Unweighted $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

Respondents were also asked how likely they would be to call for help in situations where it was too dangerous to stop and provide assistance. Virtually everyone said they would call at the nearest phone with almost nine-in-ten saying they definitely would call.

Figure 61
Likelihood Of Calling To Get Help For A Crash, 1996-2003



Qx: Suppose you are driving, you see an accident and think that someone might be injured, but it is too dangerous to pull over and help at the scene. How likely would you be to call for help from the nearest available phone? (If no one else was on the scene.) Do you think that you…?

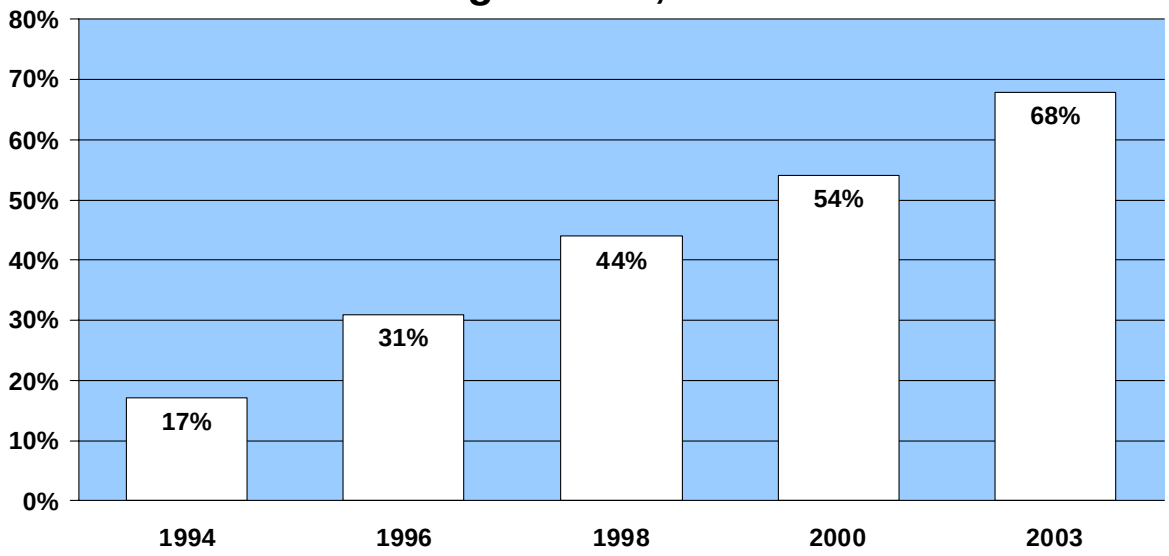
Base: 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

AVAILABILITY OF WIRELESS PHONES IN VEHICLE, 1994-2003

There have been several changes over the years in the wording of the survey question that asks drivers whether they carry a car phone with them in the vehicle they drive. While this presents difficulties in comparing obtained percentages across the four surveys, it remains clear from the data that there has been a rapid increase in drivers who carry wireless phones with them in the vehicle.

Figure 62
Availability Of Wireless Phone In Vehicle Among Drivers, 1994-2003



Qx: 1994- Do you have a cellular phone in the car you usually drive?

1996- Do you have a car phone or carry a cellular phone in the motor vehicle you usually drive?

1998- Do you have a car phone or (ever) carry a cellular phone in the motor vehicle you usually drive?

2000- When you drive a motor vehicle, do you usually have a wireless phone of some type in the vehicle with you? This could be a car phone, a cellular phone, a PCS phone, or a satellite phone.

2003- When you drive a motor vehicle, do you usually have a wireless phone of some type in the vehicle with you? This could be a car phone, a cellular phone, a PCS phone, a GSM phone or a satellite phone.

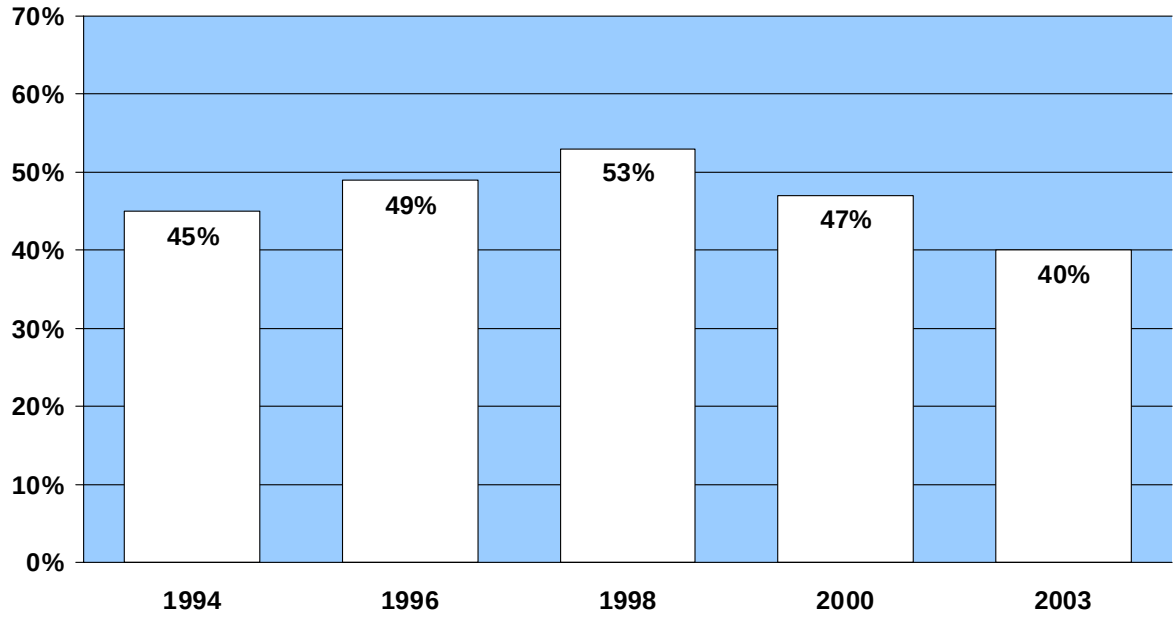
Base: 1994-Drivers; 1996-Drivers; 1998-Drivers; 2000-Drivers; 2003-Drivers.

Unweighted $N_{(1994)}$=3,685; $N_{(1996)}$=3,755; $N_{(1998)}$=3,788; $N_{(2000)}$=5,564; $N_{(2003)}$=5,509

KNOWLEDGE OF INITIALS "EMS", 1994-2003

Overall, the ability to correctly recall what the initials "EMS" stand for rose steadily from 45% in 1994, to 49% in 1996, to 53% in 1998, but fell to 47% in 2000 and fell further to 40% in 2003.

Figure 63
Know What The Initials "EMS" Stand For, 1994-2003



Qx: Can you tell me what the initials "EMS" stand for?

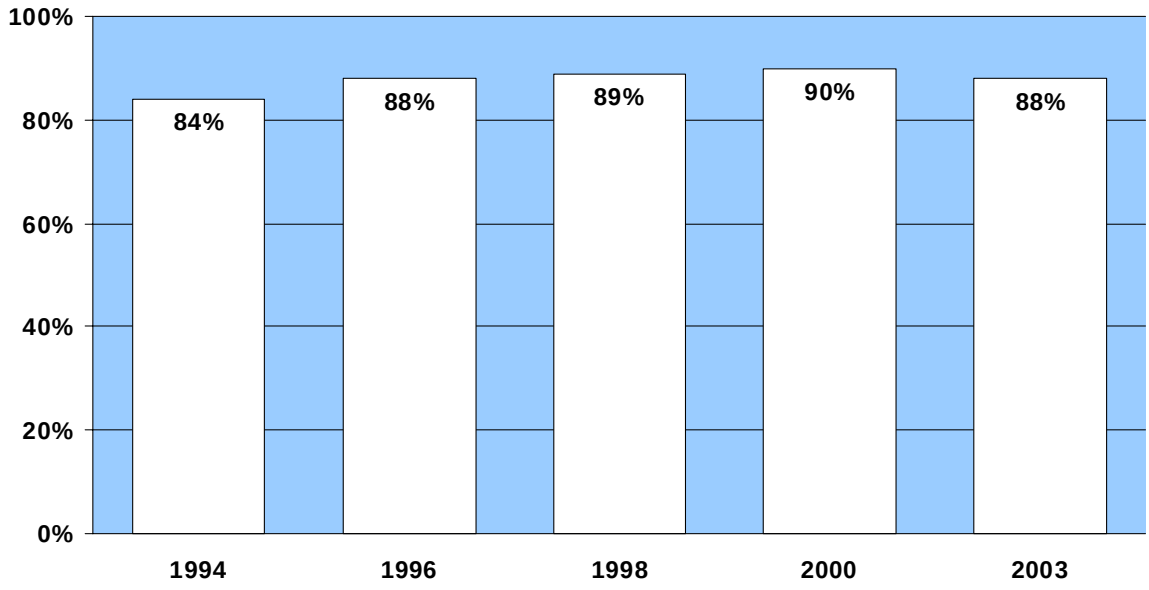
Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197.

TELEPHONING FOR HELP, 1994-2003

The proportion of people who specifically said they would call "9-1-1" first in the event of a medical emergency decreased from 90% in 2000 to 88% in 2003. However, the 2003 number remained higher than the number obtained by the first MVOSS in 1994 (84%).

Figure 64
Would Call 9-1-1 First In Medical Emergency, 1994-2003



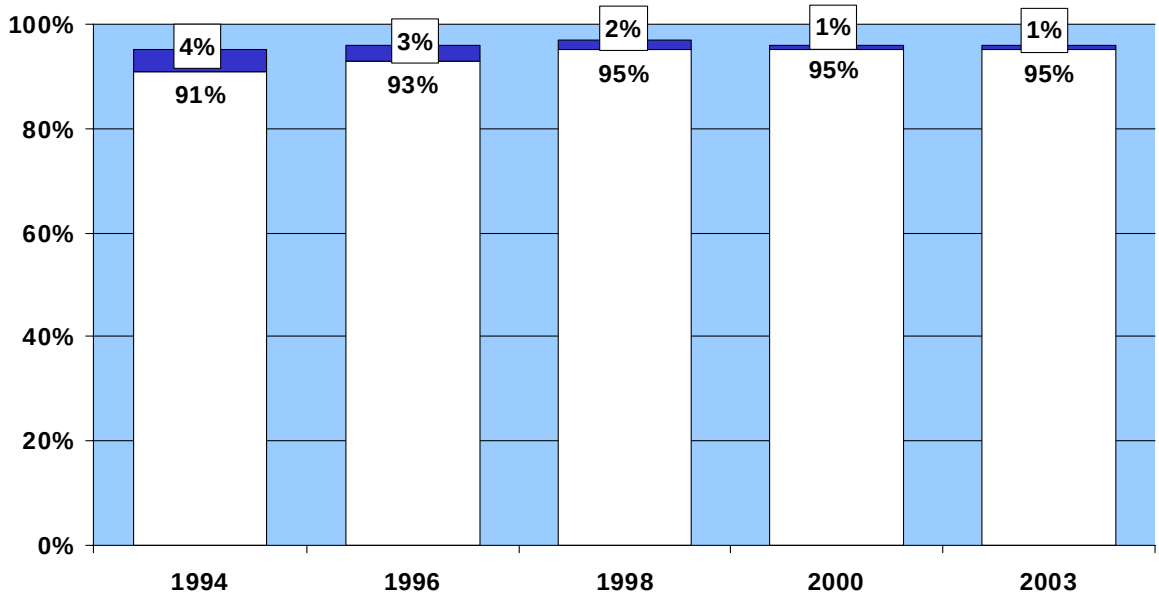
Qx: If someone was experiencing a medical emergency and you needed to get help for that person, who would you call first?

Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

The vast majority of the total population acknowledged having “9-1-1” or a special emergency phone number. The percentage with “9-1-1” has increased from 91% in 1994 to 95% in 2003.

Figure 65
Has 9-1-1 or Special Emergency Number, 1994-2003



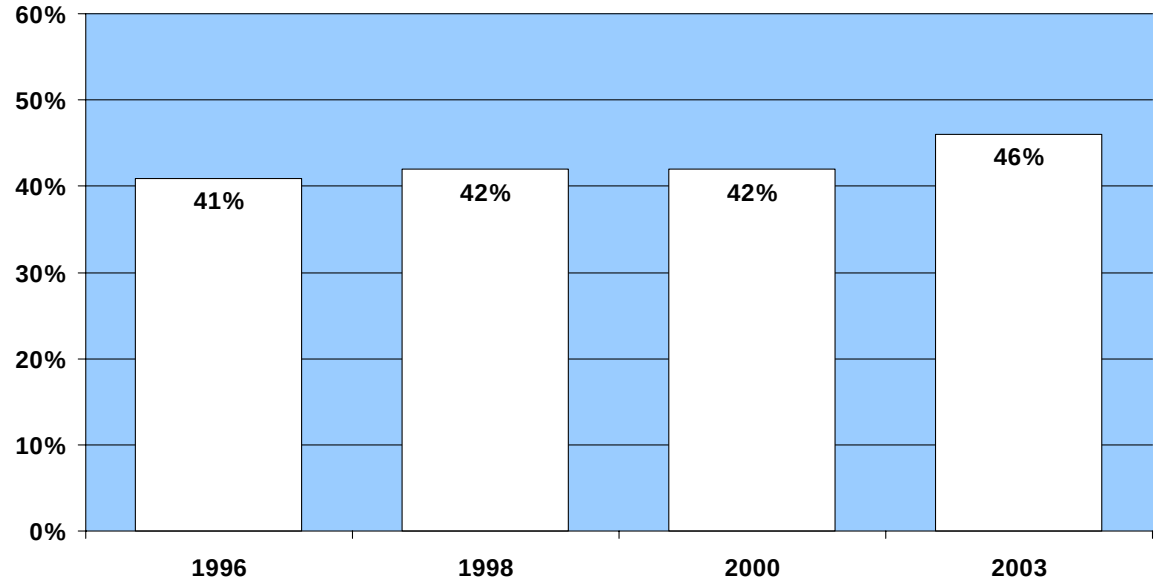
Qx: If someone was experiencing a medical emergency and you needed to get help for that person, who would you call first?
Qx: Is there a particular telephone number to call for medical emergencies in your community?
Qx: What is that telephone number?

Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

More than two-in-five persons age 16 or older have called “9-1-1” or some other emergency number for help at some time in the past. The proportion who said they had called “9-1-1” has increased from 41% in 1996 to 46% in 2003.

Figure 66
Ever Called Emergency Phone Number, 1996-2003



Qx: Have you personally ever called 9-1-1 or another emergency number for help?

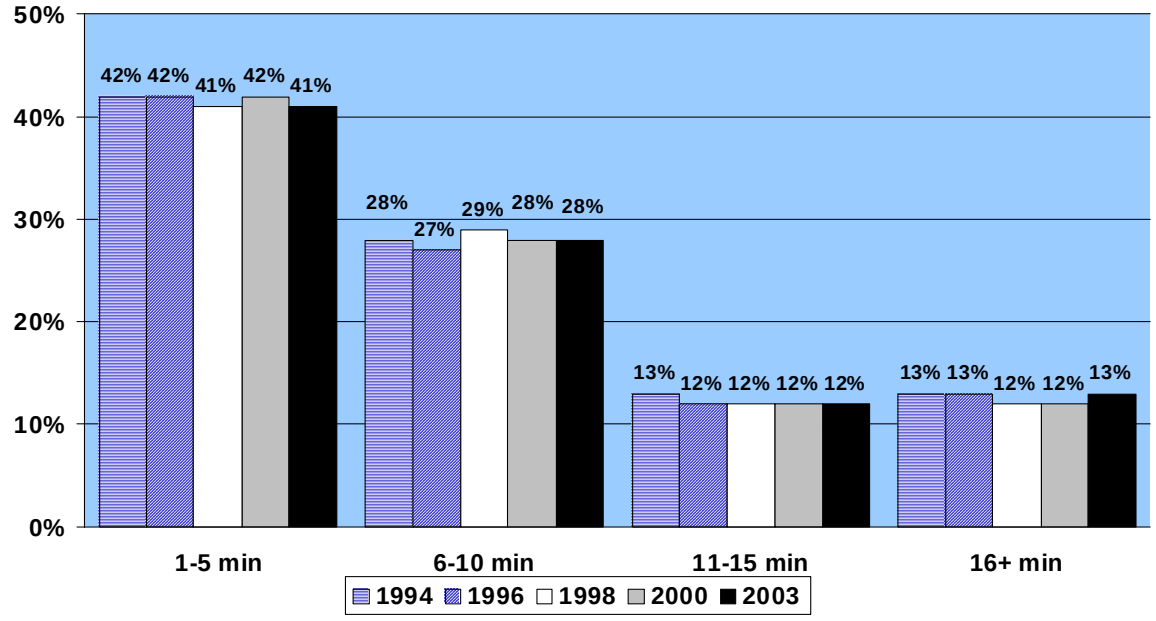
Base: 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

EXPECTATIONS FOR EMERGENCY RESPONSE, 1994-2003

There has been virtually no change in expected response time in a medical emergency. About two-fifths of persons interviewed expected an ambulance to arrive within five minutes and another 28% expected it to arrive in 6 to 10 minutes.

Figure 67
Expected Time For Ambulance To Arrive, 1994-2003



Qx: If there was a medical emergency in your neighborhood and you called an ambulance, how long do you think it would take for the ambulance to arrive?

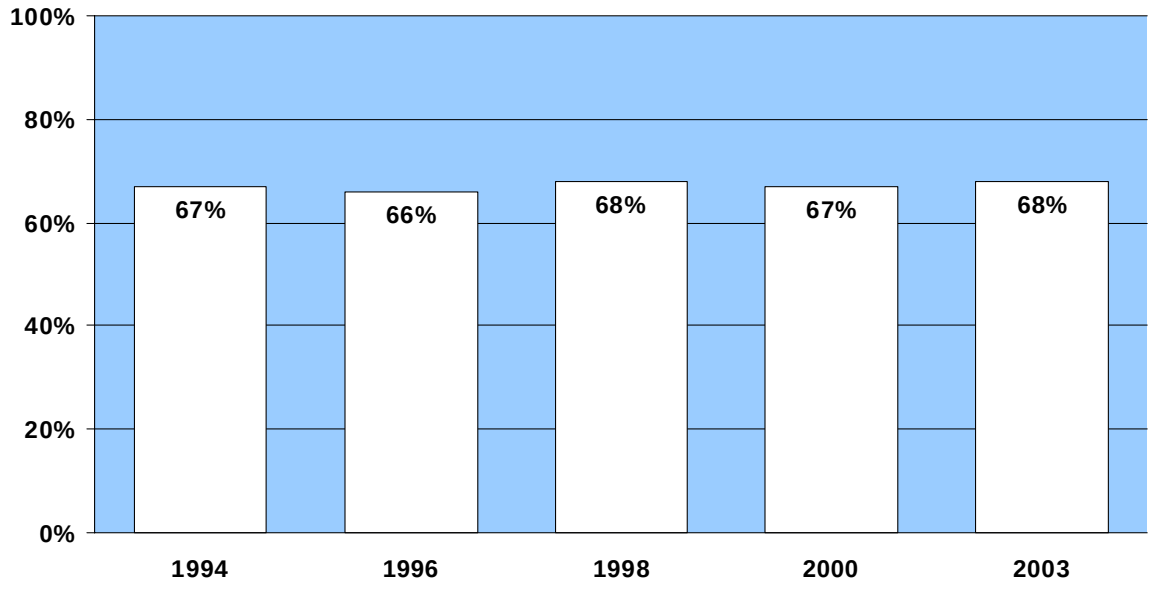
Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

CONFIDENCE IN EMERGENCY WORKERS, 1994-2003

Overall, the proportion that reported being very confident in emergency workers knowing what to do remained relatively unchanged from 1994 to 2003 (66%-68%).

Figure 68
Very Confident In Emergency Workers, 1994-2003



Qx: Regardless of the type of medical emergency, how confident are you that the ambulance or other emergency workers would know what to do?

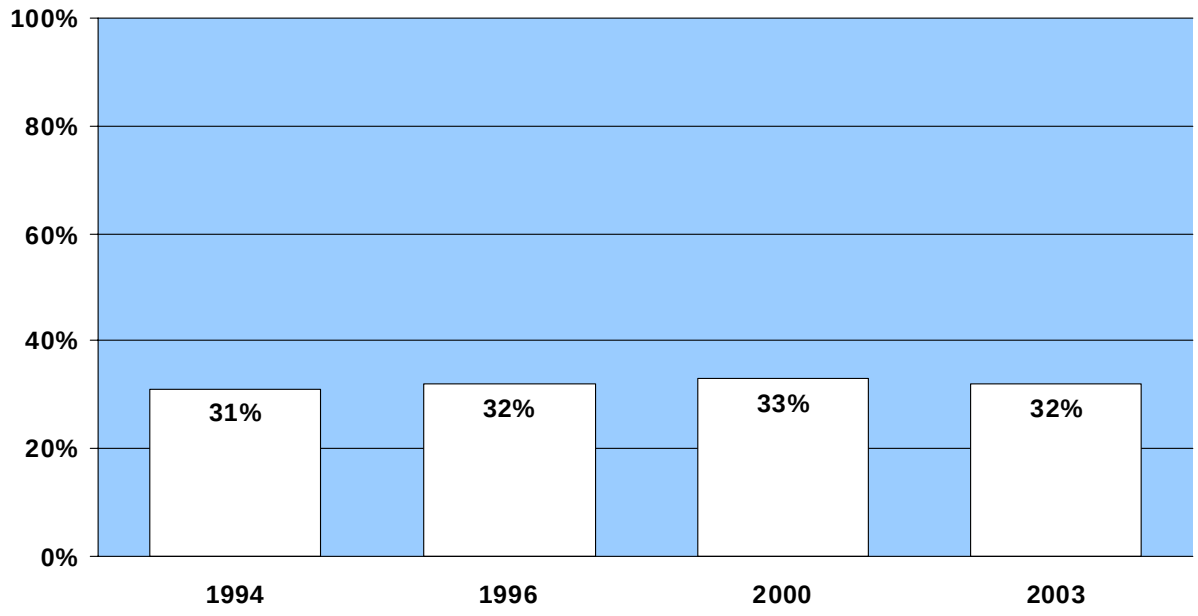
Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

INTEREST IN TRAINING TO ASSIST CRASH VICTIMS, 1994-2003

The proportion of the population who had taken first aid or emergency training in the last five years remained largely the same (31% in 1994 and 32% in 2003). (Data from 1998 was not included because changes in the questionnaire for that year skewed the data.)

Figure 69
Had Emergency Training In Past 5 Years, 1994-2003



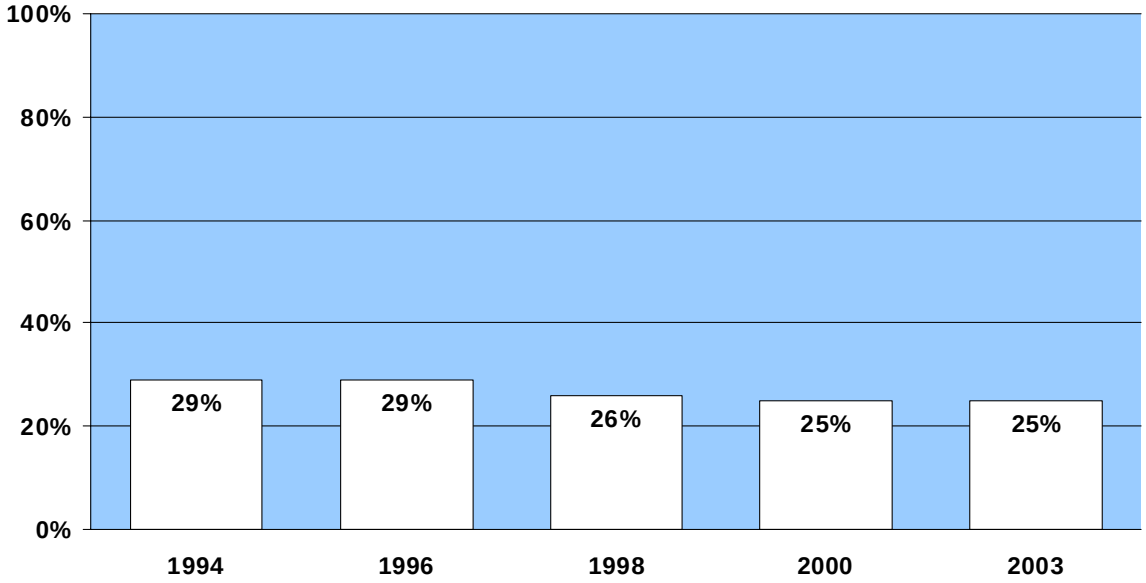
Qx: In the past 5 years, have you taken any kind of emergency or first aid training?

Base: 1994-Total population; 1996-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=4,022; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

Overall interest in taking a training course to assist crash victims, as measured by those who said they were “very interested”, decreased from the 29% reported in the 1994 and 1996 studies to 25% in 2003.

Figure 70
Very Interested In Training To Assist Crash Victims, 1994-2003



Qx: Assuming it was at low cost and in a convenient location, how interested would you be in taking training on how to assist injured persons in vehicle crashes?

Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population; 2003-Total population.

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=4,022; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049; $N_{(2003)}$=6,197

CONCLUSIONS

Notable trends between the 1994 and 2003 studies include:

- The survey continues to show slightly more than one-quarter of the population age 16 and older having been injured in a vehicle crash to the point where they required medical attention.
- The survey has also consistently found that about one-fourth of injured crash victims were hospitalized, hospitalization was more likely if safety belts were not worn, more than half of injured persons received continuing or follow-up treatment, and about one-in-seven injured persons was disabled to some extent for at least a week after the crash.
- There has been an overall increase in public concerns about stopping at the site of a vehicle crash to offer assistance. In particular, there has been an increase in concerns about the ability to offer proper care and about personal safety.
- The percentage of drivers who usually have a wireless phone in the vehicle with them has increased dramatically since 1994.
- There has been a slight increase since 1994 in the proportion of the total population who said they have a “9-1-1” emergency number.
- There was a slight increase in 2003 compared to earlier survey years in the proportion of the total population that at some time in the past had called “9-1-1” or another emergency number for help.
- There has been little change in the expected time for an ambulance to arrive when called for a medical emergency.
- Confidence in the ability of EMS personnel to give the appropriate assistance in the event of a medical emergency has remained largely unchanged.
- The proportion that has had emergency training in the past five years has remained about the same. However, interest in taking a training course to assist crash victims has decreased.

It should be noted that these results are based on only five points in time and the points are only two years apart. Future studies will be better able to substantiate these trends.

APPENDIX A: PRECISION OF SAMPLING ESTIMATES

***Reprinted from:**

Boyle, J. and P. Vanderwolf. 2003 Motor Vehicle Occupant Safety Survey. Volume I. Methodology Report. Washington DC: U.S. Department of Transportation, National Highway Traffic Safety Administration

Precision of Sample Estimates

The objective of the sampling procedures used on this study was to produce a random sample of the target population. A random sample shares the same properties and characteristics of the total population from which it is drawn, subject to a certain level of sampling error. This means that with a properly drawn sample we can make statements about the properties and characteristics of the total population within certain specified limits of certainty and sampling variability.

The confidence interval for sample estimates of population proportions, using simple random sampling without replacement, is calculated by the following formula:

$$z * \left[se(x) = \sqrt{\frac{(p * q)}{(n-1)}} \right]$$

Where:

se (x) = the standard error of the sample estimate for a proportion;
p = some proportion of the sample displaying a certain characteristic or attribute;
q = (1 - p);
n = the size of the sample;
z = the standardized normal variable, given a specified confidence level (1.96 for samples of this size).

The sample sizes for the surveys are large enough to permit estimates for sub-samples of particular interest. Table 6, on the next page, presents the expected size of the sampling error for specified sample sizes of 8,000 and less, at different response distributions on a categorical variable. As the table shows, larger samples produce smaller expected sampling variances, but there is a constantly declining marginal utility of variance reduction per sample size increase.

TABLE 6
Expected Sampling Error (Plus Or Minus)
At The 95% Confidence Level
(Simple Random Sample)

Size of Sample or Subsample	Percentage Of The Sample Or Subsample Giving A Certain Response Or Displaying A Certain Characteristic For Percentages Near:				
	10 or 90	20 or 80	30 or 70	40 or 60	50
8,000	0.7	0.9	1.0	1.1	1.1
6,000	0.8	1.0	1.2	1.2	1.3
4,500	0.9	1.2	1.3	1.4	1.5
4,000	0.9	1.2	1.4	1.5	1.5
3,000	1.1	1.4	1.6	1.8	1.8
2,000	1.3	1.8	2.0	2.1	2.2
1,500	1.5	2.0	2.3	2.5	2.5
1,300	1.6	2.2	2.5	2.7	2.7
1,200	1.7	2.3	2.6	2.8	2.8
1,100	1.8	2.4	2.7	2.9	3.0
1,000	1.9	2.5	2.8	3.0	3.1
900	2.0	2.6	3.0	3.2	3.3
800	2.1	2.8	3.2	3.4	3.5
700	2.2	3.0	3.4	3.6	3.7
600	2.4	3.2	3.7	3.9	4.0
500	2.6	3.5	4.0	4.3	4.4
400	2.9	3.9	4.5	4.8	4.9
300	3.4	4.5	5.2	5.6	5.7
200	4.2	5.6	6.4	6.8	6.9
150	4.8	6.4	7.4	7.9	8.0
100	5.9	7.9	9.0	9.7	9.8
75	6.8	9.1	10.4	11.2	11.4
50	8.4	11.2	12.8	13.7	14.0

NOTE: Entries are expressed as percentage points (+ or -)

However, the sampling design for this study included a separate, concurrently administered over-sample of youth and young adults (age 16-39). Both the cross-sectional sample and the over-sample of the youth/younger adult population were drawn as simple random samples; however, the disproportionate sampling of the age 16-39 population introduces a design effect that makes it inappropriate to assume that the sampling error for total sample estimates will be identical to those of a simple random sample.

In order to calculate a specific interval for estimates from a sample, the appropriate statistical formula for calculating the allowance for sampling error (at a 95% confidence interval) in a stratified sample with a disproportionate design is:

$$\mathrm{ASE} = 1.96\sqrt{\sum_{h=1}^{g}\left[\mathrm{W}_h^2 \left\{ (1 - f_h)\left(\frac{s_h^2}{n_h - 1} \right) \right\} \right]}$$

where:

ASE	=	allowance for sampling error at the 95% confidence level;
h	=	a sample stratum;
g	=	number of sample strata;
W_h	=	stratum h as a proportion of total population;
f_h	=	the sampling fraction for group h - the number in the sample divided by the number in the universe;
s^2_h	=	the variance in the stratum h - for proportions this is equal to p_h (1.0 - p_h);
n_h	=	the sample size for the stratum h.

Although Table 6 provides a useful approximation of the magnitude of expected sampling error, precise calculation of allowances for sampling error requires the use of this formula. To assess the design effect for sample estimates, we calculated sampling errors for the disproportionate sample for a number of key variables using the above formula. These estimates were then compared to the sampling errors for the same variables, assuming a simple random sample of the same size. The two strata (h^1 and h^2) in the disproportionate sample were all respondents age 16-39 and all respondents age 40 and over, respectively. The proportion for the 16-39 year old stratum (w^1) was 53.0 percent while the proportion for the 40 and over stratum (w^2) was 47.0 percent.

As shown in Table 7, the disproportionate sampling increases the confidence interval by an average of 0.7 percent, compared to a simple random sample of the same size. This means the sample design slightly decreases the sampling precision for total population estimates, while increasing the precision of sampling estimates for the sub-sample aged 16-39 years old. Since the average difference in the confidence interval between the stratified disproportionate sample and a simple random sample is less than one percentage point, the sampling error table for a simple random sample will provide a reasonable approximation of the precision of sampling estimates in the survey.

TABLE 7
Design Effect On Confidence Intervals For Sample Estimates Between Disproportionate Sample Used In Occupant Protection Survey And A Proportionate Sample Of Same Size

VARIABLE (Version 1 only)	p=	---------- CONFIDENCE INTERVALS ---------- PERCENTAGE POINTS ± AT 95% CONFIDENCE LEVEL: HYPOTHETICAL PROPORTIONATE SAMPLING*	CURRENT DIS-PROPORTIONATE SAMPLING	DIFFERENCE IN CONFIDENCE INTERVALS ABOUT ESTIMATES
Driven in the past year	*89.2%*	*0.77*	*0.78*	*1.3%*
Drunk alcohol in past year	*63.4%*	*1.21*	*1.23*	*1.7%*
Always use safety belt (N=5502)	*85.1%*	*0.94*	*0.94*	----
Dislike safety belts (N=5505)	*33.1%*	*1.24*	*1.26*	*1.6%*
Always use passenger belt (N=5655)	*82.7%*	*0.98*	*0.98*	----
Favor (a lot) safety belt laws	*69.3%*	*1.15*	*1.16*	*.9%*
Should be primary enforcement	*63.9%*	*1.20*	*1.22*	*.9%*
Ever ticketed by police for seatbelt	*9.3%*	*0.73*	*0.72*	*-1.4%*
Ever injured in vehicle crash	*23.6%*	*1.06*	*1.08*	*1.9%*
Drives a car for work almost every day	*17.2%*	*0.94*	*0.96*	*2.1%*
Set a good example for others (N=5413) (reason for using safety belts)	*74.1%*	*1.17*	*1.19*	*1.7%*
Driver Air Bag in vehicle (N=5551)	*76.5%*	*1.12*	*1.14*	*1.8%*
Race: Black/African American	*8.6%*	*0.70*	*0.70*	----
Ethnicity: Hispanic	*13.2%*	*0.84*	*0.81*	*-3.6%*
Gender: Male	*48.0%*	*1.24*	*1.27*	*2.4%*
AVERAGE DIFFERENCE IN CONFIDENCE INTERVALS				*0.7%*

* Total sample proportions using SRS formula
Unless specified otherwise N=6180

Estimating Statistical Significance

The estimates of sampling precision presented in the previous section yield confidence bands around the sample estimates, within which the true population value should lie. This type of sampling estimate is appropriate when the goal of the research is to estimate a population distribution parameter. However, the purpose of some surveys is to provide a comparison of population parameters estimated from independent samples (e.g. annual tracking surveys) or between subsets of the same sample. In such instances, the question is not simply whether or not there is any difference in the sample statistics that estimate the population parameter, but rather is the difference between the sample estimates statistically significant (i.e., beyond the expected limits of sampling error for both sample estimates).

To test whether or not a difference between two sample proportions is statistically significant, a rather simple calculation can be made. The maximum expected sampling error (i.e., confidence interval in the previous formula) of the first sample is designated ***s1*** and the maximum expected sampling error of the second sample is ***s2***. The sampling error of the difference between these estimates is ***sd*** and is calculated as:

$$\mathrm{sd} = \sqrt{(s1^2 + s2^2)}$$

Any difference between observed proportions that exceeds ***sd*** is a statistically significant difference at the specified confidence interval. Note that this technique is mathematically equivalent to generating standardized tests of the difference between proportions.

An illustration of the pooled sampling error between sub-samples for various sizes is presented in Table 8. This table can be used to determine the size of the difference in proportions between drivers and non-drivers or other sub-samples that would be statistically significant.

TABLE 8. Pooled Sampling Error Expressed as Percentages For Given Sample Sizes (Assuming P=Q)

Sample Size																	
4000	14.1	10.0	7.1	5.9	5.1	4.7	4.3	4.0	3.8	3.6	3.5	3.0	2.7	2.5	2.4	2.3	2.2
3500	14.1	10.0	7.1	5.9	5.2	4.7	4.3	4.1	3.8	3.7	3.5	3.0	2.7	2.6	2.4	2.3	
3000	14.1	10.0	7.2	5.9	5.2	4.7	4.4	4.1	3.9	3.7	3.6	3.1	2,8	2.7	2.5		
2500	14.1	10.0	7.2	6.0	5.3	4.8	4.5	4.2	4.0	3.8	3.7	3.2	2.9	2.8			
2003	14.2	10.1	7.3	6.1	5.4	4.9	4.6	4.3	4.1	3.9	3.8	3.3	3.1				
1500	14.2	10.2	7.4	6.2	5.5	5.1	4.7	4.5	4.3	4.1	4.0	3.6					
1000	14.3	10.3	7.6	6.5	5.8	5.4	5.1	4.8	4.7	4.5	4.4						
900	14.4	10.4	7.7	6.5	5.9	5.5	5.2	4.9	4.8	4.6							
800	14.4	10.4	7.8	6.6	6.0	5.6	5.3	5.1	4.9								
700	14.5	10.5	7.9	6.8	6.1	5.7	5.5	5.2									
600	14.6	10.6	8.0	6.9	6.3	5.9	5.7										
500	14.7	10.8	8.2	7.2	6.6	6.2											
400	14.8	11.0	8.5	7.5	6.9												
300	15.1	11.4	9.0	8.0													
200	15.6	12.1	9.8														
100	17.1	13.9															
50	19.8																
	50	100	200	300	400	500	600	700	800	900	1000	1500	2003	2500	3000	3500	4000
Sample Size																	

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