



VITAL STATISTICS REPORT

Health Interview Survey—Provisional Data

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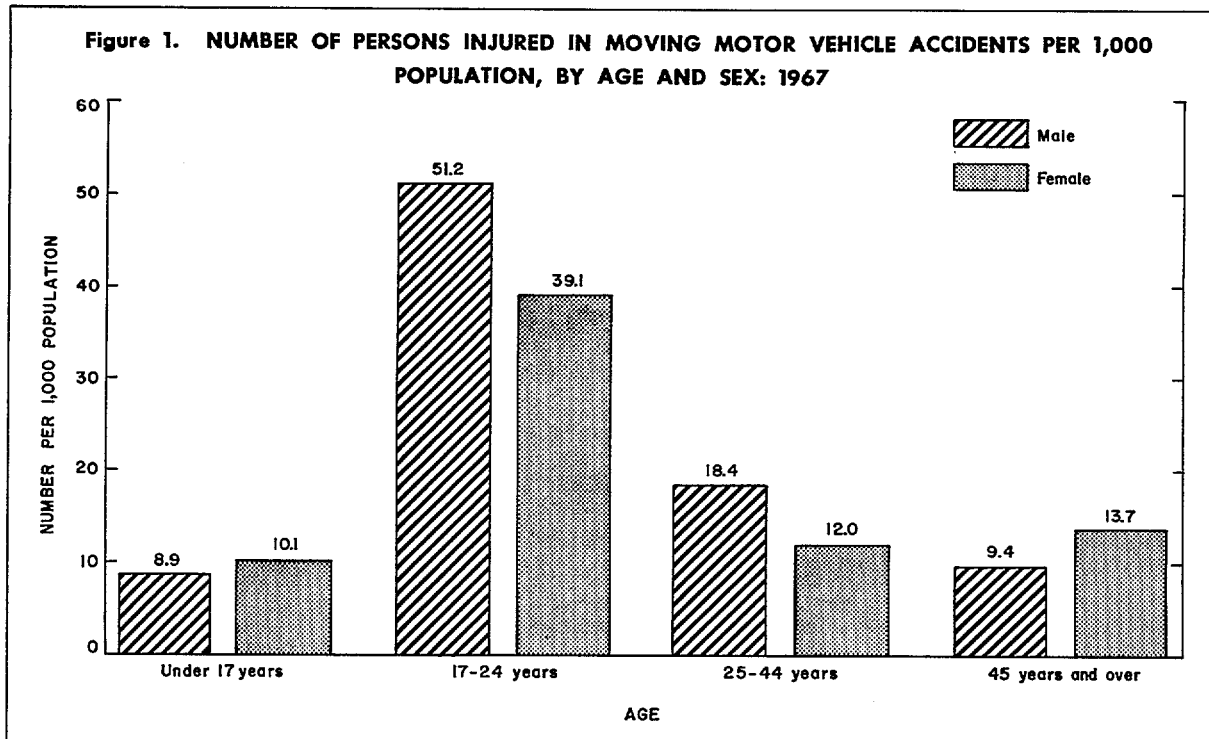
Annual Estimates of Persons Injured in Moving Motor Vehicle Accidents in the United States, 1967

Annual estimates of persons injured in moving motor vehicle accidents shown in this report are based on sample data collected by the Health Interview Survey (HIS) during the period July-December 1967 using a special supplement to the HIS questionnaire.

In 1967 an estimated 3,096,000 persons sustained injuries that required medical attention or resulted in 1 day or more of restricted activity. The annual rate was 16.0 persons per 1,000 popu-

lation. Persons aged 17-24 had by far the highest motor vehicle injury rate of any specific age group, 44.6 persons per 1,000 population. As can be seen in table 1, this rate is almost three times that for any other age group. For all other age groups the rates of persons injured in moving motor vehicle accidents are of the same general magnitude.

The motor vehicle injury rate per 1,000 population for the year was slightly higher among males (16.6) than among females (15.3). In the population



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Table 1. Annual number of persons injured in moving motor vehicle accidents and number per 1,000 population, by sex and age: United States, based on data collected July-December 1967

Age	Both sexes	Male	Female
	Number of persons injured in thousands		
All ages-----	3,096	1,554	1,542
Under 17 years---	638	305	333
17-24 years-----	1,047	550	497
25-44 years-----	688	402	286
45-64 years-----	533	223	311
65 years and over-----	190	*	*
	Number of persons per 1,000 population		
All ages-----	16.0	16.6	15.3
Under 17 years---	9.5	8.9	10.1
17-24 years-----	44.6	51.2	39.1
25-44 years-----	15.1	18.4	12.0
45-64 years-----	13.4	11.7	15.0
65 years and over-----	10.5	*	*

17-44 years of age, males were more frequently injured in motor vehicle accidents, while the rate of injury for females exceeded that for males among children under 17 years and persons 45 years and over (figure 1).

The Northeast Region had the highest rate of moving motor vehicle injuries of any of the four regions of the United States, 20.1 persons per 1,000 population (table 2). The rates of personal injury in 1967 for the other regions were remarkably similar—North Central, 14.3; South, 14.7; and West, 14.9. The greatest regional difference between the rates for injured males and females occurred in the South Region, 18.6 males per 1,000 population and 11.2 females (figure 2).

Of the total number of persons injured, 978,000 persons, or 31.6 percent, were injured in accidents involving only one motor vehicle, and 2,118,000 persons, or 68.4 percent, were injured in accidents

persons injured in accidents involving two motor vehicles or more is appreciably greater than the number of persons injured in single vehicle accidents. The higher proportion of injuries for persons under 17 years in single vehicle accidents is probably due to the greater number of accidents involving persons outside the motor vehicle for this particular age group. Little difference is noted among the four regions in the proportion of persons injured in accidents involving one motor vehicle and those involving two motor vehicles or more.

Of the 978,000 persons injured in accidents involving only one motor vehicle (table 4), about 307,000 persons, or 31.4 percent, were outside the motor vehicle at the time of the accident. Of this number, 212,000 were pedestrians. Another 276,000 persons, or 28.2 percent, were injured when the vehicle in which they were riding collided with an object of some kind, such as a pole, signpost, animal, or person outside the motor vehicle. Twenty-one percent, or 203,000 persons, were injured in a motor vehicle which either overturned or was brought to a sudden stop.

Table 2. Annual number of persons injured in moving motor vehicle accidents and number per 1,000 population, by sex and geographic region: United States, based on data collected July-December 1967

Region	Both sexes	Male	Female
	Number of persons injured in thousands		
All regions--	3,096	1,554	1,542
Northeast-----	958	468	490
North Central----	790	352	438
South-----	853	513	340
West-----	495	222	273
	Number of persons per 1,000 population		
All regions--	16.0	16.6	15.3
Northeast-----	20.1	20.4	19.9
North Central----	14.3	13.1	15.5
South-----	14.7	18.6	11.2

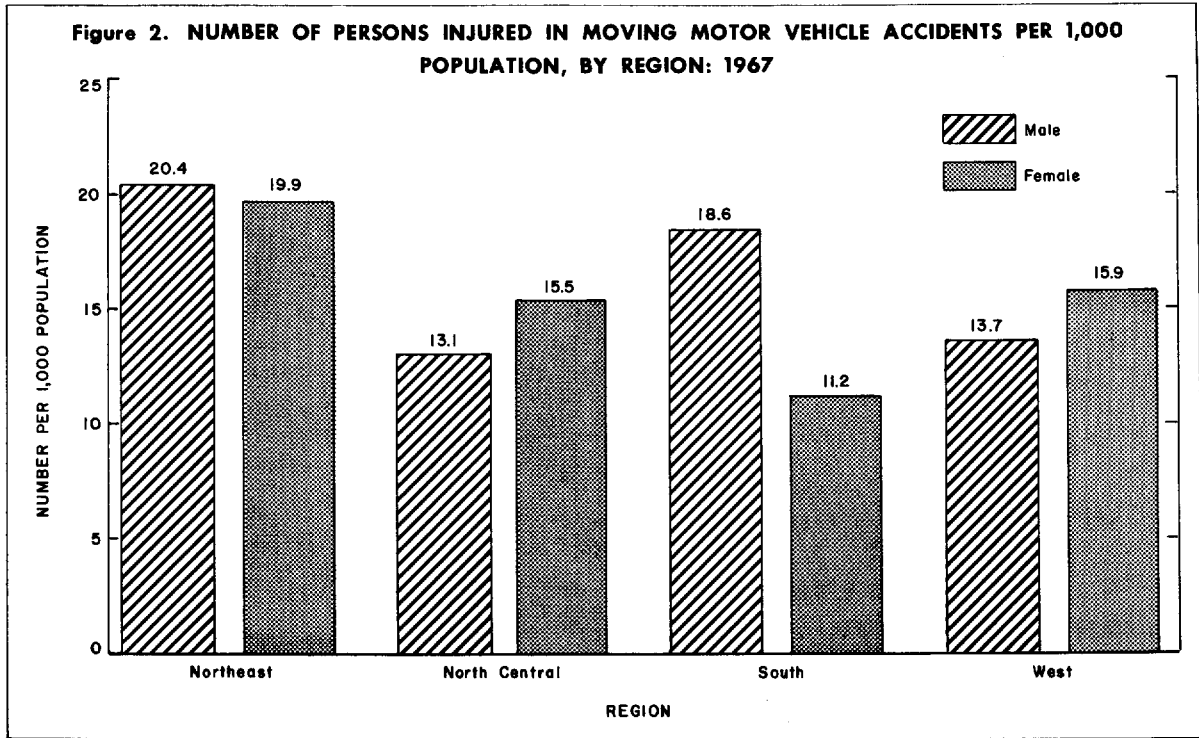


Table 3. Annual number and percent distribution of persons injured in moving motor vehicle accidents, by number of vehicles involved according to age and geographic region: United States, based on data collected July-December 1967

Age and region	Total	One vehicle	Two vehicles or more	Total	One vehicle	Two vehicles or more
	Number of persons injured in thousands			Percent distribution		
AGE						
All ages-----	3,096	978	2,118	100.0	31.6	68.4
Under 17 years-----	638	361	276	100.0	56.6	43.3
17-24 years-----	1,047	293	755	100.0	28.0	72.1
25-44 years-----	688	*	514	100.0	*	74.7
45 years and over-----	723	*	573	100.0	*	79.3
REGION						
Northeast-----	958	269	689	100.0	28.1	71.9
North Central-----	790	263	527	100.0	33.3	66.7
South-----	853	291	562	100.0	34.1	65.9
West-----	495	*	340	100.0	*	68.7

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An estimated 2,789,000 persons inside the motor vehicle at the time of the accident were injured in 1967. Approximately 53 percent of these persons were drivers and about 44 percent were passengers (table 5). It is interesting to note that

the proportion of injured persons who were passengers is slightly lower in accidents involving only one motor vehicle than when two motor vehicles or more were involved. Of those persons injured while inside the motor vehicle, 1,228,000 were riding

Table 4. Annual number and percent distribution of persons injured in moving motor vehicle accidents involving one vehicle, by type of accident: United States, based on data collected July-December 1967

Type of accident	Persons injured	
	Number in thousands	Percent distribution
All accidents-----	978	100.0
Vehicle collided with object-----	276	28.2
Injured person outside vehicle-----	307	31.4
Vehicle overturned or brought to sudden stop-----	203	20.8
Unknown-----	192	19.6

Table 5. Annual number and percent distribution of persons injured inside moving motor vehicles, by status of injured person according to number of vehicles involved and type of vehicle: United States, based on data collected July-December 1967

Number and type of motor vehicles involved	Number of persons injured in thousands			Percent distribution		
	Total ¹	Driver	Passenger	Total ¹	Driver	Passenger
All motor vehicles---	2,789	1,480	1,219	100.0	53.1	43.7
MOTOR VEHICLES INVOLVED						
1 motor vehicle-----	671	375	262	100.0	55.9	39.0
2 motor vehicles or more---	2,118	1,105	957	100.0	52.2	45.2
TYPE OF MOTOR VEHICLE						
Sedan or station wagon----	1,228	620	574	100.0	50.5	46.7
Hardtop or convertible----	1,040	564	464	100.0	54.2	44.6
Other-----	414	277	*	100.0	66.9	*
Unknown-----	107	*	*	100.0	*	*

¹Includes unknown status of injured person.

in automobiles classified as either sedans or station wagons and another 1,040,000 persons were riding in hardtops or convertibles. There are approximately the same number of sedans and station wagons in use as there are hardtops and convertibles. (See page 6, *1969 Automobile Facts and Figures*, Automobile Manufacturers Association, Inc., Detroit, Michigan.) With this distribution in mind, no marked difference is evident in the proportion of persons injured in sedans and station wagons compared with those injured in hardtops and convertibles. Included in the category "Other type of motor vehicle" are 277,000 persons who were injured in trucks. Injuries sustained by persons on motorcycles, in buses, and in sport cars constitute the remainder of this category.

Of particular interest in table 6 is the proportion of injured male drivers compared with injured female drivers in accidents involving two motor vehicles or more. Approximately three-fourths of all males injured in accidents involving two motor vehicles or more were driving at the time of the accident; in contrast to this, only 35.3 percent of the females injured in an accident of this type were driving when the accident happened. This marked difference is probably related to a greater exposure to risk of injury among male drivers since an estimated 59 percent of all licensed drivers in 1967 were males. (See page 47, *1969 Automobile Facts and Figures*, Automobile Manufacturers Association, Inc., Detroit, Michigan.)

Table 6. Annual number and percent distribution of persons injured in accidents involving two motor vehicles or more, by status of injured person according to age, sex, and geographic region: United States, based on data collected July-December 1967

Age, sex, and region	Total ¹	Driver	Passenger	Total ¹	Driver	Passenger
	Number of persons injured in thousands			Percent distribution		
All persons injured--	2,118	1,105	957	100.0	52.2	45.2
AGE						
Under 17 years-----	276	*	235	100.0	*	85.1
17-24 years-----	755	362	393	100.0	47.9	52.1
25-44 years-----	514	355	*	100.0	69.1	*
45 years and over-----	573	379	172	100.0	66.1	30.0
SEX						
Male-----	897	674	212	100.0	75.1	23.6
Female-----	1,221	431	745	100.0	35.3	61.0
REGION						
Northeast-----	689	365	312	100.0	53.0	45.3
North Central-----	527	279	238	100.0	52.9	45.2
South-----	562	261	279	100.0	46.4	49.6
West-----	340	200	*	100.0	58.8	*

¹Includes unknown status of injured person.

Some of the circumstances of accidents are presented in table 7. Three of every five persons injured in moving motor vehicles in 1967 were involved in an accident during daylight hours. This higher proportion of injuries is to be expected since more miles are driven during this time of day. Almost 40 percent of the persons injured in moving

motor vehicles were in accidents which happened in residential areas. Business districts accounted for another 30 percent of these accidents. Almost a quarter of all moving motor vehicle accidents involving personal injury occurred on wet pavement or roadways.

Table 7. Annual number and percent distribution of persons injured in moving motor vehicle accidents, by visibility condition at time of accident, area in which accident occurred, and road condition: United States, based on data collected July-December 1967

Visibility condition, area, and road condition	Persons injured	
	Number in thousands	Percent distribution
All persons injured-----	3,096	100.0
VISIBILITY CONDITION		
Daylight-----	1,870	60.4
Dusk-----	394	12.7
Dark-----	712	23.0
Other and unknown-----	*	*
AREA		
Residential-----	1,222	39.5
Business-----	929	30.0
Open country-----	648	20.9
Other-----	186	6.0
Unknown-----	*	*
ROAD CONDITION		
Dry-----	2,252	72.7
Wet-----	709	22.9
Other and unknown-----	*	*

SYMBOLS USED IN TABLES

Data not available-----	---
Category not applicable-----	...
Quantity zero-----	-
Quantity more than 0 but less than 0.05-----	0.0
Figure does not meet standards of reliability or precision--	*

Technical Notes

SOURCE OF DATA. During the 6-month period July-December 1967 detailed information about injury-producing moving motor vehicle accidents was obtained through household interviews conducted by the Health Interview Survey. A probability sample of approximately 70,000 persons representing the civilian, noninstitutional population of the United States was used for this survey.

In past years estimates on the incidence of all types of injuries have been based on injuries occurring during the 2-week recall period preceding the week of interview; these frequencies have then been inflated to obtain annual estimates. Recently a methodological study was conducted by the Health Interview Survey to determine the optimum recall period for reporting injuries received from moving motor vehicle accidents. This study disclosed that the recall period for these injuries could be extended from 2 weeks to 3 months without adversely affecting the reliability of the data. When annual estimates are based on a 3-month recall period instead of a 2-week period, the sampling error is decreased and it is possible to analyze motor vehicle injury data in greater detail. Figures shown in tables of this report were based on this new estimating procedure.

DEFINITIONS. A person is classified as being injured in a moving motor vehicle accident if (1) he sustained one injury or more which resulted in

either medical attention or 1 day or more of restricted activity and (2) the accident involved at least one motor vehicle which was moving at the time of the accident.

A person classified as injured inside the motor vehicle may be the driver or a passenger; in addition a person is classified as being inside if he had his arms, legs, or head protruding outside, was thrown or fell out, or was riding in the "bed" of a truck or on an "open" motor vehicle such as a motorcycle. All other persons are considered as outside the vehicle. Besides pedestrians, this category includes persons hanging or riding on some outside part—a fender, a tailgate of a truck, or the like—persons riding on a nonmotor vehicle or a pedestrian conveyance such as a bicycle, train, wagon, or baby carriage, and persons getting in or out of a motor vehicle.

A motor vehicle is any mechanically or electrically powered device, not operated on rails, on which or by which any person or property may be transported or drawn on a land highway.

SAMPLE. Since the estimates shown are based on a sample of the population rather than on the entire population, they are subject to sampling error. The standard errors appropriate for the estimates of the number of persons with injuries resulting from moving motor vehicle accidents are shown in table I. Table II shows the standard errors appropriate for the percent of persons who were injured in moving motor vehicle accidents.

Table I. STANDARD ERRORS OF ESTIMATES OF AGGREGATES

Size of estimate	Standard error
200,000-----	60,000
300,000-----	75,000
400,000-----	84,000
500,000-----	94,000
1,000,000-----	140,000
2,000,000-----	210,000
3,000,000-----	240,000
4,000,000-----	280,000
5,000,000-----	325,000

Table II. STANDARD ERRORS, EXPRESSED IN PERCENTAGE POINTS, OF ESTIMATED PERCENTAGES

Estimated percentage	Base of percentage shown in thousands			
	500	1,000	2,000	5,000
2 or 98-----	1.5	1.3	1.2	0.9
5 or 95-----	2.9	2.4	1.5	1.0
10 or 90-----	3.6	3.3	2.0	1.3
25 or 75-----	5.0	4.5	2.9	1.9
50-----	6.5	4.5	3.4	2.3