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Volume Four **Crash Injury and Emergency Medical Services Report**

2000
Motor Vehicle Occupant Safety Survey

U.S. Department of Transportation
National Highway Traffic Safety Administration

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16. Abstract

The 2000 Motor Vehicle Occupant Safety Survey was the fourth 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 November 8, 2000 and ended January 21, 2001. This report presents the survey findings pertaining to crash injury and emergency medical services. Telephone surveys provide self-reported information, which can differ from information collected through direct observation. Detailed information on the survey methodology, as well as copies of the questionnaires, are contained in a separate NHTSA report ("2000 Motor Vehicle Occupant Safety Survey. Volume 1. Methodology Report").

Nearly three in ten persons (28.4%) age 16 and older reported ever having been injured in a vehicle crash where they required medical attention. Approximately 16% of the total population, age 16 and older, have received injuries from motor vehicle crashes severe enough to prevent them from performing normal activities for at least a week. Persons not wearing a seat 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 seat belts. People have more concerns about stopping at the scene of a vehicle crash in 2000. 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 car or cellular phone with them when they drive has continued to increased in all community types (urban, suburban and rural).

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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 seat belt issues while Version 2 emphasizes child restraint issues. The questionnaires also contain smaller modules addressing such areas as air bags, motorcyclist and bicyclist helmet use, emergency medical services, and crash injury experience. For the 2000 survey, each questionnaire was administered to approximately 6,000 individuals. This represented an increase in sample size of 2,000 per questionnaire compared to the previous Motor Vehicle Occupant Safety Surveys.

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 2000 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 2000 survey also included new questions dealing with such areas as adjustable shoulder belts, side air bags, inspection stations for child restraints, and how seat belts fit children.

The following report presents findings from the 2000 Motor Vehicle Occupant Safety Survey pertaining to crash injury and emergency medical services. Section 1 presents the 2000 results. Section 2 compares findings across years, from 1994 through 2000.

Methodology

The 2000 Motor Vehicle Occupant Safety Survey was conducted by Schulman, Ronca & Bucuvalas, Inc. (SRBI), a national survey research organization. SRBI conducted a total of 12,121 telephone interviews among a national population sample. To reduce the burden on respondents, the survey employed two questionnaires. A total of 6,072 interviews were completed in Version 1 and 6,049 interviews were completed with Version 2. Although some questions appeared in both versions (e.g., demographics, crash injury experience, seat 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 November 8, 2000 to January 21, 2001. This is approximately the same time period in which the previous surveys were conducted. For a complete description of the methodology and sample disposition, including computation of weights, refer to the 2000 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 Blacks and Whites.

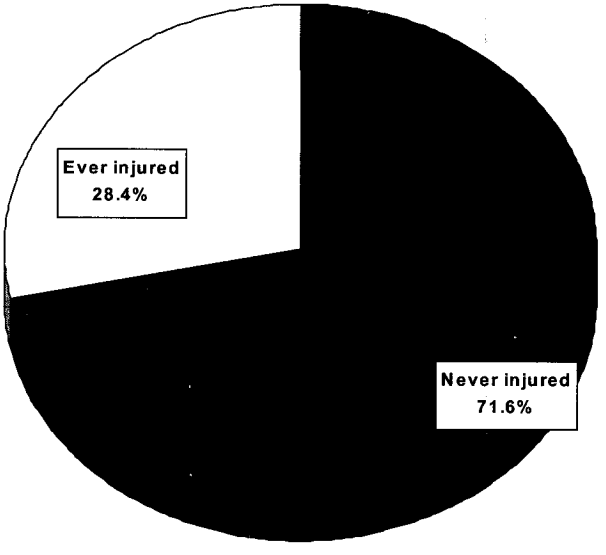
SECTION 1

2000 SURVEY RESULTS

INJURIES IN VEHICLE CRASHES

Nearly three in ten persons (28.4%) age 16 and over reported ever having been injured in a vehicle crash where they required medical attention (Figure 1). The proportions for males and females are very close to the overall proportion — 28% and 29% respectively.

Figure 1
Crash Injury Experience, 2000



Qx: Have you ever been injured in a 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=12,121*

One-third (33%)[1] of those who have ever been injured in a motor vehicle crash incurred a crash related injury in the last five years (Table 1).

Table 1
When Most Recent Crash-Related Injury Occurred, 2000

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

Base: Ever injured in a vehicle accident.

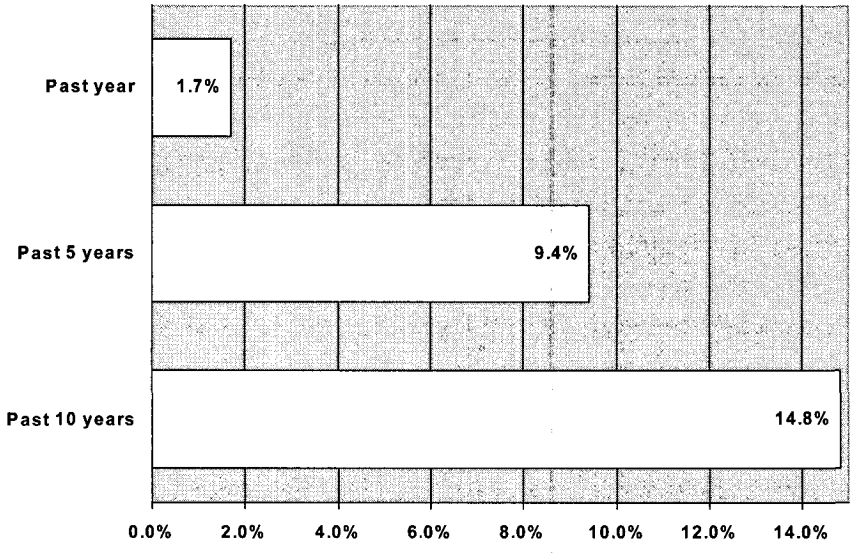
Unweighted *N=3,582*

Within the past year	6%
1 year ago	5%
2 years ago	7%
3 years ago	6%
4 years ago	4%
5 years ago	6%
6 to 9 years ago	11%
10 to 14 years ago	14%
15 to 19 years ago	10%
20 to 29 years ago	14%
30 or more years ago	16%
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 has been injured in a crash in the last year, the last five years, or the last 10 years (Figure 2). This analysis shows that 1.7% of the total population was injured in a crash in the last year, 9.4% was injured in a crash in the last five years (this includes those who were injured in a crash in the last year), and 14.8% 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, 2000



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

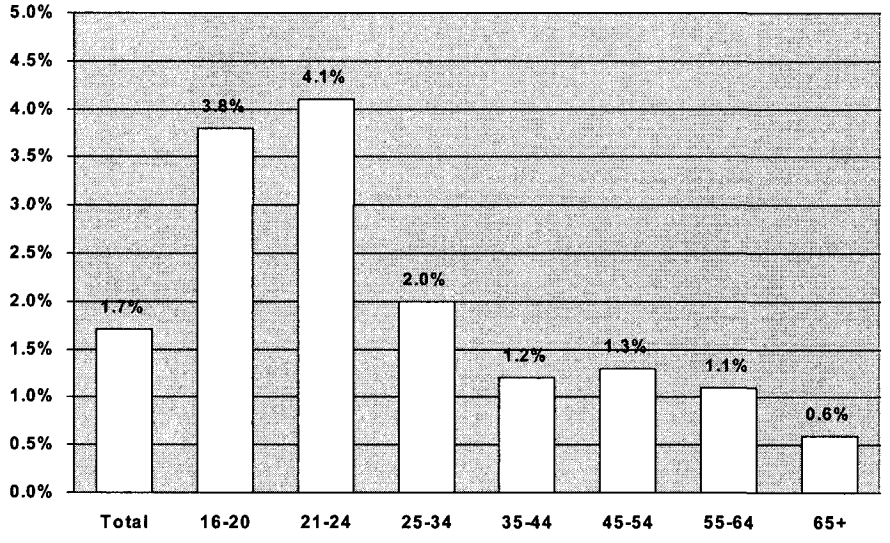
Qx: How long ago did [that/the most recent] accident occur?

Base: Total population 16 and over.

Unweighted *N=12,121*

The prevalence of crash-related injuries in the last year was highest among those in the 16 to 20 age group (3.8%) and the 21 to 24 age group (4.1%) (Figure 3). These age groups comprised almost two-fifths (38%) 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 1.7%. The rate dropped to 2.0% of those in the 25 to 34 age group, 1.2% in the 35 to 44 age group, 1.3% for those 45-54 years old, and 1.1% for those 55-64 years old. The proportion of persons with crash-related injuries in the past year was lowest for those 65 and older (0.6%).

Figure 3
Percent Injured in a Vehicle Crash Last Year by Age, 2000



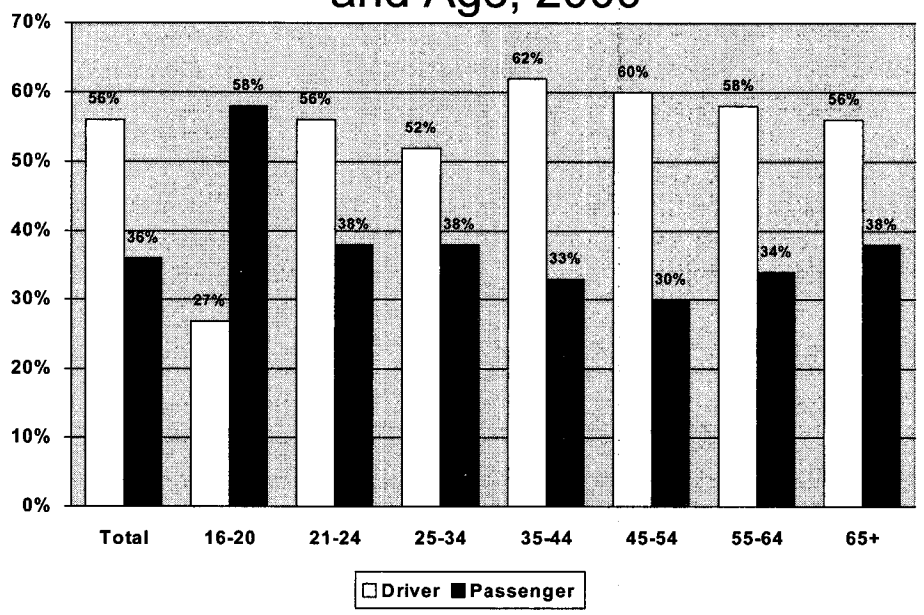
Qx: How long ago did [that/the most recent] accident occur?

Base: Total population 16 and over.

Unweighted *N=12,121*

More than half (56%) of those injured in (most recent)[2] vehicle crashes were drivers. The bulk of the remaining crash victims (36%) were passengers, but some were pedestrians (5%) or bicyclists (3%). The proportion who were drivers is lowest in the youngest group. Only about one in four (27%) of those injured in the 16 to 20 age group were drivers. This proportion rises to over half (56%) for those in the 21 to 24 age group and decreases to 52% for those in the 25-34 age group. It increases to 62% for the 35-44 age group and then declines by age group to 56% for those 65 and older (Figure 4).

Figure 4
Injured by Driver/Passenger Status and Age, 2000



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

Base: Ever injured in a vehicle accident.

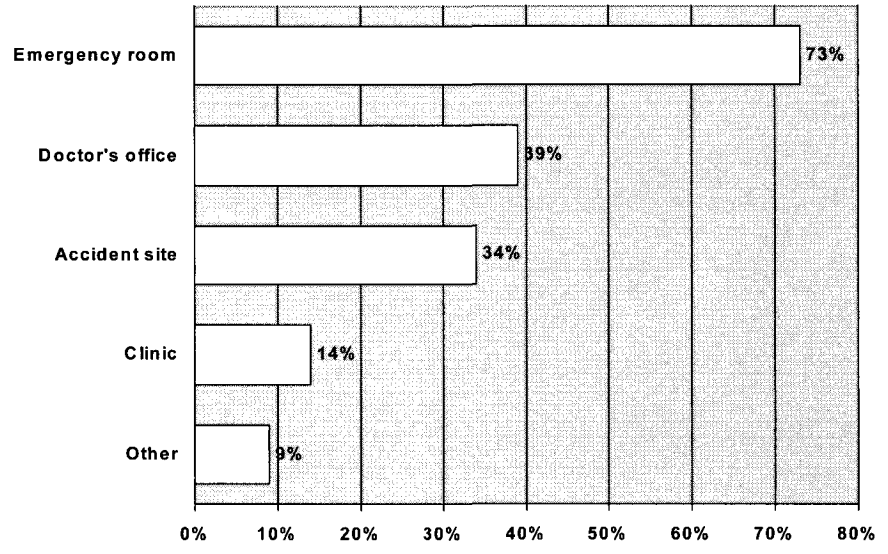
Unweighted *N=3,582*

[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) 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. Almost three in four (73%) were treated in a hospital emergency room. Additionally, two in five (39%) reported being treated in a doctor's office, about one third (34%) were treated at the crash site, 14% were treated at a clinic, and 9% mentioned some other location (Figure 5).

Figure 5
Where Treated for Crash-Related Injuries*, 2000



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

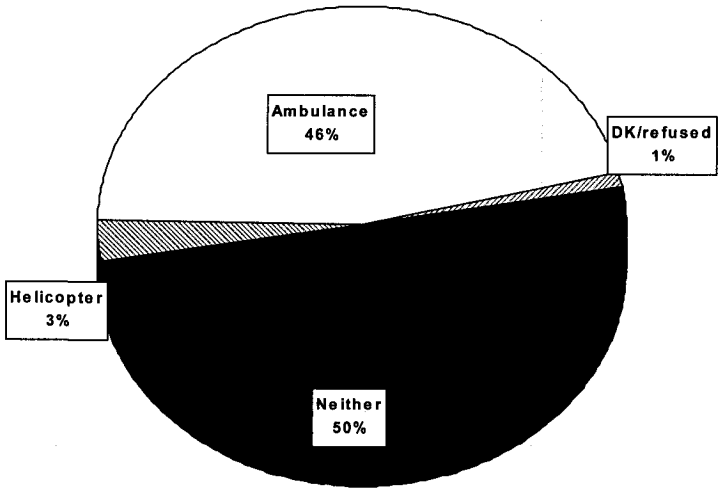
Base: Ever injured in a vehicle accident.

Unweighted *N=3,582*

* Total exceeds 100% since multiple responses were accepted.

Almost half (49%) of those injured in a vehicle crash were transported to another location for treatment by ambulance (46%) or helicopter (3%) on their most recent occasion. The remaining proportion of individuals who were injured in a vehicle crash were not transported by either of these modes (50%), or did not know or refused to answer (1%) (Figure 6).

Figure 6
How Transported from Crash Site, 2000



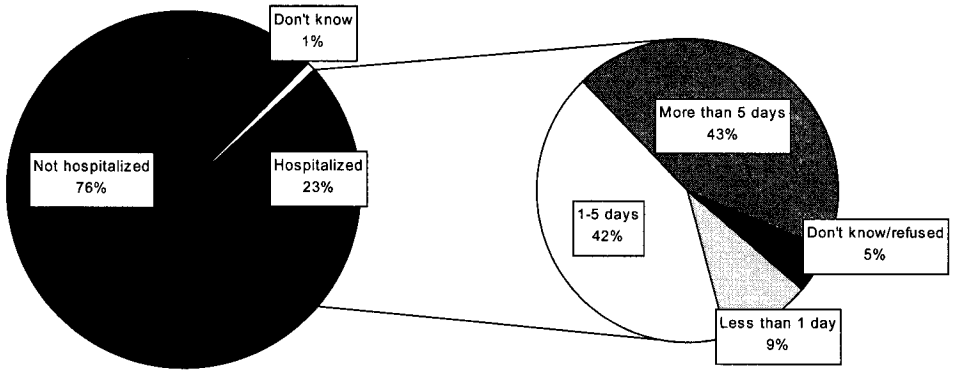
Qx: Were you transported from the accident scene by ambulance or helicopter?

Base: Ever been injured in a vehicle accident.

Unweighted *N=3,582*

More than one in five (23%) of those who were injured in a (most recent) vehicle crash were hospitalized (Figure 7). Nearly half of those hospitalized (43%) report being hospitalized for more than 5 days. This represents 10% of persons in injury related crashes.

Figure 7
Length of Hospitalization, 2000



Qx: Were you hospitalized?

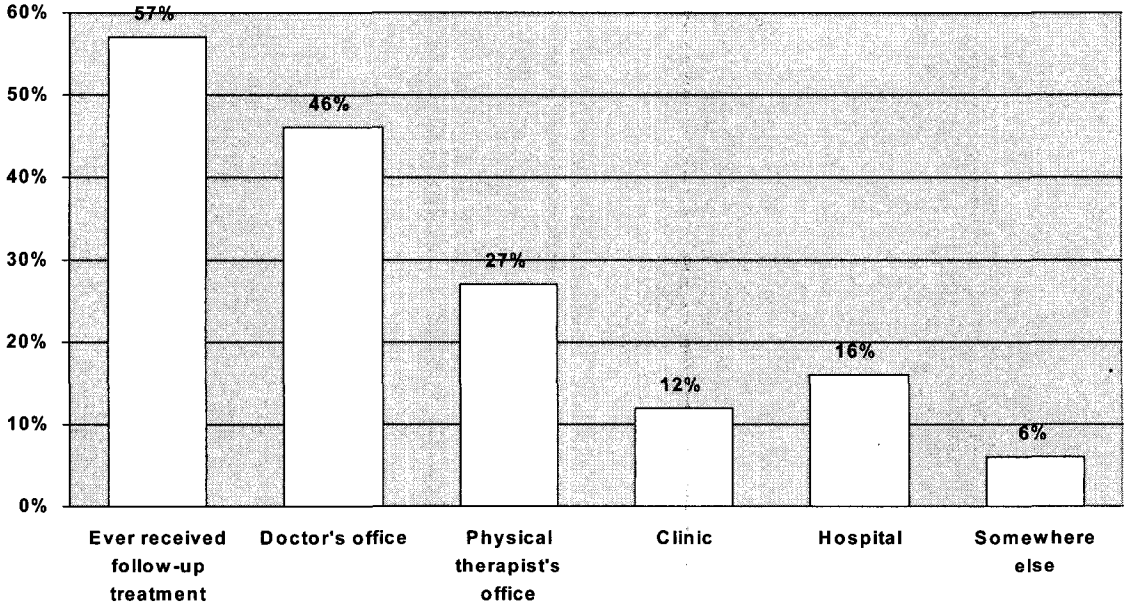
Qx: How long were you hospitalized?

Base: Ever been injured in a vehicle accident.

Unweighted *N=3,582*

More than half (57%) of those injured in a vehicle crash received follow-up treatment. Nearly half (46%) of those injured received follow-up treatment at a doctor's office, 27% at a physical therapist's office, 16% at a hospital, and 12% at a clinic (Figure 8).

Figure 8
Proportion Who Received Follow-up Treatment After Crash and Where Treatment was Given*, 2000



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... ?

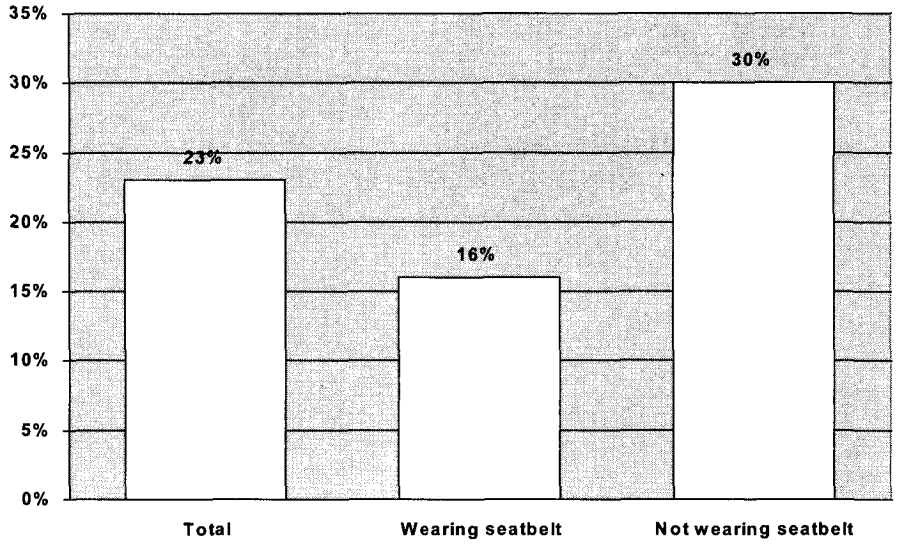
Base: Ever been injured in vehicle accident.

Unweighted *N=3,582*

* Total exceeds 100% since multiple responses were accepted.

There was little variation in the rate of hospitalization for crash injuries among population subgroups. However, use of seat belts at the time of the crash made a significant difference in hospitalization outcomes. One person in six (16%) who was wearing a seat belt at the time of the crash was hospitalized compared to three in ten (30%) who were not wearing a seat belt at the time of the crash (Figure 9).

Figure 9
Hospitalized by Seat Belt Use, 2000



Qx: Were you hospitalized?

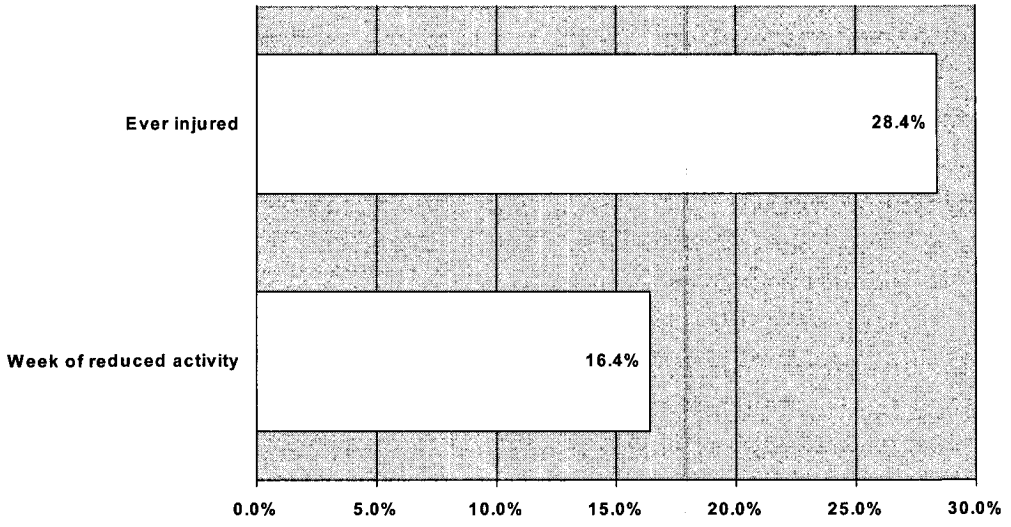
Qx:Were you wearing your seatbelt at the time of the accident?

Base: Ever been injured in a vehicle accident.

Unweighted *N=3,582*

As mentioned earlier (Figure 1, page 2), 28.4% of the total population was injured at some point in the past in a vehicle crash to the extent of needing medical attention. More than half of those ever injured, 16.4% of the total population, have at some time been unable to perform normal activities (work, school, household) for at least a week because of a crash (Figure 10).

Figure 10
Level of Disability Resulting from a Vehicle Crash, 2000



Qx: Have you ever been injured in a motor vehicle accident? 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?

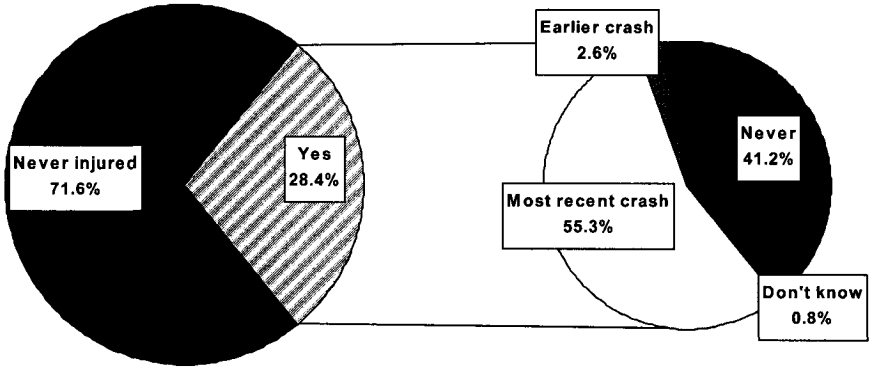
Qx: Have you ever received injuries from a vehicle accident that prevented you from performing any of your normal activities (work, school, household) for at least a week?

Base: Total population 16 and over.

Unweighted *N=12,121*

About one person in four (28.4%) has ever been injured in a motor vehicle crash to the point where they required medical attention. About three persons in five of those ever injured (58%) 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 (55%) or an earlier vehicle crash (3%) (Figure 11). Forty-one percent needed medical attention for their injuries, but were able to perform all normal activities within one week of their crashes.

Figure 11
Crash Injury Experience, 2000



Ever Injured in Crash **At least 1 Week of Reduced Activity**

Qx: Have you ever been injured in a 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: 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=12,121*

CONCERNS ABOUT STOPPING AT A CRASH

Just under half (46%) of the driving age public said they would have no concerns about stopping to help if they saw a crash where no one was at the scene to help (Table 2). The most commonly mentioned reasons for not stopping were concerns about personal safety (19%) and the perception of not knowing how to provide assistance (17%). The third most often mentioned concern is the fear of being sued for giving improper assistance (12%). Specifically referring to the possibility of causing further injury to the victim is cited by 6% as a concern about stopping to help.

Females were more concerned about stopping at the site of a crash than were males. Where slightly over half (52%) of males had no concern about stopping, only two-fifths (40%) of females had no concerns. Females were more concerned than males (20% vs. 14%) about not knowing what to do should they stop. They were also more concerned about issues of personal safety than were males (21% vs. 16%), including the possibility that the crash could be a ploy to lure and harm innocent people (5% vs. 2%). Females, however, were less concerned about the possibility of lawsuits resulting from offering improper assistance than were males (10% vs. 13%).

Table 2
Concerns About Stopping to Help at a Vehicle Crash by Gender, 2000

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)	*6,049*	*2,905*	*3,144*
No concern/would stop to help or call	**46%**	**52%**	**40%**
Assistance (net)	**17%**	**14%**	**20%**
Not knowing how to help/what to do	17%	14%	20%
People already there	*	*	*
Personal safety (net)	**19%**	**16%**	**21%**
Ploy to hurt innocent people	4%	2%	5%
Concern for my safety	12%	11%	14%
Fear of contracting HIV	1%	1%	1%
Ability to stop safely	1%	2%	1%
Depends on safety of location	*	*	1%
Safety of family, kids, other occupants	*	*	1%
Risk of fire, flames, or explosion	1%	1%	*
Depends on time of day	*	*	1%
Lawsuits/liability for improper assistance	**12%**	**13%**	**10%**
Victim's safety (net)	**9%**	**9%**	**9%**
Possibility of causing further injury	6%	6%	6%
Depends on seriousness of crash	1%	1%	1%
Extent of injuries	2%	2%	2%
Other	**2%**	**3%**	**2%**
Don't want to see dead, mangled bodies	1%	1%	1%
If I were rushed, late, in a hurry	*	*	*
Other	1%	2%	1%
Don't know/refuse	**7%**	**5%**	**8%**

* Less than 0.5%.

Overall, Blacks and Hispanics expressed fewer concerns about stopping at the site of a crash than did Whites (50%-49% vs. 45%) (Table 3). When it came to concerns about stopping, Whites and Hispanics were more concerned about being unable to offer the correct assistance (18% and 17%) than were Blacks (13%). While Whites were the most concerned about personal safety (20%), 16% of Blacks and 13% of Hispanics mentioned this concern. Whites (4%) and Blacks (6%) seemed more concerned about the possibility of being lured by a ploy to hurt innocent people than were Hispanics (2%). Whites also were more concerned about the possibility of a lawsuit arising out of improper assistance than Blacks or Hispanics (13% vs. 6%-5%).

Table 3
Concerns About Stopping to Help at a Vehicle Crash by Race & Ethnicity, 2000

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.

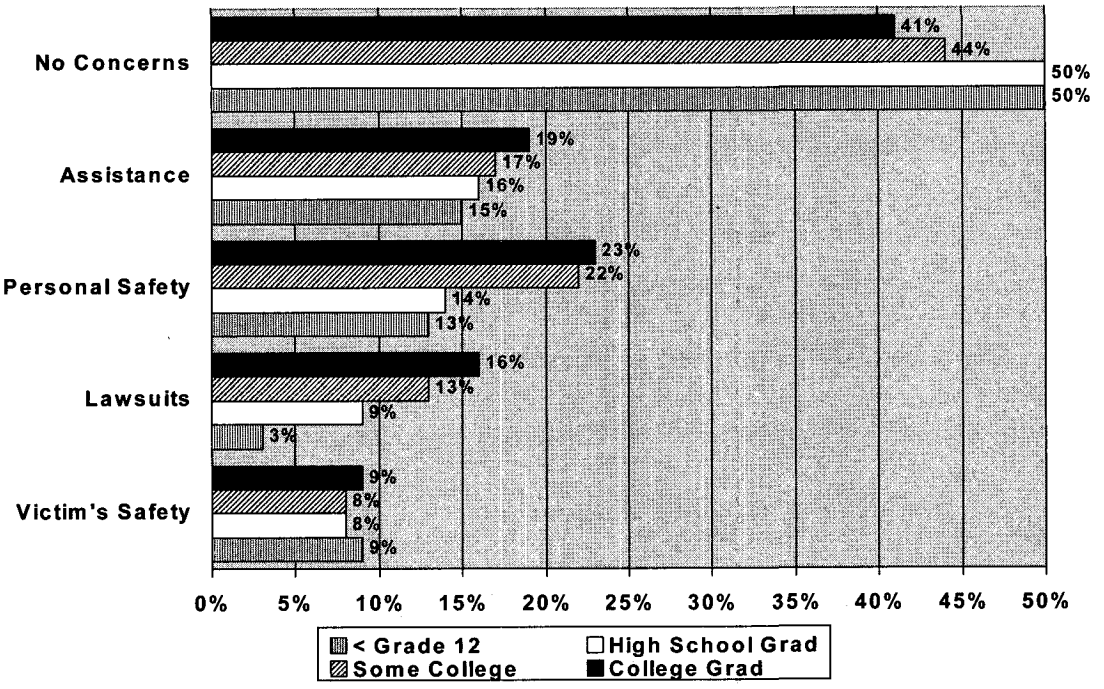
	White	Black	Hispanic
Unweighted N (total population)	*4,555*	*563*	*532*
No concern/would stop to help or call	**45%**	**50%**	**49%**
Assistance (net)	**18%**	**14%**	**18%**
Not knowing how to help/what to do	18%	13%	17%
People already there	*	1%	*
Personal safety (net)	**20%**	**16%**	**13%**
Ploy to hurt innocent people	4%	6%	2%
Concern for my safety	13%	10%	10%
Fear of contracting HIV	1%	*	*
Ability to stop safely	2%	1%	1%
Depends on safety of location	*	*	*
Safety of family, kids, other occupants	1%	*	*
Risk of fire, flames, or explosion	1%	*	-
Depends on time of day	*	-	1%
Lawsuits/liability for improper assistance	**13%**	**6%**	**5%**
Victim's safety (net)	**9%**	**7%**	**9%**
Possibility of causing further injury	7%	4%	5%
Depends on seriousness of crash	1%	1%	1%
Extent of injuries	1%	3%	2%
Other	**2%**	**2%**	**2%**
Don't want to see dead, mangled bodies	1%	*	1%
If I were rushed, late, in a hurry	*	*	-
Other	1%	1%	1%
Don't know/refuse	**6%**	**11%**	**10%**

*Less than 0.5%.

*- None.

Willingness to stop decreased as education increased starting with 50% of those who had not graduated from high school and 50% of those who graduated high school having no concerns, compared to 44% of those with some college, and 41% of college graduates. Concerns about personal safety (13%-23%), liability (3%-16%), and not knowing what to do (15%-19%) increased with education, while concerns about the victim's safety (8%-9%) were about the same by education (Figure 12).

Figure 12
Concerns About Stopping to Help at a Crash by Education, 2000



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.]

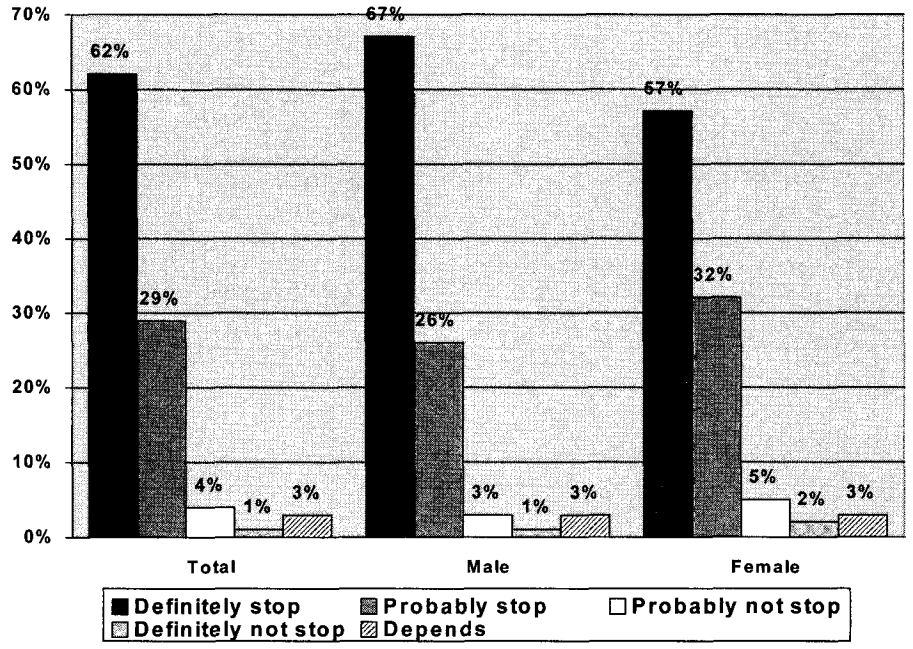
Base: Total population age 16 and over.

Unweighted *N=6,049*

After being asked about *concerns* they might have about stopping to help at a crash site, respondents were asked how likely they would be to stop (Figure 13). Overall, more than three in five (62%) felt 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 1% 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 (57%) were significantly less likely than males (67%) to respond that they would *definitely* stop (Figure 13). This is almost offset by the fact that females were more likely to say they *probably* would stop than males. (32% vs. 26%). Nonetheless, females were about twice as likely than males to say they probably (5% vs. 3%) or definitely (2% vs. 1%) would not stop.

Figure 13
Likelihood of Stopping by Gender, 2000



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

Base: Total population age 16 and over.

Unweighted *N=6,049*

Those who said something other than they "definitely would stop" were asked what would prevent them from stopping if they "saw an accident and no one was there to help". About one in ten (11%) said nothing would keep them from stopping (Table 4). The single most mentioned reason for not stopping was personal safety (20%). The second most mentioned reason was the fear of not knowing what to do (10%). Nearly one in ten said they would not stop because of fear of a ploy to hurt innocent people (9%) or if other people were already there (9%).

Males, more than females, gave reasons for not stopping that had an external focus: people are already there (12% male vs. 7% female), ability to stop safely (6% vs. 4%), if rushed (5% vs. 2%), and depends on the seriousness of the crash (5% vs. 2%). Conversely, females, more than males, gave reasons related to internal fears: fear of it being a ploy to hurt innocent people (7% male vs. 10% female), fear of not knowing how to help (7% vs. 13%), and concerns about safety of other occupants (1% vs. 3%).

Table 4
Reasons for Not Stopping, 2000

Qx: What would prevent you from stopping?

Base:Did not say "definitely would stop" if saw an accident and no one is there to help.

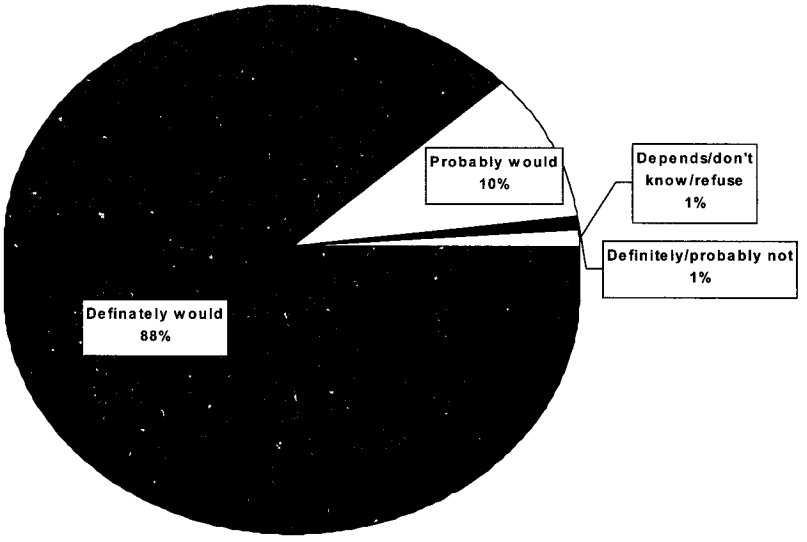
	Total	Male	Female
Unweighted N	*2,293*	*969*	*1,324*
Nothing to prevent stopping	**11%**	**13%**	**9%**
Mentioned something	**78%**	**75%**	**80%**
Fear of ploy to hurt innocent people	9%	7%	10%
Fear of not knowing how to help	10%	7%	13%
People already there	9%	12%	7%
Ability to stop safely	4%	6%	4%
Fear of lawsuits	6%	6%	6%
Personal safety	20%	17%	22%
Bad location	3%	2%	3%
If I were rushed, late, or in a hurry	3%	5%	2%
Seriousness of crash	4%	5%	2%
Fear of possibly causing further injury	2%	2%	2%
Depends on time of day, day or night	1%	*	2%
Safety of family, children, other occupants	2%	1%	3%
I would call for help	1%	1%	1%
Don't want to see dead, mangled bodies	*	*	1%
Risk of flame, fire, explosion	1%	1%	*
Extent of injuries	1%	1%	1%
Fear of HIV/AIDS virus from blood	-	-	-
Other	2%	2%	2%
Don't know/refuse	**11%**	**11%**	**11%**

* Less than 0.5%. - None.

TELEPHONING FOR HELP AT AN INJURY CRASH

Respondents also were 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 88% saying they definitely would call and 10% saying they probably would call (Figure 14).

Figure 14
Likelihood of Calling to Get Help for a Crash, 2000



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 on scene.) Do you think that you...?

Base: Total population age 16 and over.

Unweighted *N=6,049*

Respondents who did not say they "definitely would call" were asked what, if anything, would prevent them from calling. The most common reason given, mentioned by 28%, involved the availability of a phone (Table 5). The second most commonly mentioned reason (8%) was that they thought someone had already called. Five percent were associated with safety issues, primarily that the next available phone may be in an unsafe area (3%), or it may be hazardous to stop (1%). Other miscellaneous reasons were given including assistance already there (3%), in a hurry (3%), or it depends on the kind of accident (3%).

As shown in Table 5, females were more likely than males to mention the availability of a phone as a barrier to calling (30% female vs. 26% male) but were equally as likely to mention safety concerns (5% for both).

Table 5
Reasons for Not Making a Call, 2000

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	*683*	*383*	*300*
Nothing would prevent me	**34%**	**33%**	**36%**
Telephone availability (net)	**28%**	**26%**	**30%**
Availability, finding, access	23%	23%	24%
Don't have car or cellular phone	3%	3%	3%
Other availability	3%	2%	4%
Safety concerns (net)	**5%**	**5%**	**5%**
Unsafe area	3%	3%	3%
Hazardous situation	1%	1%	2%
Other safety	1%	*	1%
Miscellaneous (net)	**22%**	**24%**	**21%**
Assistance already there	3%	3%	3%
In a hurry	3%	3%	1%
Personal emergency	1%	1%	1%
Depends on the accident	3%	2%	3%
Traffic	1%	2%	*
Thought someone already called	8%	8%	7%
Other miscellaneous	5%	4%	5%
Not sure/refused	**13%**	**15%**	**11%**

*Less than 0.5%.

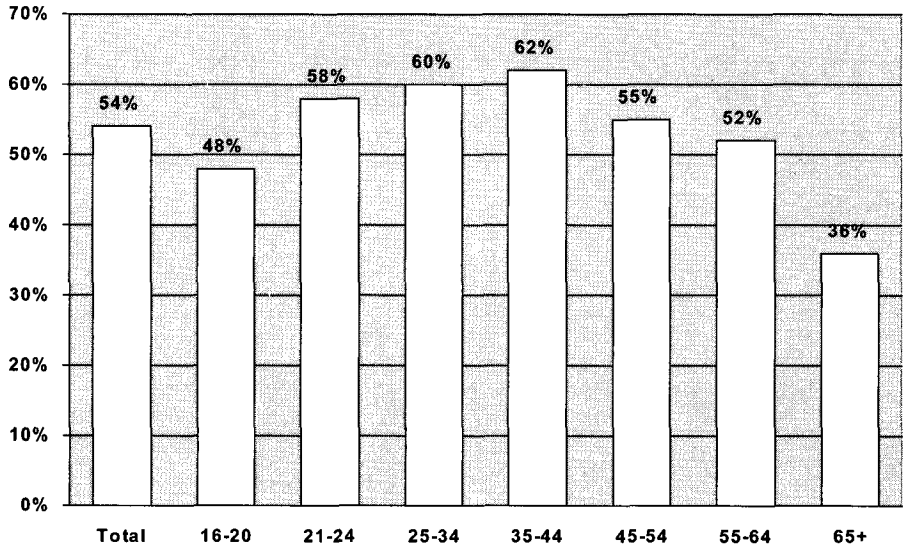
*- None.

AVAILABILITY AND USE OF CELLULAR PHONES

The availability of car phones or cellular 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 half of persons age 16 or over (54%) reported that they usually have a car phone or carry a cellular phone in their vehicle when they drive (Figure 15).

While there was little difference in the proportion of males (53%) and females (54%) who reported having these types of phones in their vehicles, availability varied by age. A phone was usually in the vehicle of nearly one half (48%) of those 16 to 20. This increased to 58% for those 21-24, 60% of 25-34 year olds, and 62% of those ages 35 to 44. The proportion of drivers with car phones then declines by age to 55% for those ages 45-54, to 52% of those ages 55 to 64, and to 36% for those 65 and over.

Figure 15
Have a Car or Cellular Phone by Age, 2000



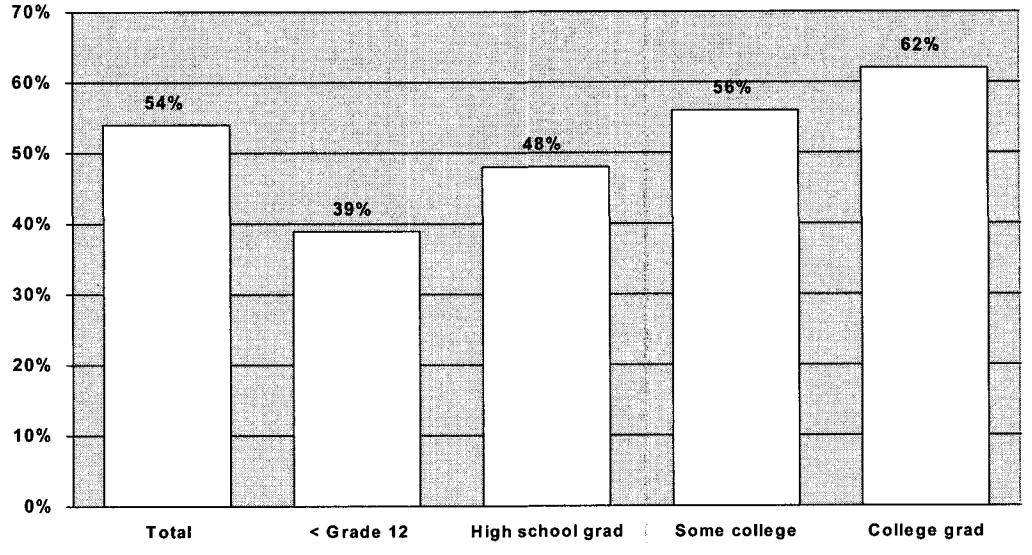
Qx: When you drive a motor vehicle, do you usually have a wireless phone of some type in the vehicle with you? This could be a car phone, a cellular phone, a PCS phone, or a satellite phone?

Base: Drivers.

Unweighted *N=5,564*

The availability of a car or cellular phone was directly related to educational level. Thirty-nine percent of those who had not graduated from high school reported having a car phone, increasing to 48% of those who graduated from high school, to 56% of those with some college, and to 62% of those who have graduated college (see Figure 16).

Figure 16
Have a Car or Cellular Phone by Education, 2000



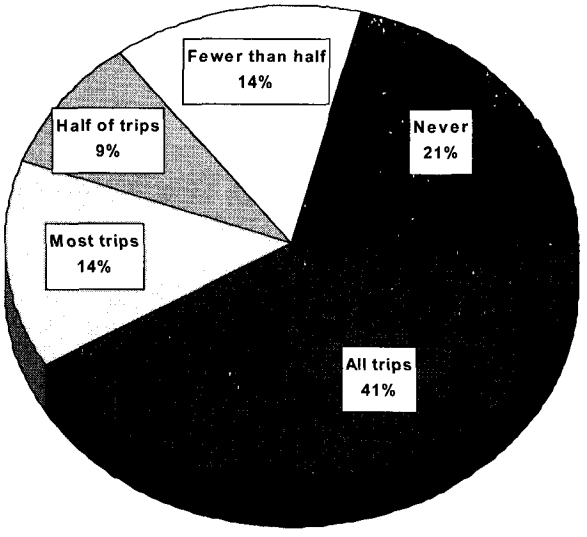
Qx: When you drive a motor vehicle, do you usually have a wireless phone of some type in the vehicle with you? This could be a car phone, a cellular phone, a PCS phone, or a satellite phone?

Base: Drivers.

Unweighted *N=5,564*

Of those who said they usually have a car or cellular phone in their vehicle, more than half (55%) said that they keep the phone turned on so that they can receive calls during all trips (41%) or most trips (14%). Another 9% said they keep their phone turned on during half of their trips, and 14% said they keep their phone turned on during fewer than half of their trips. One in five (21%) of those individuals who usually have a car or cellular phone in their vehicle said that they never keep the phone turned on so that they can receive calls (Figure 17).

Figure 17
How Often Cell Phone is on While Driving, 2000



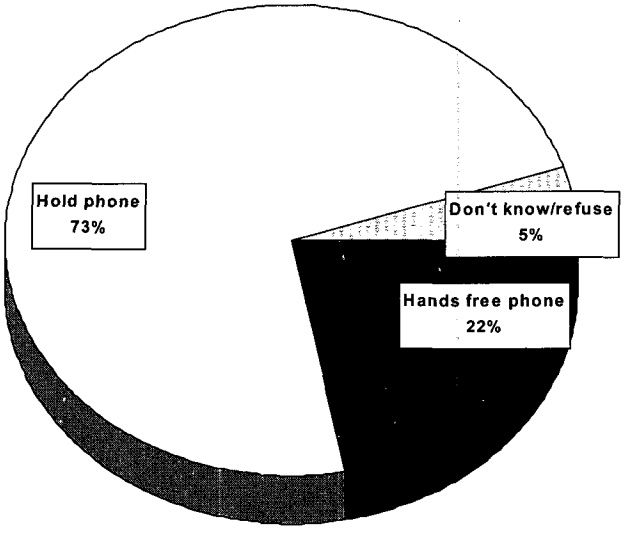
Qx: When you drive, how often would you say you keep the phone turned on so that you can receive calls? Would you say that you keep the phone turned on during all trips, most trips, about half your trips, fewer than half your trips or never?

Base: Usually have a wireless phone in vehicle.

Unweighted *N=3,206*

Drivers who usually have a car or cellular phone in their vehicle 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. Nearly three-quarters (73%) said they tend to hold the phone with their hand. Twenty-two percent tend to use the phone hands free.

Figure 17a
Holds Phone with Hand or Uses Phone Hands Free, 2000



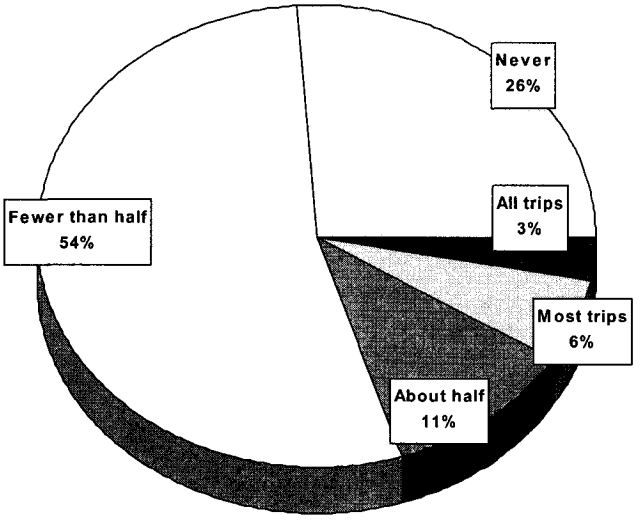
Qx:Do you tend to hold the phone with your hand when you use it, or do you tend to use the phone hands free?

Base: Usually have a wireless phone in vehicle.

Unweighted *N=3,206*

One in ten drivers who usually have a car or cellular phone in their vehicle talk on the phone while driving during all (3%) or most (6%) of their trips. Another 11% said they talk on the phone during about half of their trips. More than half (54%) talk on the phone during fewer than half of their trips. In total, 73% reported using their phone, at least on occasion, while driving. Twenty-six percent said they never talk on the phone while driving.

Figure 17b
How Often Talk on Phone While Driving, 2000



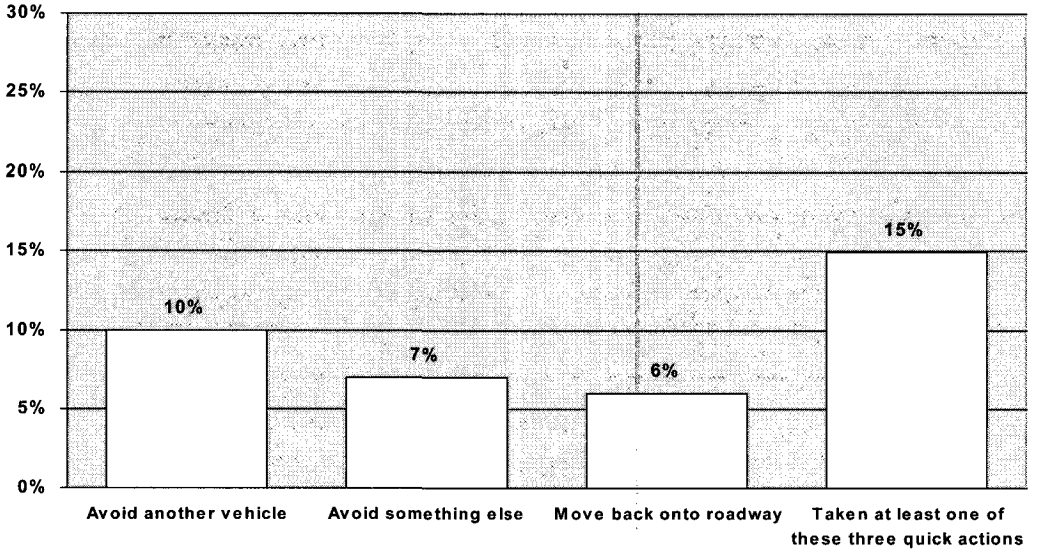
Qx: How often do you talk on the phone when you are driving? Would you say you talk on the phone while driving during...?

Base: Usually have a wireless phone in vehicle.

Unweighted *N=3,206*

Drivers who said they usually have a car or cellular phone 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. One in ten (10%) of those asked said they had to take quick action to avoid another vehicle in the past 12 months. Seven percent had to take quick action to avoid something else and 6% said they had to take quick action to move back onto the roadway in the past 12 months (Figure 18). One in seven drivers who usually have a car or cellular phone had to take at least one of these quick actions in a driving situation while talking on the phone in the past 12 months (15%).

Figure 18
Ever Had to Take Quick Action When on Phone While Driving, 2000



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...?

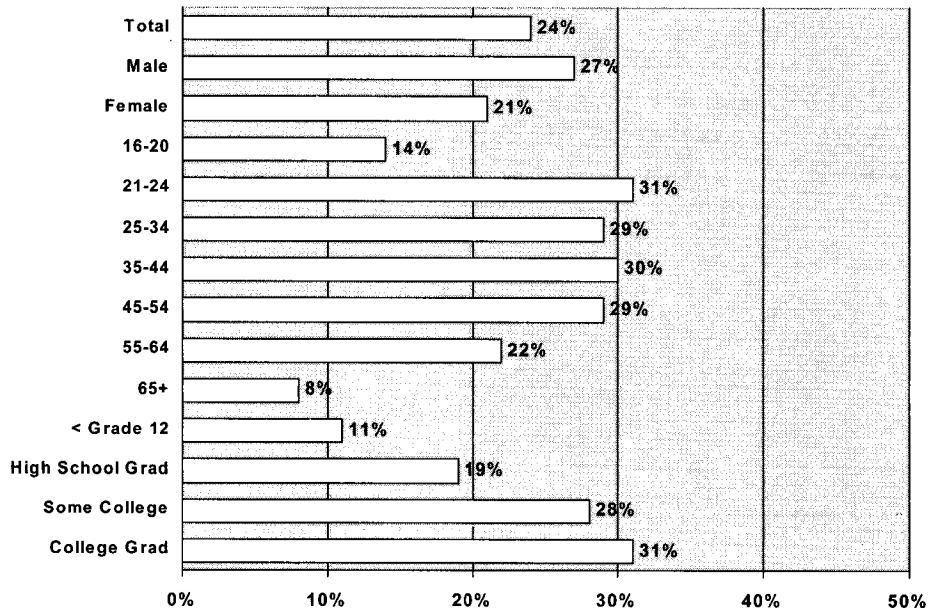
Base: Usually have a wireless phone in vehicle.

Unweighted *N=3,206*

All drivers were asked if they had ever used a car phone to report an emergency while they were driving or riding in a motor vehicle. Nearly one-quarter (24%) answered "Yes." Even though males and females had car or cellular phones available in approximately the same proportions, they had called to report an emergency from the road at different rates. More than one in four (27%) males have reported an emergency from the road compared to about one in five (21%) females. There was no clear pattern of reporting road emergencies by age, except that it is less commonly done by 16-20 year olds (14%) and those 65 or older (8%).

There was a trend, however, showing that calling about a road emergency increased with education. Eleven percent of those who had not graduated high school had phoned in a road emergency. This increased to 19% and 28% for those who graduated high school or had some college, respectively, and to 31% for those who had graduated from college (Figure 19).

Figure 19
Used a Car/Cellular Phone to Report an Emergency by Gender, Age & Education, 2000



Qx: Have you ever used a car phone or cellular phone to report an emergency while you were driving or riding in a motor vehicle?
Base: Drivers.
Unweighted *N=5,564*

Those individuals who had used their phones to call in an emergency were asked the specific nature of the call. More than half (55%) made a call to report a vehicle crash. The next most common emergencies reported were DWI or suspected drunk driving (8%) and disabled vehicles (8%). Other emergency situations reported by car or cellular phone were mentioned by 4% or less (Table 6).

Table 6
Kind of Emergency Reported, 2000

Qx: What kind of emergency did you call about?

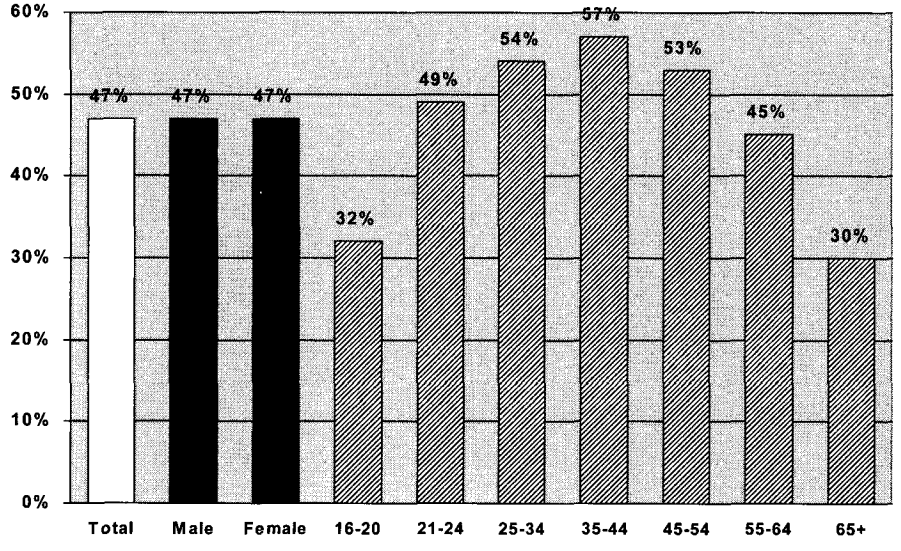
Base: Drivers who used a car phone or cellular phone in car to report an emergency.

Unweighted N	*1,501*
Car or automobile accident	55%
Out of control, weaving vehicle	4%
Disabled or stalled car or automobile	8%
DWI or suspected drunk driver	8%
Car or automobile fire	4%
Person laying in the street	1%
Fire (unsp.)	3%
Person became ill or sick	1%
Hit and run	1%
Animal on roadway	2%
Other	18%
Don't know	1%

KNOWLEDGE OF INITIALS "EMS"

Nearly half (47%) of the population age 16 and older know that the initials "EMS" stand for "emergency medical services/systems" (Figure 20). Males and females had the same awareness of the meaning of "EMS" (47%). Knowledge of the meaning of these initials by age shows an "arch-shaped" relationship, with "EMS" being recognized by 32% of the 16 to 20 age group, increasing to 49% for the 21-24 group, 54% for the 25-34 group, and peaking at 57% for the 35-44 group before declining to 53% for the 45 to 54 group, 45% for the 55 to 64 group and bottoming out at 30% for those 65 and over.

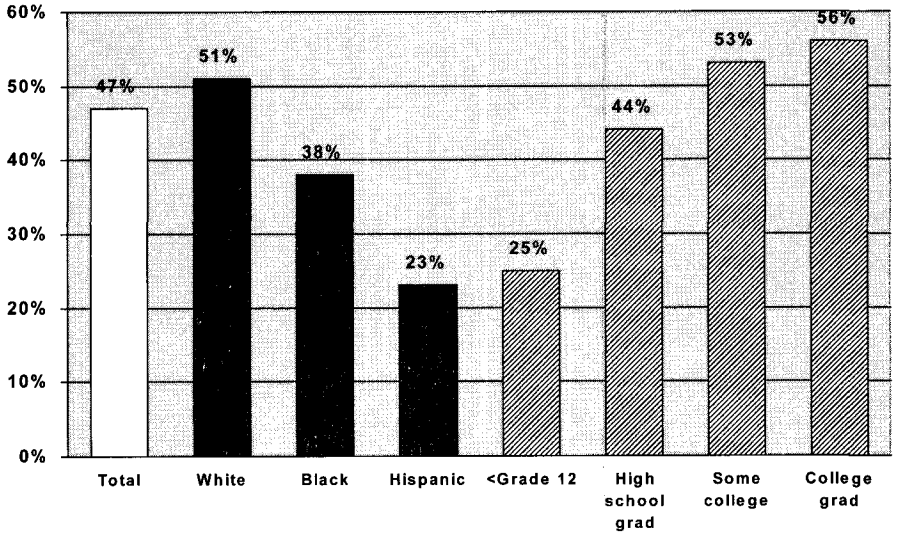
Figure 20
Know What the Initials "EMS" Stand For by Gender and Age, 2000



Qx: Can you tell me what the initials "EMS" stand for?
Base: Total population 16 and over.
Unweighted *N=6,049*

Slightly over half (51%) of White respondents knew what "EMS" stands for compared to almost two-fifths (38%) of Blacks and less than one-fourth (23%) of Hispanics (Figure 21). Knowing the meaning of "EMS" increases with education. One-quarter (25%) of those who had not graduated high school knew the meaning of the term, increasing to more than two-fifths (44%) of high school graduates, and over half of those with some college (53%) or a college degree (56%).

Figure 21
Know What the Initials "EMS" Stand For by Race/Ethnicity and Education, 2000



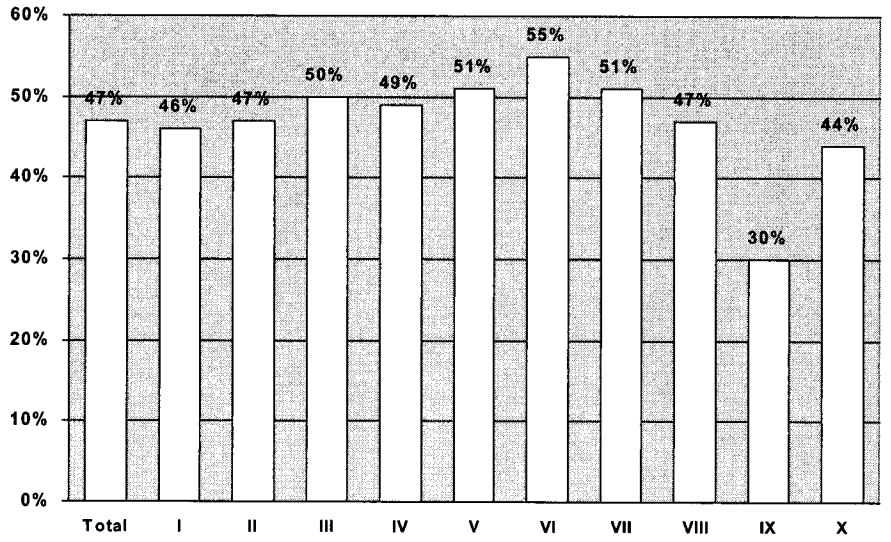
Qx: Can you tell me what the initials "EMS" stand for?

Base: Total population 16 and over.

Unweighted *N=6,049*

One of the more interesting findings concerning public knowledge of the initials "EMS" comes from an analysis by NHTSA region[3] (Figure 22). NHTSA segments the states into ten regions for purposes of programmatic outreach (see list of regions below). In seven out of ten regions, knowledge of EMS was about the same (46%-51%). Knowledge of EMS was somewhat higher than the norm in Region VI (55%). However, knowledge of EMS was strikingly low in Region IX (30%).

Figure 22
Know What the Initials "EMS" Stand For by NHTSA Region, 2000



Qx: Can you tell me what the initials "EMS" stand for?
Base: Total population 16 and over.
Unweighted *N=6,049*

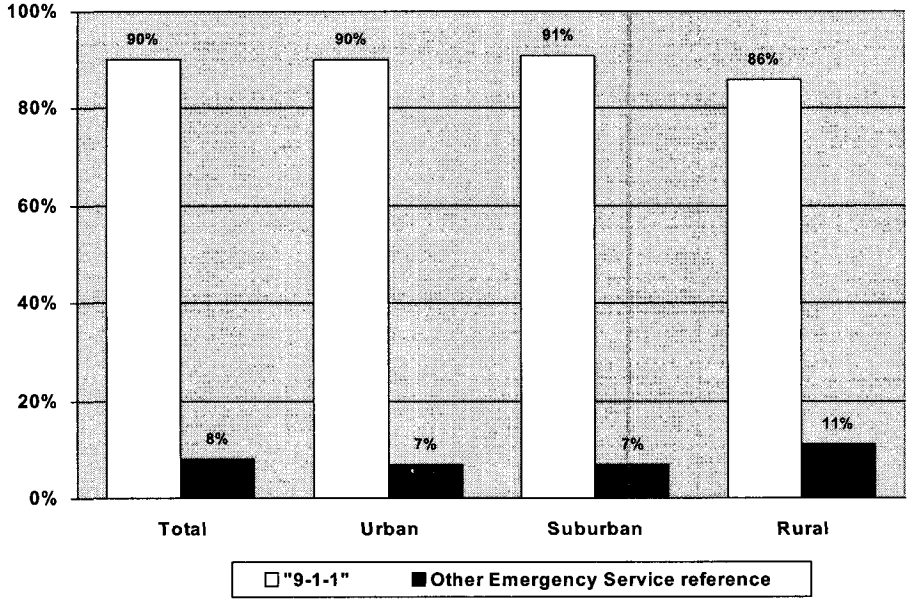
[3] **National Highway Traffic Safety Administration Regions**

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

TELEPHONING FOR HELP IN A MEDICAL EMERGENCY

The survey asked respondents who they would call first in the event of a medical emergency. Nine out of ten (90%) would call "9-1-1" (Figure 23). An additional 8% mentioned some other emergency response group — emergency medical services (3%), police (2%), hospital (1%), ambulance service (1%), fire department (1%), and rescue squad (<0.5%).

Figure 23
First Call in a Medical Emergency by Community Type, 2000



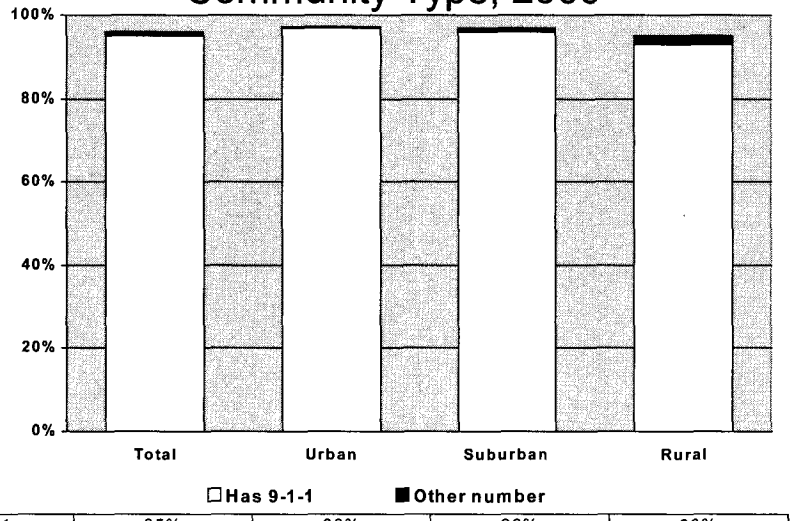
Qx: If someone was experiencing a medical emergency and you needed to get help for that person, who would you call first?

Base: Total population age 16 and over.

Unweighted *N=6,049*

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 6% of the total population acknowledged having 9-1-1, while another 1% gave some other number. Combined with the 90% 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 93% in rural areas to 96% in urban and suburban areas. Including all emergency numbers, 96% of the public reported having a specific telephone number to call for medical emergencies (Figure 24).

Figure 24
Has 9-1-1 or Special Emergency Number by Community Type, 2000



	Total	Urban	Suburban	Rural
Has 9-1-1	95%	96%	96%	93%
Other number	1%	*	*	2%

* Less than 0.5%

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?

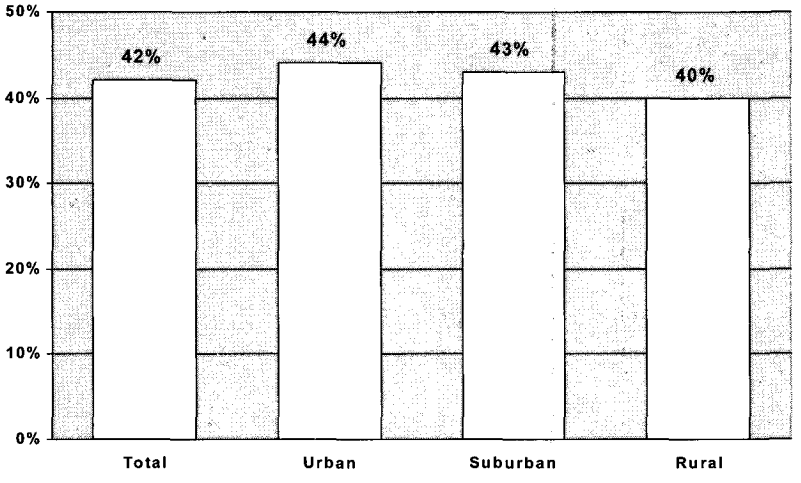
Base: Total population age 16 and over.

Unweighted *N=6,049*

All respondents were asked whether they had ever called an emergency number for help. Two out of five (42%) persons age 16 or older have called 9-1-1 or some other emergency number for help at some time in the past (Figure 25). Unlike the earlier findings on car phone reporting, the percentage using an emergency number was somewhat higher for females (46%) than for males (38%).

More than two in five residents of urban (44%) or suburban (43%) communities had called an emergency number for help. Slightly fewer (40%) residents in rural communities had called emergency services in the past (Figure 25).

Figure 25
Ever Called Emergency Phone Number by Community Type, 2000



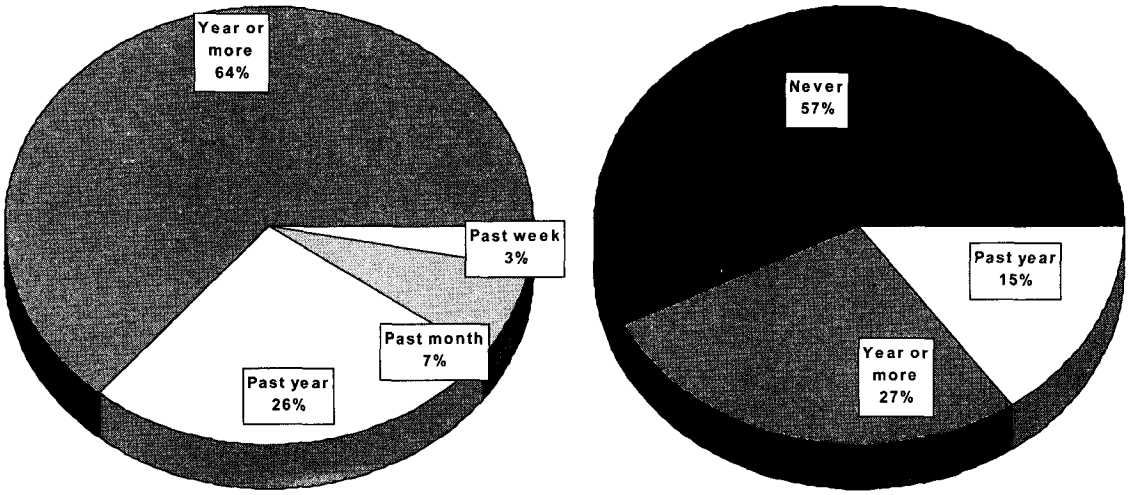
Qx: Have you personally ever called 9-1-1 or another emergency number for help?

Base: Total population age 16 and over.

Unweighted *N=6,049*

Those individuals who had ever called "9-1-1" or another emergency response number were asked how long ago the most recent call occurred. More than one in three calls took place within the last year (Figure 26). This includes calls that took place in the last week (3%), the last month (7%), or within the last year (26%). More than three calls in five (64%) were made 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 26
How Long Ago Most Recent Emergency Call Took Place, 2000



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

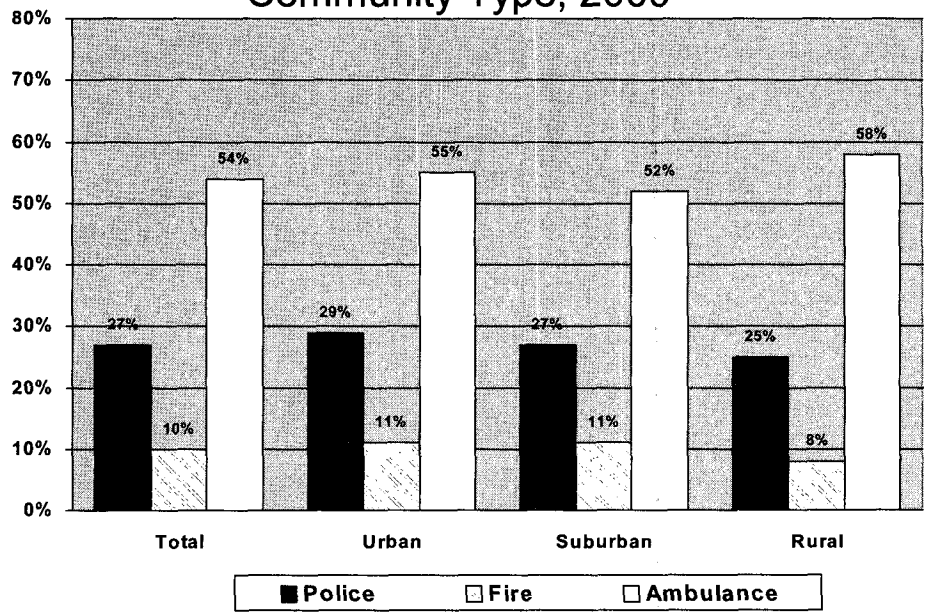
Base: Have ever called 9-1-1 or other emergency number, and total population.

Unweighted $N_{(Ever\ called)}$=2,627; $N_{(Total\ population)}$=6,049

Those who made emergency calls were also asked whom they called on the most recent occasion. The majority (54%) had called for an ambulance (Figure 27). Nearly three in ten (27%) called the police and one in ten (10%) called the fire department.

The proportion calling the fire department is highest in urban and suburban populations at 11% for both. The proportion decreased to 8% in rural populations. The proportion placing an emergency call to the police was highest in urban communities (29%), declined slightly in suburban communities (27%), and was lowest in rural communities (25%). However, calling for an ambulance was lowest in the suburban areas (52%), higher in the urban areas (55%), and highest in rural areas (58%).

Figure 27
Emergency Service Called by Community Type, 2000



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

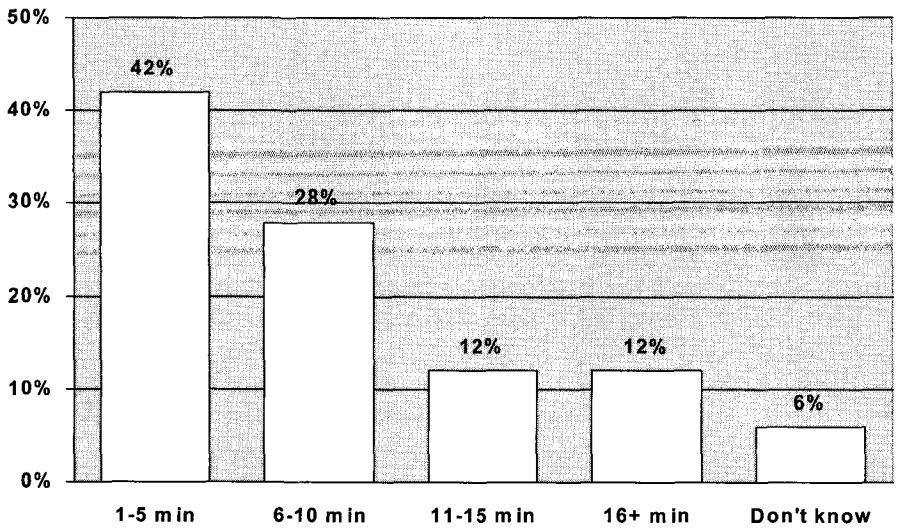
Base: Have called 9-1-1 or other emergency number.

Unweighted *N=2,627*

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. Two in five (42%) said they expected an ambulance to arrive within five minutes of being called, seven in ten (70%) expected an ambulance to arrive within 10 minutes, and four in five (81%) expected it to arrive within 15 minutes (Figure 28).

Figure 28
Expected Time for Ambulance to Arrive, 2000



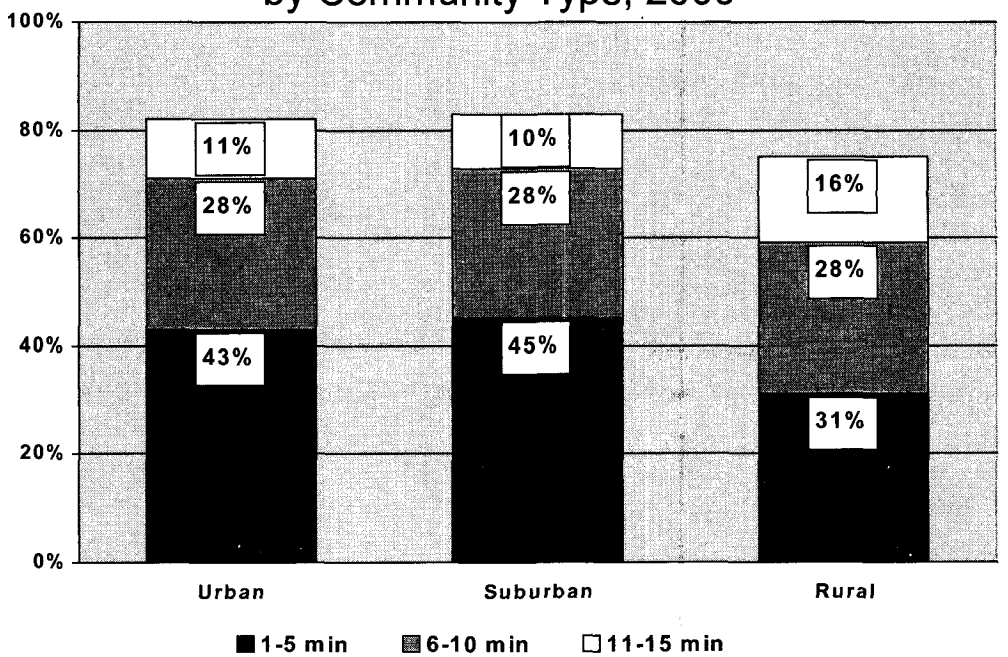
Qx: If there was a medical emergency in your neighborhood and you called an ambulance, how long do you think it would take for the ambulance to arrive?

Base: Total population 16 and over.

Unweighted *N=6,049*

Expectations vary widely by community type (Figure 29). Almost half (45%) of residents in suburban communities expected the ambulance to arrive within 5 minutes of being called and 73% expected it to arrive within 10 minutes. People who live in urban areas had about the same expectations for a five minute arrival (43%) or for a 10 minute arrival (71%). Rural residents had the lowest expectation with 31% expecting a five minute arrival and 59% expecting a 10 minute arrival.

Figure 29
Expected Time for Ambulance to Arrive
by Community Type, 2000



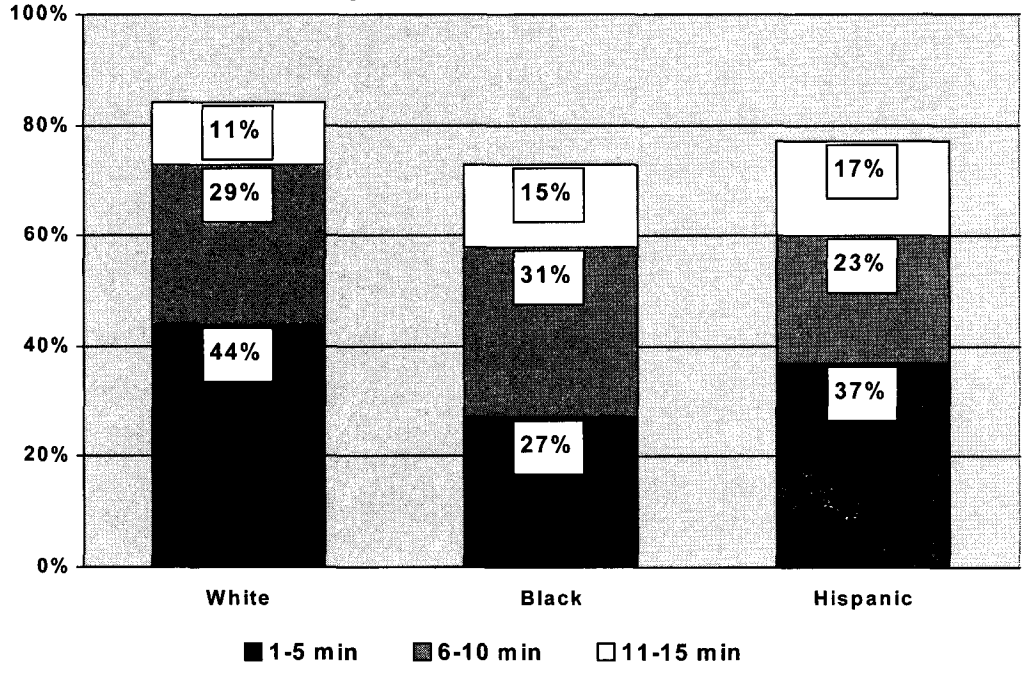
Qx: If there was a medical emergency in your neighborhood and you called an ambulance, how long do you think it would take for the ambulance to arrive?

Base: Total population 16 and over.

Unweighted *N=6,049*

Expectations about ambulance response time also varied considerably by race and ethnicity (Figure 30). More than two out of five (44%) Whites expected the ambulance to arrive within five minutes of being called and 72% expected it to arrive within 10 minutes. A little less than two out of five (37%) Hispanics expected the ambulance to arrive within five minutes and three out of five (60%) expected it to arrive within 10 minutes. Blacks had the lowest expectation with only 27% expecting arrival within five minutes and 58% within 10 minutes. Blacks (18%) were more likely than Whites (11%) or Hispanics (14%) to expect arrival to take more than 15 minutes.

Figure 30
Expected Time for Ambulance to Arrive by Race/Ethnicity, 2000



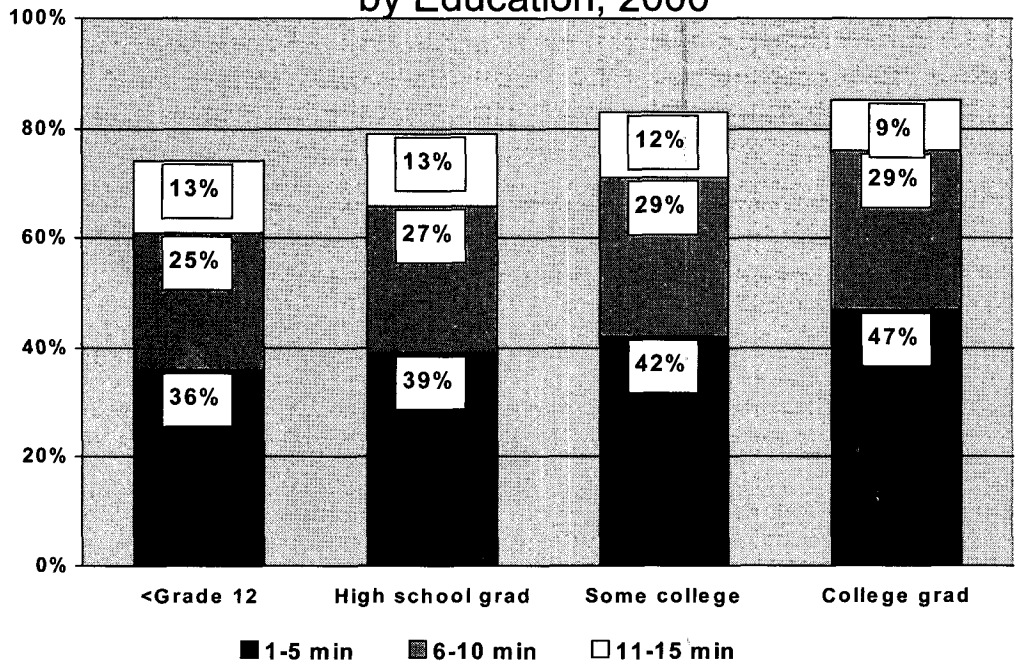
Qx: If there was a medical emergency in your neighborhood and you called an ambulance, how long do you think it would take for the ambulance to arrive?

Base: Total population 16 and over.

Unweighted *N=6,049*

Expectations about ambulance response time tended to increase with education (Figure 31). Those who had not graduated high school had the lowest expectations of an ambulance to arrive within five minutes (36%), while 39% - 47% of the other three groups had expectations in the five-minute range. The proportions expecting the ambulance to arrive within 10 minutes increased from 60% for those who had not completed high school, to 66% for high school graduates, 71% for those with some college, and 76% for college graduates.

Figure 31
Expected Time for Ambulance to Arrive by Education, 2000



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?

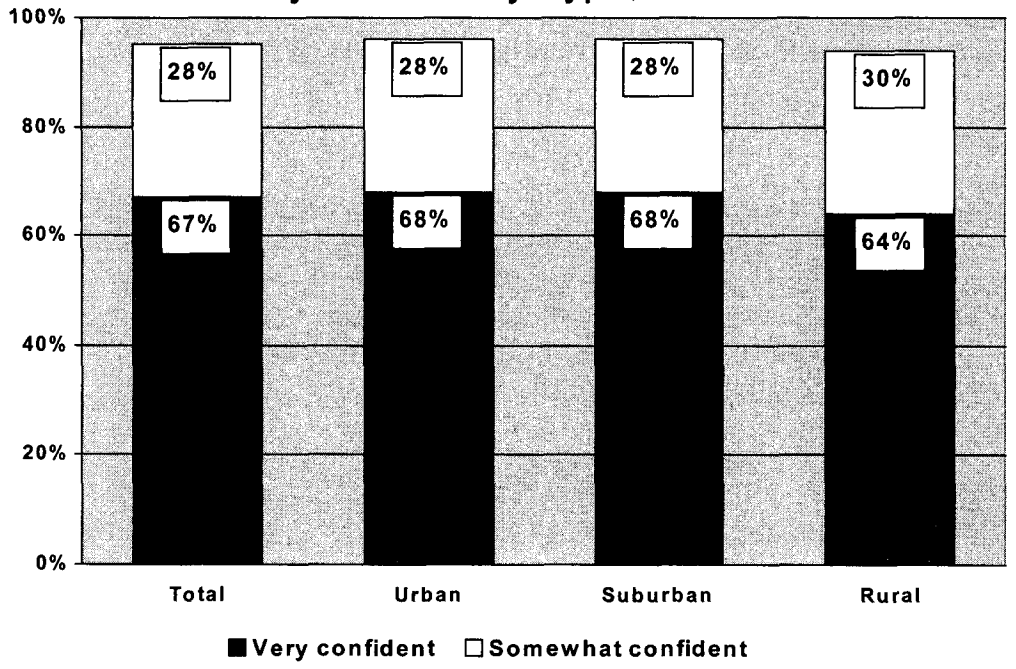
Base: Total population 16 and over.

Unweighted *N=6,049*

CONFIDENCE IN EMERGENCY WORKERS

Two thirds (67%) of the driving age public were "very confident" that ambulance or other emergency workers would know what to do and an additional 28% were "somewhat confident" (Figure 32). Confidence in emergency workers was about the same in suburban and urban (96%) and slightly lower in rural communities (94%).

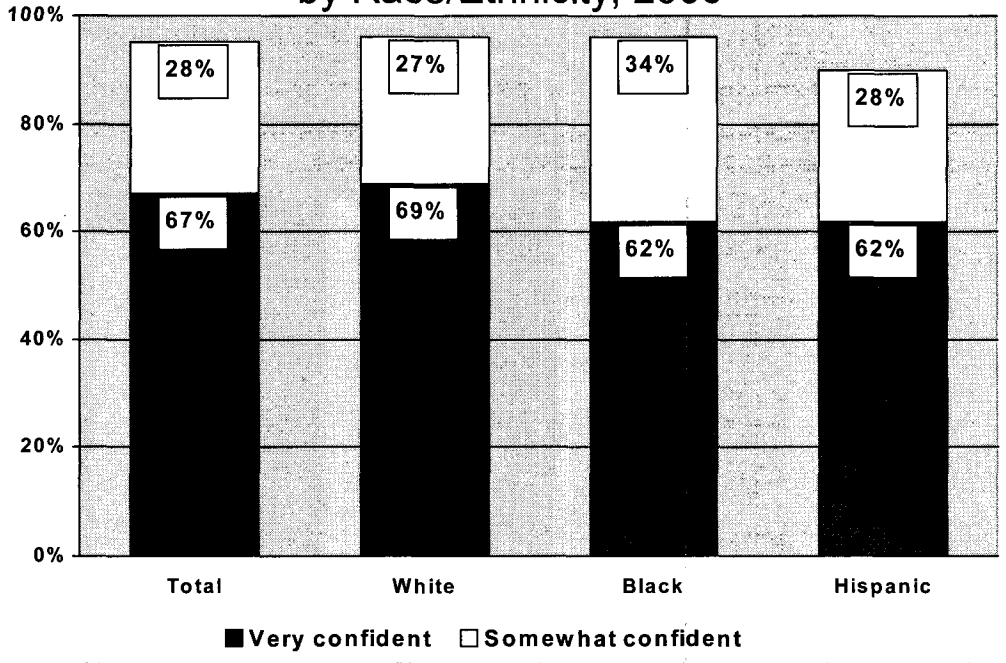
Figure 32
Confidence in Emergency Workers
by Community Type, 2000



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=6,049*

There are racial and ethnic differences in public confidence in emergency workers (Figure 33). More than two thirds (69%) of Whites were "very confident" that emergency workers would know what to do. Somewhat fewer Hispanics (62%) and Blacks (62%) gave the same rating. However, when the "somewhat confident" ratings are added, Whites and Blacks had equal confidence ratings of emergency workers (96%), but confidence among Hispanics continued to lag (91%).

Figure 33
Confidence in Emergency Workers
by Race/Ethnicity, 2000

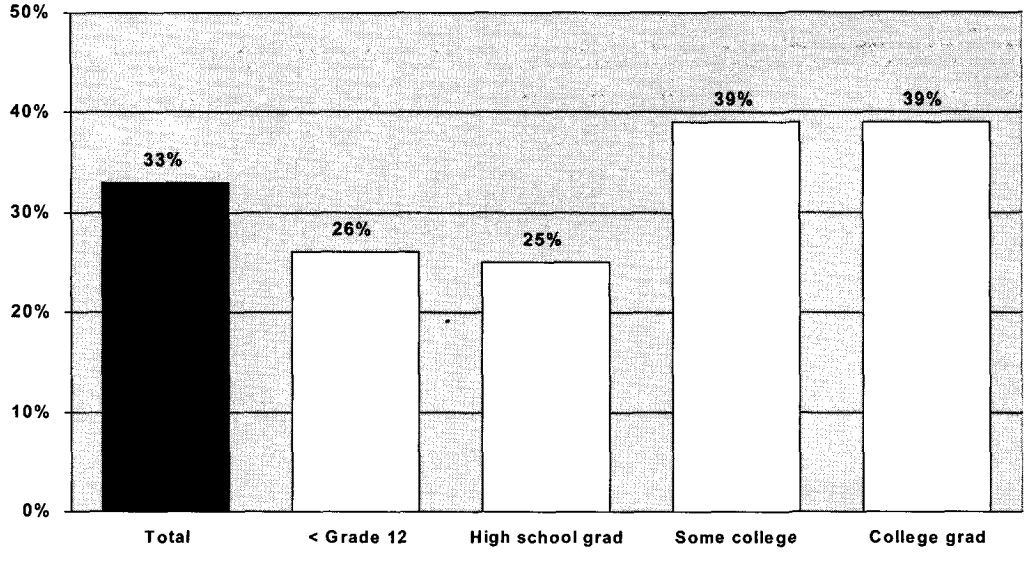


Qx: Regardless of the type of medical emergency, how confident are you that the ambulance or other emergency workers would know what to do?
Base: Total population 16 and over.
Unweighted *N=6,049*

INTEREST IN TRAINING TO ASSIST CRASH VICTIMS

One in three (33%) persons of driving age had taken some kind of an emergency or first aid course in the last five years (Figure 34). 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. 26%).

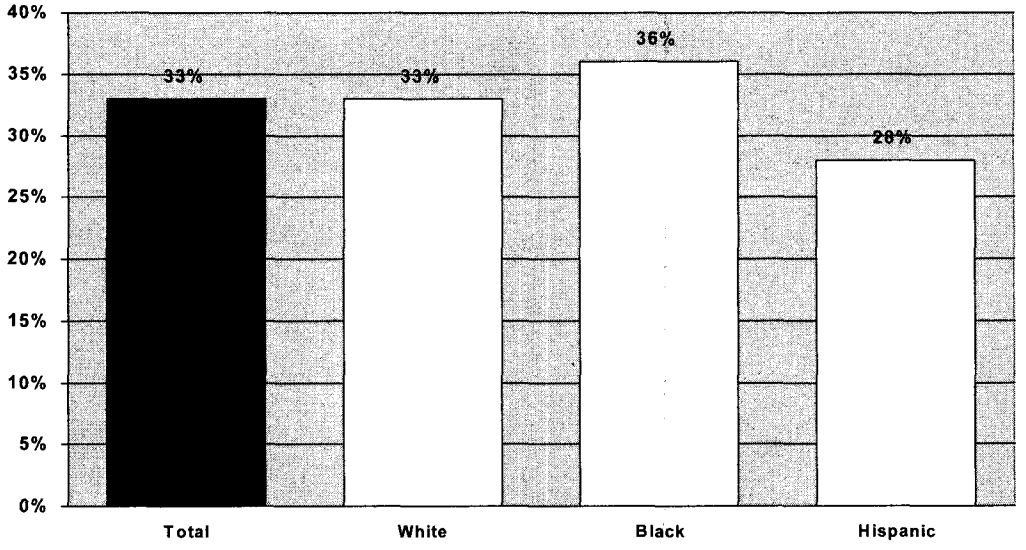
Figure 34
First Aid or Emergency Training in Past 5 Years
by Education, 2000



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=6,049*

One in three (33%) Whites had taken an emergency or first aid course in the last five years (Figure 35). The proportion was slightly higher for Blacks where more than one-third (36%) had taken a course of this type. However, the proportion was noticeably lower for Hispanics where only 28% had taken some sort of emergency care course in the last five years.

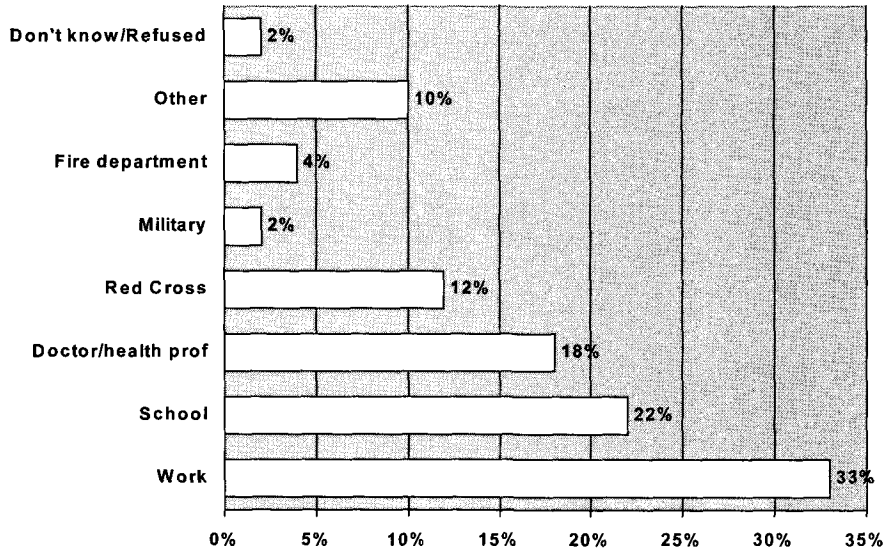
Figure 35
First Aid or Emergency Training in Past 5 Years by Race/Ethnicity, 2000



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=6,049*

Those who had taken first aid or emergency training in the past five years were asked who provided the course (Figure 36). One-third (33%) received training through work. One in five (22%) received their training through school (for those under 21 the proportion who received training through school was 64%). An additional 18% were trained by a doctor or other health professional and 12% were trained by the Red Cross.

Figure 36
Who Provided Training*, 2000



Qx: Who provided the training?

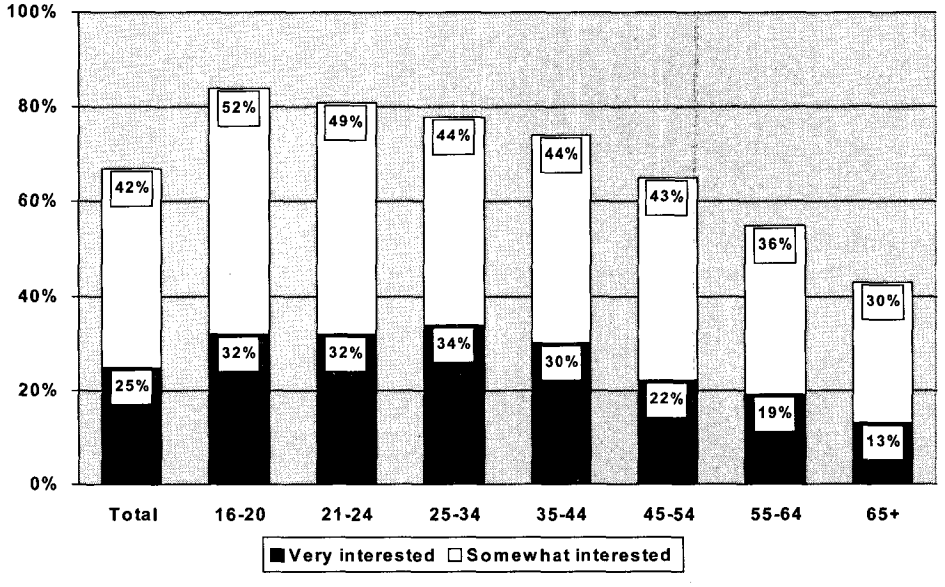
Base: Have taken first aid or emergency train in past 5 years. [Multiple responses were accepted.]

Unweighted *N=2,118*

* 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 (Figure 37). Two-thirds (67%) said they would be very interested (25%) or somewhat interested (42%) in this type of training. Interest in such a course was inversely related to age, that is, as people got older, interest declined. More than four out of five in the 16 to 20 age group (83%) and the 21 to 24 age group (81%) said they would be interested. From this point interest declined to 78% for those in the 25 to 34 group, 74% in the 35 to 44 group, 65% in the 45 to 54 group, 55% in the 55 to 64 group, and finally to 43% for those over 65.

Figure 37
Interest in Training to Assist Crash Victims by Age, 2000



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?

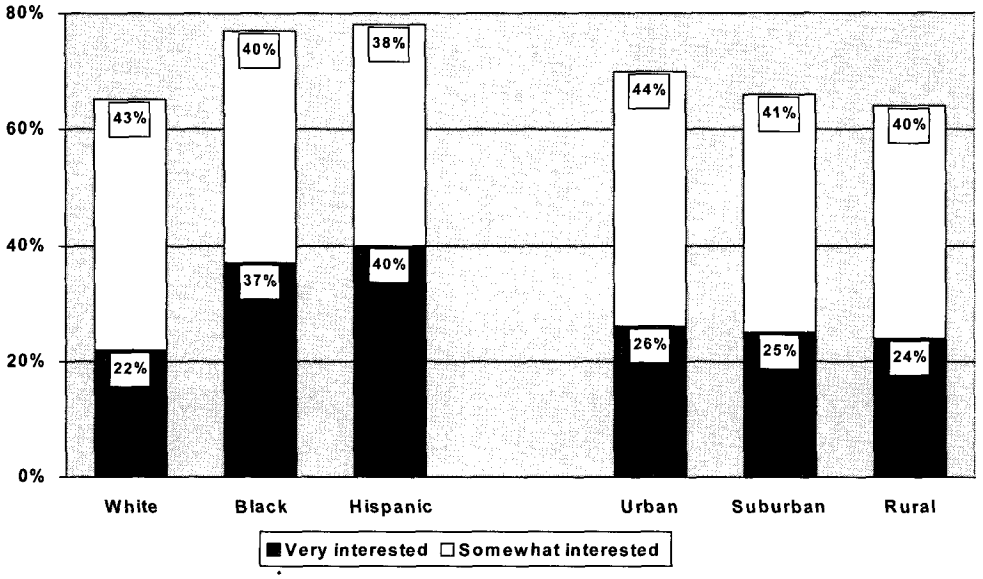
Base: Total population 16 and over.

Unweighted *N=6,049*

There was more interest in training of this type among minorities than among Whites (Figure 38). Only 64% of Whites were "very interested" (22%) or "somewhat interested" (43%) in training to assist crash victims. Interest among Blacks (78%) and Hispanics (78%) was considerably higher. It should be noted that this difference stemmed from high interest ("very interested") in such training. Nearly two in five (37%) Blacks and 40% of Hispanics were very interested in such training, compared to one in five (22%) Whites.

Interest in training was highest in urban areas with seven in ten (70%) urban residents either very interested (26%) or somewhat interested (44%). Interest dropped to 66% among suburban residents and 65% for residents of rural communities.

Figure 38
Interest in Training to Assist Crash Victims
by Race/Ethnicity and Community Type, 2000



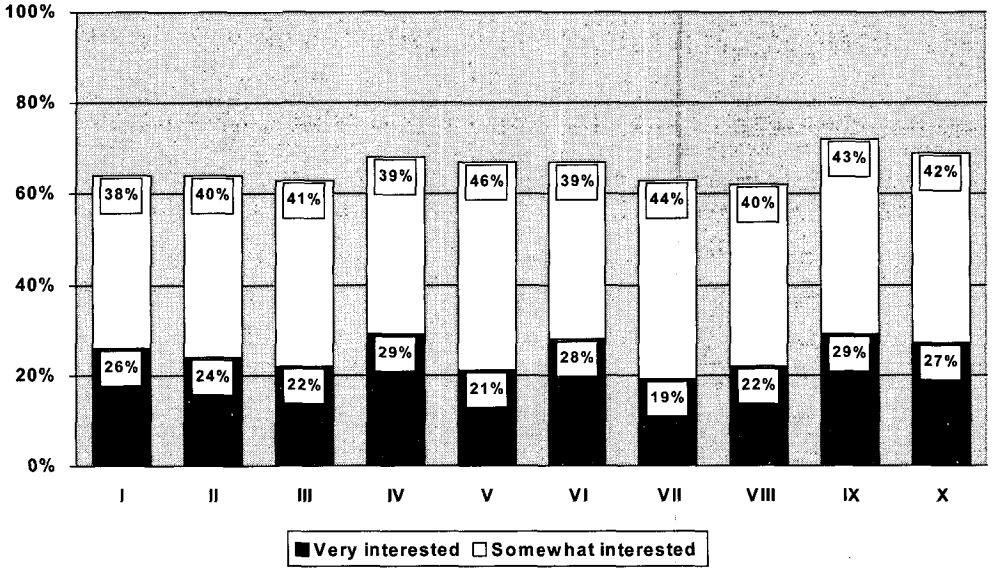
Qx: Assuming it was at low cost and in a convenient location, how interested would you be in taking training on how to assist injured persons in vehicle crashes?

Base: Total population 16 and over.

Unweighted *N=6,049*

Interest in this type of training was lowest in NHTSA Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming) where three in five (62%) expressed interest (Figure 39). Interest was highest in Region IX (Arizona, California, Hawaii and Nevada) (73%) and in Region X (Alaska, Idaho, Oregon and Washington) (69%). In the remaining regions, interest was in the 63% to 68% range.[4]

Figure 39
Interest in Training to Assist Crash Victims by NHTSA Region, 2000



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?

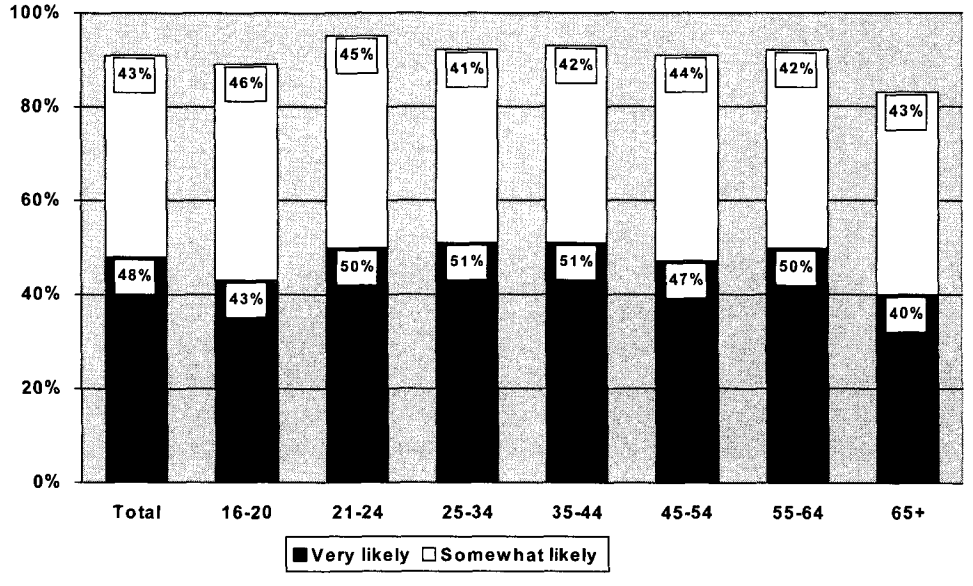
Base: Total population 16 and over.

Unweighted *N=6,049*

[4] The full list of States per NHTSA Region appears on page 31.

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 (Figure 40). Overall, 91% of those who said they were interested in a course said they were either "very likely" (48%) or "somewhat likely" (43%) to take this specific course. Only 8% said they were unlikely.

Figure 40
Likely to Take a 2-Hour Course by Age, 2000



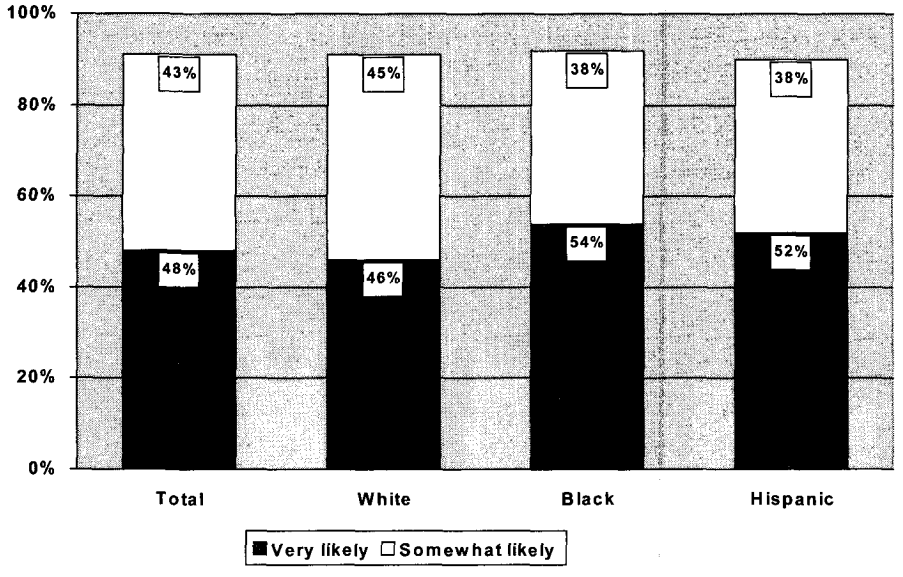
Qx: If the training took no more than 2 hours in a single class session, how likely would you be to take such a class?

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

Unweighted *N=4,157*

Whites, Blacks, and Hispanics who expressed general interest in taking a training course all voiced a high likelihood of taking the two-hour training — 91%, 92% and 91% respectively (Figure 41).

Figure 41
Likely to Take a 2-Hour Course by Race/Ethnicity, 2000



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=4,157*

CONCLUSIONS

Some of the notable findings from the Emergency Medical Services and crash injury components of the 2000 Motor Vehicle Occupant Safety Survey include:

- Almost three persons in ten (28.4%) 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, including an estimated 1.7% of the total population age 16 and older who were injured in the past year.
- Persons who were injured in a vehicle crash were about twice as likely to be hospitalized from the crash-related injuries if they were not wearing a seat belt at the time of the crash.
- Of those who were ever injured in a vehicle crash, 58% (16% of the total population) had received injuries severe enough to prevent them from performing normal activities (work, school, household) for at least a week.
- Males were more likely than females to state that they had no concerns and would stop to help victims at a crash site (52% to 40%). Females were more likely to express concerns about not knowing what to do (20% to 14%) and about personal safety (21% to 16%).
- Whites were less likely to have no concerns about stopping to help at a vehicle crash (45%) than were Blacks (50%) and Hispanics (49%). Further, Whites and Hispanics showed more concern than Blacks in the ability to provide assistance (18%, 18% and 14% respectively). Whites showed more concern than Blacks and Hispanics in the areas of personal safety (20% versus 16% and 13%), and potential liability for improper assistance (13% versus 6% and 5%).
- Nearly nine in ten persons (88%) 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 half of drivers (54%) said they usually have a car phone or carry a cellular phone in their vehicle.
- About one in seven drivers who usually have a car or cellular phone in their vehicle had to suddenly take quick action in a driving situation to avoid another vehicle, to avoid something else, or to move back onto the roadway while talking on the phone in the past 12 months (15%).
- Nearly one-quarter of drivers (24%) have used a car phone to report an emergency.

- Almost half (47%) the population knew what the initials "EMS" stand for with recognition highest in NHTSA Region VI (55%) and lowest in Region IX (30%).
- Nine in ten (90%) reported that they would call "9-1-1" first in the event of a medical emergency; an additional 8% said they would call the police, the ambulance service, or some other emergency group.
- More than two in five (42%) persons age 16 and older have called 9-1-1 or some other emergency number some time in the past.
- Rural residents were less likely to have ever called an emergency number (40%) than residents of urban or suburban communities (44% and 43% respectively).
- Among those making a call, urban residents were slightly more likely to have called the police than were residents of either suburban or rural areas (29% versus 27% and 25% respectively).
- Two in five (42%) persons age 16 and older said they expected an ambulance to arrive within five minutes after being called and about seven in ten (70%) expected arrival within 10 minutes.
- Virtually everyone was very confident (67%) or somewhat confident (28%) in the abilities of the emergency response personnel to know what to do in a medical emergency.
- Blacks (18%) and Hispanics (14%) were more likely than Whites (11%) to expect an emergency response team to take more than 15 minutes to arrive. Blacks (62%) and Hispanics (62%) were less likely than Whites (69%) to say they were very confident in the abilities of the emergency response personnel to know what to do in a medical emergency.
- One in three persons age 16 and older (33%) had taken first aid or emergency training in the last 5 years.
- Two-thirds of persons age 16 and older (67%) expressed interest in taking training on how to assist injured persons in vehicle crashes. Interest in taking training to assist injured persons was higher among Blacks (78%) and Hispanics (78%) than among Whites (64%).

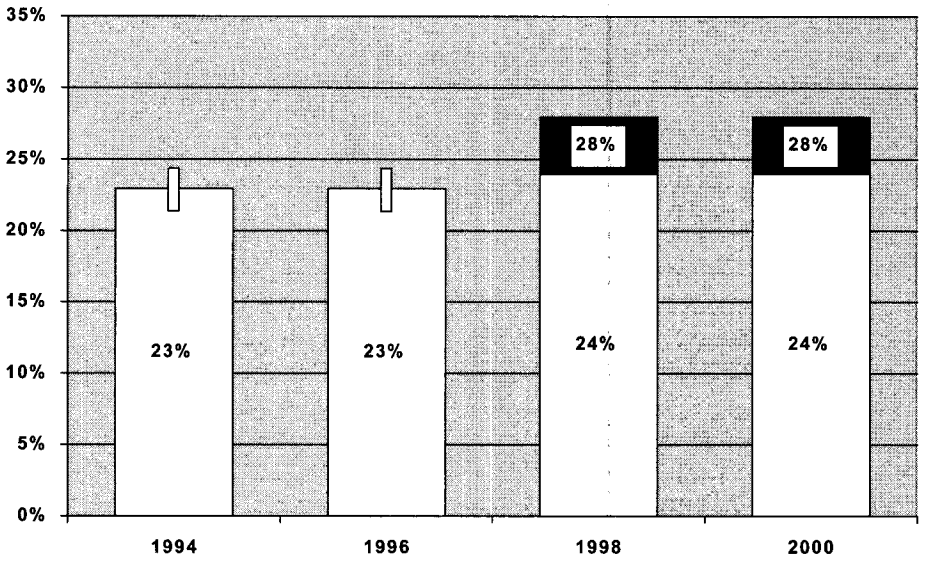
SECTION 2

TRENDS, 1994-2000

INJURIES IN VEHICLE CRASHES, 1994-2000

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 both 1998 and 2000.

Figure 42
Ever Injured in a Vehicle Crash, 1994-2000



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 and 2000 – shown in blue.)

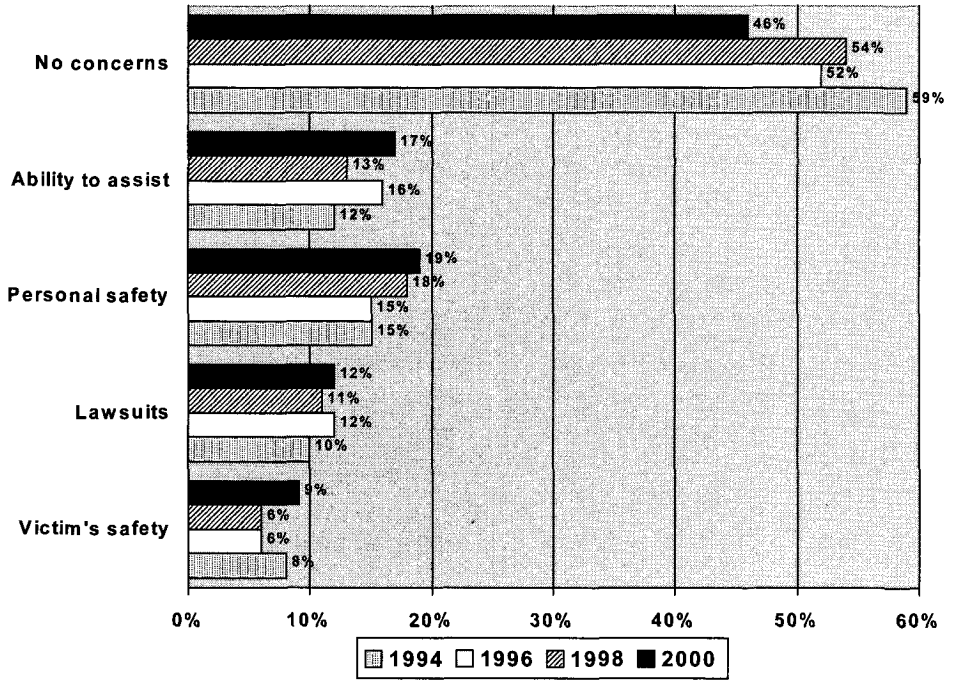
Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population.

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

CONCERNS ABOUT STOPPING AT A CRASH, 1994-2000

During the last six years there appears to have been an increase in public concerns about stopping at the scene of a vehicle crash to offer assistance (Figure 43). Overall the proportion saying they had no concerns about stopping decreased from 59% in 1994 to 46% in 2000. Almost half of this change came from increased concerns about "not knowing what assistance to offer" (12% in 1994 to 17% in 2000). Most of the rest comes from greater concerns about personal safety (15% in 1994 to 19% in 2000).

Figure 43
Concerns About Stopping to Help at a Vehicle Crash, 1994-2000



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 4 studies.]

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

Unweighted $N_{(1994)}$=4,018; $N_{(1996)}$=8,210; $N_{(1998)}$=4,121; $N_{(2000)}$=6,049

Lack of concern and willingness to stop decreased by eleven percentage points among males between 1994 and 2000 surveys (Table 7). The drop among females was sixteen points. Both males and females showed an increase in concern about being unable to offer proper assistance. Concerns about personal safety increased but there was virtually no change in concerns about victim's safety.

Between 1998 and 2000, males and females showed similar trends. Both show a decrease in having no concerns. Males declined from 61% in 1998 to 52% in 2000; females declined from 49% in 1998 to 40% in 2000. Both groups show an increase in concerns about their ability to assist, as well as concerns for the victim's safety. Concerns about personal safety and about lawsuits remained fairly constant for males and females between 1998 and 2000.

Table 7
Concerns About Stopping to Help at a Vehicle Crash by Gender, 1994-2000

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 4 studies.]

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

	1994			1996			1998			2000		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Unweighted N	*4,018*	*1,759*	*2,259*	*4,022*	*1,894*	*2,121*	*4,121*	*1,941*	*2,180*	*6,049*	*2,905*	*3,144*
No concerns, would stop	59%	63%	56%	52%	58%	47%	54%	61%	49%	46%	52%	40%
Ability to assist	12%	9%	15%	16%	11%	20%	13%	9%	17%	17%	14%	20%
Personal safety	15%	13%	16%	15%	13%	17%	18%	15%	22%	19%	16%	21%
Lawsuits	10%	13%	8%	12%	14%	11%	11%	13%	10%	12%	13%	10%
Victim's safety	8%	9%	8%	6%	6%	6%	6%	6%	5%	9%	9%	9%
Other	1%	1%	1%	2%	2%	3%	1%	*	1%	2%	3%	2%
Don't know/refuse	5%	3%	6%	4%	3%	5%	5%	4%	6%	7%	5%	8%

* Less than 0.5%

Willingness to stop decreased among Whites, Blacks and Hispanics 13, 20 and 10 points respectively between 1994 and 2000 (Table 8). All groups reported increased concern about being able to give the proper assistance

Trends in concerns about stopping in the past two years echoed the six-year trends. The proportion that had no concerns decreased by about 10% between 1998 and 2000, regardless of race. The past two years showed an increase in concern about ability to assist for Whites, Blacks and Hispanics. However, personal safety concerns stayed about the same between 1998 and 2000 for Whites (19% to 20%), but decreased for Blacks (21% to 16%) and Hispanics (17% to 13%).

Table 8
Concerns About Stopping to Help at a Vehicle Crash by Race/Ethnicity, 1994-2000

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 4 studies.]

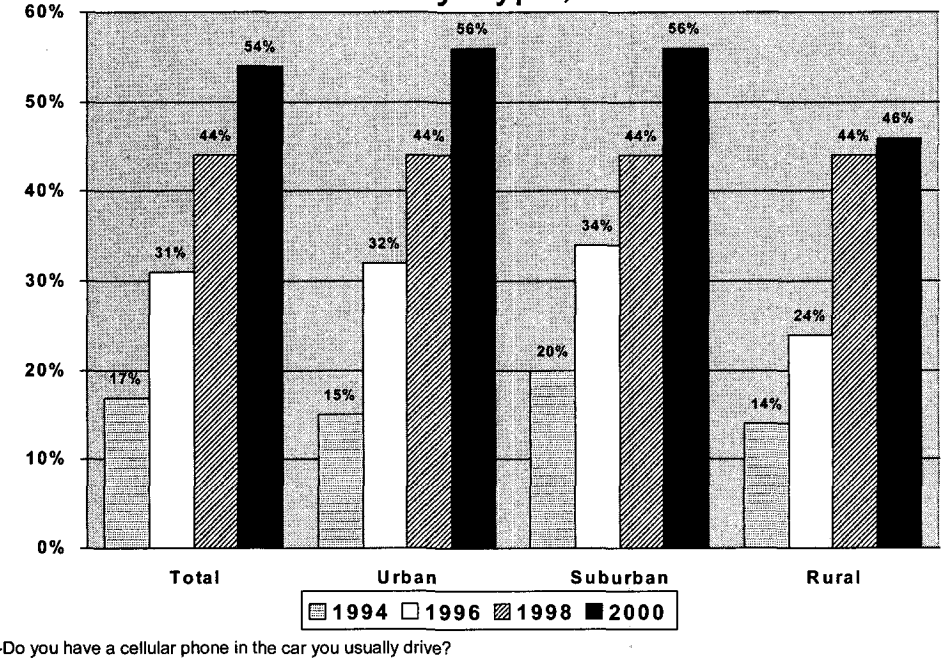
Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population.

	1994			1996			1998			2000		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Unweighted N	*3,138*	*414*	*290*	*3,188*	*379*	*355*	*3,141*	*391*	*370*	*4,555*	*563*	*532*
No concerns, would stop	58%	70%	59%	50%	60%	64%	53%	60%	61%	45%	50%	49%
Ability to assist	13%	6%	11%	17%	11%	15%	14%	9%	9%	18%	14%	18%
Personal safety	16%	8%	11%	16%	12%	9%	19%	21%	17%	20%	16%	13%
Lawsuits	11%	3%	6%	14%	4%	5%	13%	6%	6%	13%	6%	5%
Victim's safety	8%	10%	11%	6%	7%	3%	6%	5%	3%	9%	7%	9%
Other	1%	1%	1%	2%	3%	2%	1%	1%	1%	2%	2%	2%
Don't know/refuse	4%	6%	7%	4%	7%	6%	5%	4%	6%	6%	11%	10%

AVAILABILITY OF CELLULAR PHONES, 1994-2000

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 car phones with them in the vehicle.

Figure 44
Availability of Cellular/Car Phone Among Drivers* by Community Type, 1994-2000



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.

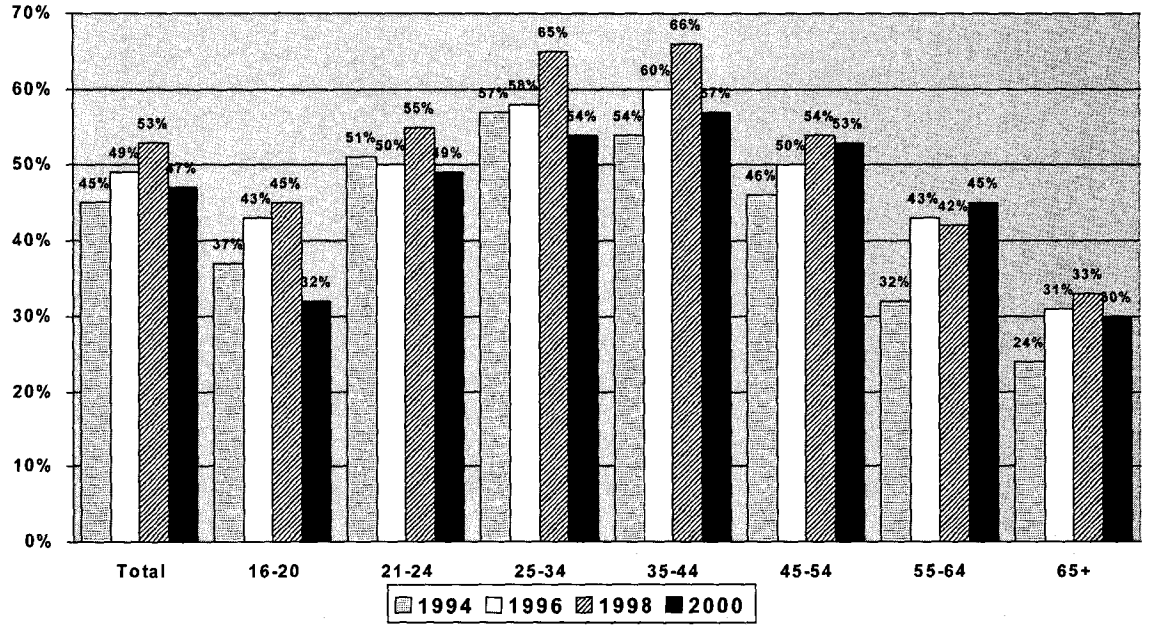
Base: 1994-Drivers; 1996-Drivers; 1998-Drivers; 2000-Drivers. Unweighted $N_{(1994)}$=3,685; $N_{(1996)}$=3,755; $N_{(1998)}$=3,788; $N_{(2000)}$=5,564

* This question was only asked of drivers in 1994, so the trended comparison in this section is restricted to drivers in 1996, 1998, and 2000.

KNOWLEDGE OF INITIALS "EMS", 1994-2000

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 (Figure 45). The decline in awareness of EMS in the past two years occurred primarily among persons under 45 years old.

Figure 45
Know What the Initials "EMS" Stand For by Age, 1994-2000



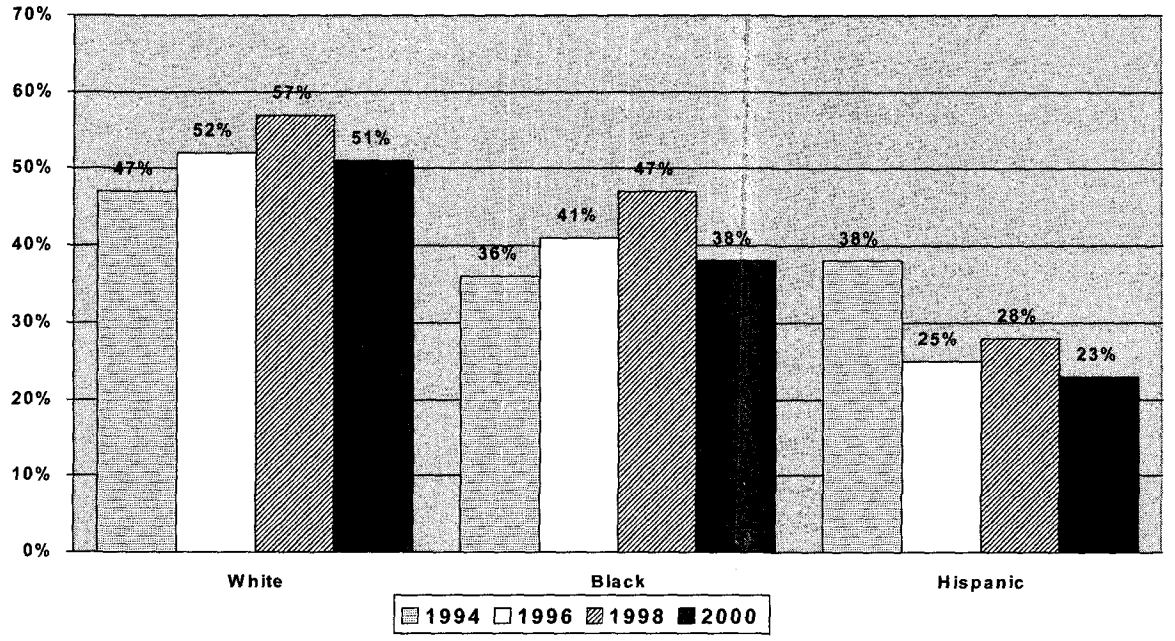
Qx: Can you tell me what the initials "EMS" stand for?

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

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

The awareness of EMS declined between 1998 and 2000 among Whites (57% to 51%), Blacks (47% to 38%) and Hispanics (28% to 23%). While the proportion of Whites and Blacks who could identify the meaning of the initials "EMS" is still slightly higher in 2000 compared to 1994, the proportion of Hispanics who could identify the meaning is lower (Figure 46).

Figure 46
Know What the Initials "EMS" Stand For by Race/Ethnicity, 1994-2000



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

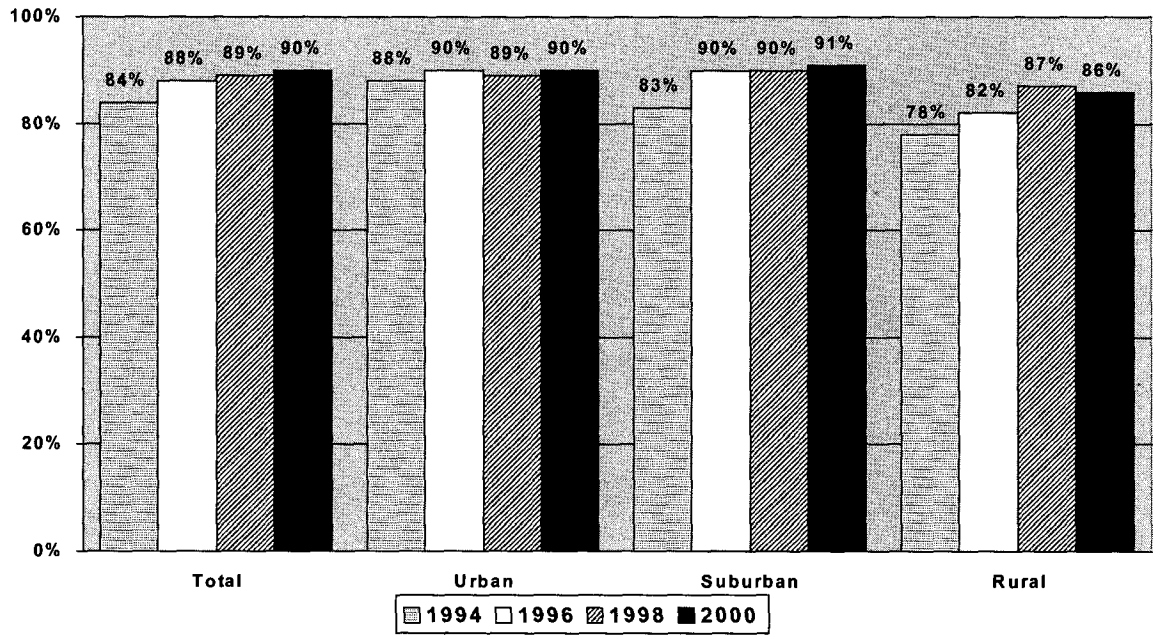
Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population.

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

TELEPHONING FOR HELP, 1994-2000

The 2000 study showed a slight overall increase, from 84% in 1994 to 90% in 2000, in proportion of people who said if they were faced with a medical emergency they would call "9-1-1" first (Figure 47). While less than half of this increase (two percentage points) was seen in urban areas, a greater increase (eight percentage points) was seen in suburban and rural areas. There was very little change between 1998 and 2000.

Figure 47
Would Call 9-1-1 First in Medical Emergency by Community Type, 1994-2000



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

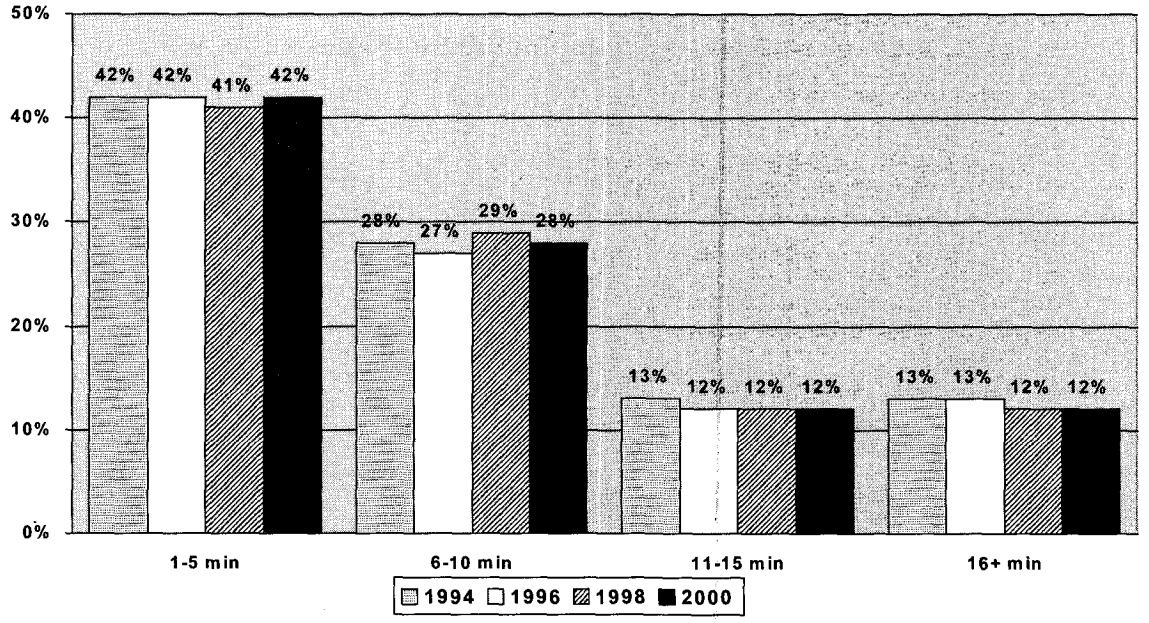
Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population.

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

EXPECTATIONS FOR EMERGENCY RESPONSE, 1994-2000

There has been virtually no change in expected response time in a medical emergency (Figure 48).

Figure 48
Expected Time for Ambulance to Arrive, 1994-2000



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.

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

There has been very little change in the expectations of Whites with regard to how long it should take for an ambulance to arrive in a medical emergency between the two studies. In both 1994 and 1996, 71% of Whites expected an ambulance to arrive in 10 minutes or less. This remained virtually unchanged at 72% of Whites in 1998 and 72% of Whites in 2000 expecting an ambulance to arrive in 10 minutes or less. Using the same 10-minute threshold, the expectations of Blacks changed little (58% in 1994 to 56% in 1996, 58% in 1998, and 58% in 2000). While Hispanics showed a seven point improvement at the 5-minute level (30% in 1994 to 37% in 2000), there was a six point improvement at the 10-minute level from 1994 (63%) to 1998 (69%), but a decrease to 60% in 2000 (Table 9).

Table 9
Expected Time for Ambulance to Arrive by Race/Ethnicity, 1994-2000

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?

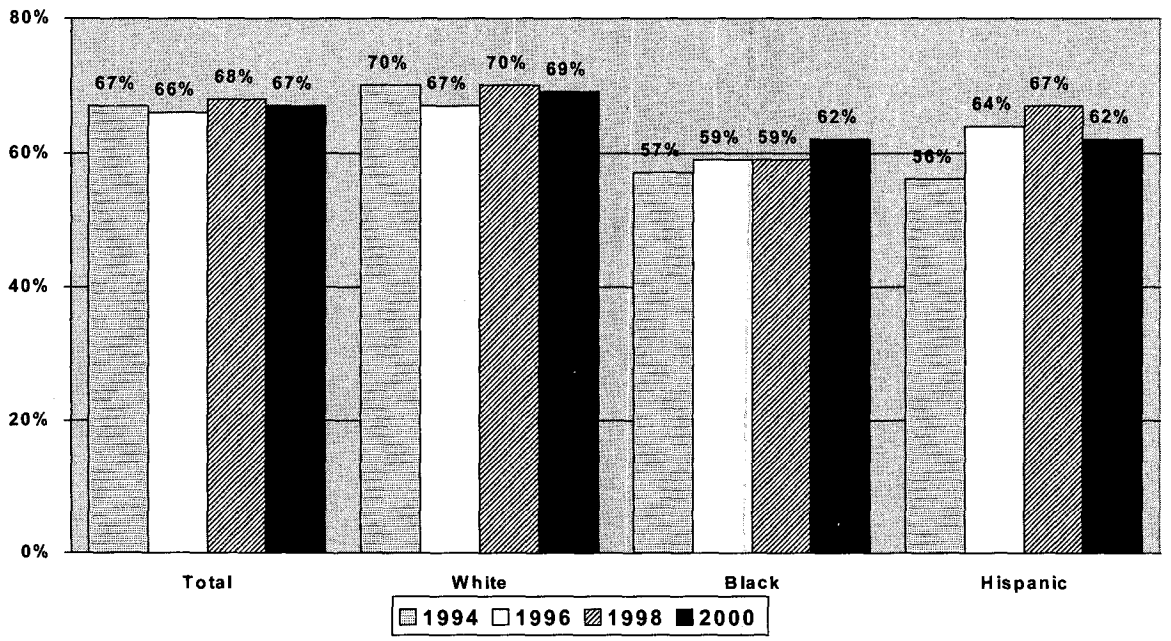
Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population.

	1994			1996			1998			2000		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Unweighted N	*3,138*	*414*	*290*	*3,188*	*379*	*355*	*3,141*	*391*	*370*	*4,555*	*563*	*532*
1 to 5 minutes	45%	28%	30%	44%	31%	38%	44%	30%	36%	44%	27%	37%
6 to 10 minutes	26%	30%	33%	27%	25%	27%	28%	29%	33%	29%	31%	23%
11 to 15 minutes	14%	14%	13%	12%	15%	12%	12%	15%	13%	11%	15%	17%
16 or more minutes	12%	21%	18%	12%	20%	18%	10%	19%	12%	11%	18%	14%

CONFIDENCE IN EMERGENCY WORKERS, 1994-2000

Overall, the proportion that reported being very confident in emergency workers knowing what to do remained unchanged from 1994 to 2000 (67%) (Figure 49). However, while the confidence level remained the same among Whites (70% percent in 1994 to 69% in 2000), confidence increased slightly among Blacks (from 57% in 1994, to 59% in 1996 and 1998 to 62% in 2000). Although confidence in emergency workers increased among Hispanics from 56% in 1994 to 64% in 1996 and 67% in 1998, it declined to 62% in 2000.

Figure 49
Very Confident in Emergency Workers by Race/Ethnicity, 1994-2000



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

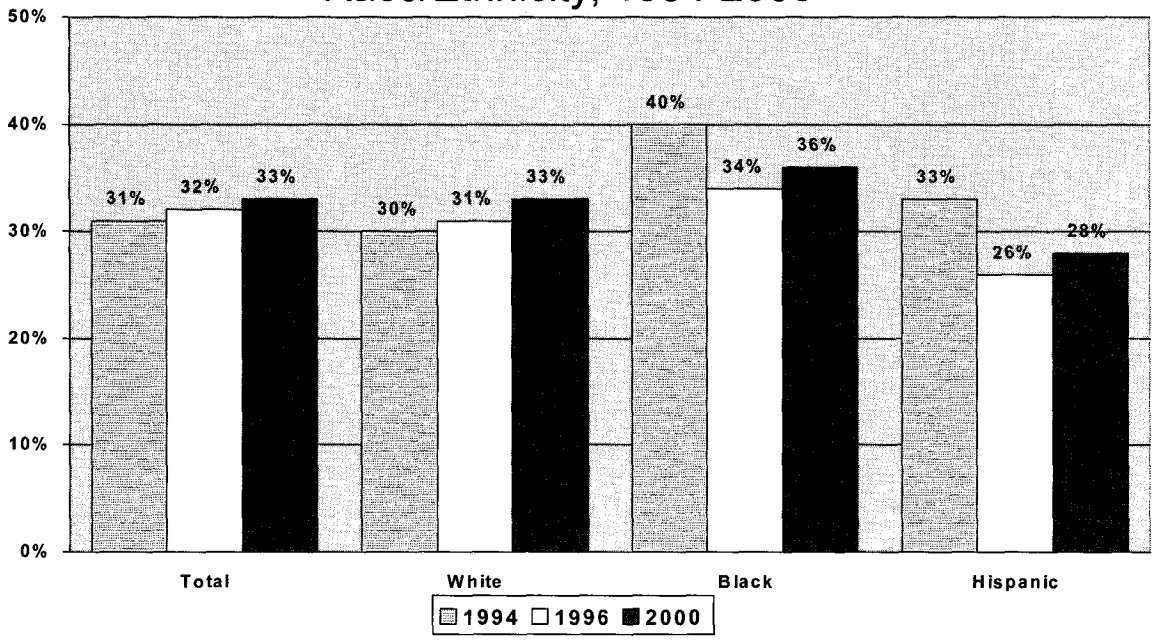
Base: 1994-Total population; 1996-Total population; 1998-Total population; 2000-Total population.

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

INTEREST IN TRAINING TO ASSIST CRASH VICTIMS, 1994-2000

The proportion of the population who had taken first aid or emergency training in the last five years increased by two percentage points from 31% in 1994 to 33% in 2000 (Figure 50). (Data from 1998 was not included because changes in the questionnaire for that year skewed the data.) While the proportion of Whites who had training in the last five years went up by three percentage points, the proportion of Blacks and Hispanics who reported having a training course decreased from the 1994 survey (four points and five points respectively). However, between 1996 and 2000, there were increases in reported emergency training for Whites, Blacks and Hispanics.

Figure 50
Had Emergency Training in Past 5 Years by Race/Ethnicity, 1994-2000



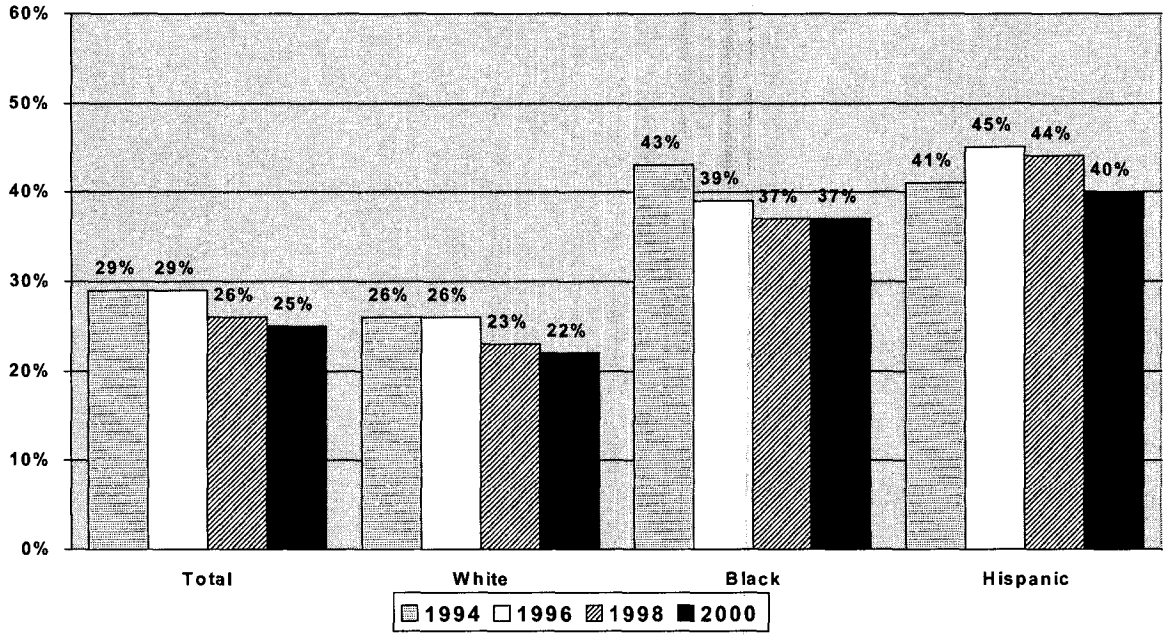
Qx: In the past 5 years, have you taken any kind of emergency or first aid training?

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

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

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 26% in 1998 and 25% in 2000. The proportion of Whites who were very interested in such a course also decreased from the 26% reported in 1994 and 1996 to 23% in 1998 and 22% in 2000. Interest among Blacks declined from 43% in 1994 to 39% in 1996 to 37% in 1998 and 37% in 2000. Among Hispanics interest increased from 41% in 1994 to 45% in 1996, but decreased to 44% in 1998 and 40% in 2000 (Figure 51).

Figure 51
Very Interested in Training to Assist Crash Victims by Race/Ethnicity, 1994-2000



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.

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

CONCLUSIONS

Several points can be made about the trends seen between the 1994 and 2000 studies:

- People have more concerns about stopping at the scene of a vehicle crash and a major portion of the increase in concern relates to an increased feeling of not being able to offer the proper care and concerns about personal safety.
- There has been an increase in the ability to identify the initials "EMS" from 1994 to 1998, but a decrease between 1998 and 2000.
- There has been an increase in the likelihood of calling 9-1-1 first in the event of a medical emergency.
- There has been no 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 remained the same among Whites, increased among Blacks, and increased from 1994 to 1998, but declined from 1998 to 2000 among Hispanics.
- The proportion that has had emergency training in the past five years has increased slightly. However, interest in taking a training course to assist crash victims has decreased.
- Despite several changes over the years in the wording of the survey question, it remains clear from the data that there has been a rapid increase in drivers who carry car phones with them in the vehicle.

It should be noted that these results are based on only four points in time and the points are only two years apart. Future studies will be better able to substantiate these trends. However, in nearly all measurements the trends continue to be consistent across the six years.

APPENDIX A

PRECISION OF SAMPLING ESTIMATES

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:

$$\text{var}(x) = z\sqrt{[(p*q)/(n-1)]}$$

Where:

var (x) =		the expected sampling error of the mean of some variable, expressed as a proportion
p	=	some proportion of the sample displaying a certain characteristic or attribute
q	=	(1 - p)
z	=	the standardized normal variable, given a specified confidence level (1.96 for samples of this size).
n	=	the size of the sample

The sample sizes for the surveys are large enough to permit estimates for subsamples of particular interest. Table 10, 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 10
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 oversample of youth and young adults (age 16-39). Both the cross-sectional sample and the oversample 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:

$$ASE = 1.96 \sqrt{\sum_{h=1}^{g} [W_h^2 \{(1-f_h)(s^2_h/n_h - 1)\}]}$$

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 10 above 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 44.3 percent while the proportion for the 40 and over stratum (w^2) was 55.7 percent.

As shown in Table 11, the disproportionate sampling decreases the confidence interval by 1.3 percent, compared to a simple random sample of the same size. This means the sample design slightly increases the sampling precision for total population estimates, while also increasing the precision of sampling estimates for the target population aged 16-39 years old. Since the difference in sampling precision between the stratified disproportion sample and a simple random sample is less than one tenth of a percentage point in each case, the sampling error table for a simple random sample will provide a reasonable approximation of the precision of sampling estimates in the survey.

TABLE 11
Design Effect on Confidence Intervals for Sample Estimates Between Disproportionate Sample Used in Occupant Protection Survey And a Proportionate Sample of Same Size

	p=	---------- CONFIDENCE INTERVALS ---------- PERCENTAGE POINTS ± AT 95% CONFIDENCE LEVEL HYPOTHETICAL PROPORTIONATE SAMPLING*	CURRENT DIS-PROPORTIONATE SAMPLING	DIFFERENCE IN CONFIDENCE INTERVALS ABOUT
ESTIMATES				
USE NEW VARIABLES				
Driven in the past year	*90.1%*	*0.53*	*0.49*	*-8.2%*
Drunk alcohol in past year	*61.3%*	*0.87*	*0.85*	*-2.4%*
Always use seat belt	*83.5%*	*0.70*	*0.68*	*-2.9%*
Dislike seat belts	*34.9%*	*1.27*	*1.34*	*+5.2%*
Always use passenger belt (front)	*80.3%*	*1.04*	*1.02*	*-2.0%*
Favor (a lot) seat belt laws	*67.4%*	*1.18*	*1.18*	*0.0%*
Primary enforcement	*63.1%*	*1.25*	*1.27*	*+1.6%*
Ever ticketed by police for seat belt	*8.4%*	*0.70*	*0.68*	*-2.9%*
Ever injured in vehicle accident	*24.5%*	*0.76*	*0.78*	*+2.6%*
Drives a car for work almost every day	*52.0%*	*2.23*	*2.25*	*+0.9%*
Set a good example for others (reason for using seat belts)	*76.4%*	*1.14*	*1.16*	*+1.7%*
Driver-side only Air Bag in vehicle	*24.0%*	*0.96*	*0.95*	*-1.1%*
Race: Black/African American	*9.6%*	*0.52*	*0.52*	*0.0%*
Ethnicity: Hispanic	*9.9%*	*0.53*	*0.48*	*-10.4%*
Gender: Male	*48.2%*	*0.89*	*0.88*	*-1.1%*
AVERAGE DIFFERENCE IN CONFIDENCE INTERVALS				*-1.3%*

* Total sample proportions using SRS formula

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. Call the total sampling error (i.e., var (x) in the previous formula) of the first sample s1 and the total sampling error of the second sample s2. Then, the sampling error of the difference between these estimates is sd that is calculated as:

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

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 subsamples for various sizes is presented in Table 12. This table can be used to indicate the size of difference in proportions between drivers and non-drivers or other subsamples that would be statistically significant.

TABLE 12. 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			
2000	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	2000	2500	3000	3500	4000
Sample Size																	

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