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FOREWORD

We dedicate this report to the memory of the thousands of men and women who have died while actively serving their country in the U.S. Armed Forces. These airmen, soldiers, marines and sailors (many of whom volunteered for military service) honorably performed their duties not only in the U.S. but at many other, often remote, locations throughout the world-frequently without their families and loved ones.

Between 1980 and 1993, men and women on active duty accounted for more than 28 million person-years of service in the four military branches, and over 27,000 died while on active duty. During this period, an average of 1,934 military personnel died annually-about 5 per day. Although any loss of life is a tragedy, those who die while engaged in hostile action or war often are the most notable or memorable; however, such deaths accounted for only 2% of the total. Far more common were the military personnel who died from unintentional injuries that occurred during their day-to-day activities on and off duty; these deaths accounted for 60% of the total, or 16,330 deaths.

Deaths from unintentional injuries, suicide, homicide and premature death due to illness or disease are largely preventable. Thus as a nation, we must combine our civilian and military public health expertise and aggressively address those causes where intervention efforts and prevention strategies can be implemented to save lives. For example, motor vehicle and motorcycle driver training programs have been developed by military base commanders in concert with local civilian communities; these programs have been very successful in increasing safety awareness and reducing fatal injuries both on and off duty.

As we review the data in this report, let us use the knowledge to educate ourselves on what our past experience has been and as an impetus to prevent future loss of life among the honorable men and women serving on active duty in the U.S. Armed Forces.

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ACKNOWLEDGEMENTS

Mmilitary fatality research at the Division of Safety Research was made possible beginning in 1991 through the assistance of J.R. Sungenis, Lewis Schenk, and Rhonda Prather, Washington Headquarters Services, Directorate for Information Operations and Reports, Department of Defense, by providing the military fatality data. Likewise, the calculation of fatality rates was made possible by the invaluable population data provided by Terry McMillan, from the Defense Manpower Data Center, Department of Defense.

The authors are indebted to many NIOSH employees for their contributions in the layout and preparation of this report: Joyce R. Spiker for her initial data base management and analytical support, and Patricia M. Cutlip for long-term management of the military casualty and population data; Greg Kulczycki, contractor to DSR, for analytical support and assistance in obtaining data from the National Center for Health Statistics; and Pauline Elliot and her team of graphic artists at the Education and Information Division.

Development of this document would not have been possible without the continued support and encouragement of Alfred A. Amendola, Ph.D., former Acting Director, DSR; Timothy J. Pizatella, Acting Deputy Director, DSR; and Nancy A. Stout, Ed.D., Acting Chief, Surveillance and Field Investigations Branch, DSR.

The authors would also like to thank Colonel Bruce H. Jones, MC, U.S. Army, Chairman, DoD Injury Surveillance and Prevention Working Group; Lewis H. Kuller, M.D., DRPH, President, and Colonel Michael S. Petersen, MSC, USAF (Ret), former Executive Secretary, Armed Forces Epidemiological Board, for their invaluable support and opportunities to present research findings to audiences concerned with the prevention of injury in the military.

Further acknowledgement:

In early 1997, this document was designed and converted to HTML by Morehouse School of Medicine Visiting Scholar *Mana Haeri*.

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National Mortality Profile of Active Duty Personnel in the U.S. Armed Forces: 1980-1993

EXECUTIVE SUMMARY

During the 14-year period 1980 through 1993, 27,070 men and women serving on active duty died, at an overall annualized rate of 94.9 per 100,000 military personnel. Males accounted for more than 95% of these deaths, whites 78% of the deaths, and those aged 34 or less, 81% of the deaths. Deaths resulting from unintentional injury (e.g., motor vehicle, fall, etc.) accounted for the majority of military deaths-60% (61% among males and 52% among females). Disease and illness accounted for about one in every five deaths among both males and females. Among males, suicide accounted for 13% of all deaths followed by homicide (5%), while among females this order was reversed-homicide (14%) and suicide (12%). Five hundred sixty-one men and women died as a result of hostile action (2%) and 408 died as a result of other, unclassified or unknown causes (1%).

Fatality rates for fatal unintentional injuries steadily decreased with age while rates due to disease and illness dramatically increased with age across all services. These trends are comparable to patterns observed in the general population. For all services combined, overall fatality rates per 100,000 military personnel were: unintentional injury 57.3; disease and illness-related deaths 17.2; suicide 11.9; and homicide 5.1. There were marked differences in the distribution of fatality rates among the individual services.

The frequency and rate of death (for unintentional injuries, homicide, and natural causes) has steadily decreased over the 14-year period. The number of deaths due to suicide, however, has remained steady at about 245 per year, while the rate has increased about 25% from 1980 to 1993. Temporal trends are of significance because appropriate intervention efforts and prevention strategies should be directed where they would have the most impact on sustained military readiness and save the most lives.

- Men accounted for 89.9% of the active duty military population; whites, 74.8%; and personnel in the age group of 17 to 24 years, 45.7%.
- Men were 2.6 times as likely as women (61.1 vs 23.2 per 100,000) to experience unintentional injury deaths.
- Four of every five unintentional injury victims were white with rates about 1.3 times higher than blacks.
- Overall rate of unintentional injury death decreased about 3.5% per year.
- The number of unintentional injury deaths among males decreased by 60% (from 1,499 in 1980 to 603 in 1993) while the rate decreased by half (80.5 to 41.2 per 100,000).
- The number of unintentional injury deaths among females decreased by 60% (from 57 in 1980 to 23 in 1993) with a commensurate rate decrease of 64% (32.9 to 11.7 per 100,000).
- The number of disease-related deaths decreased by about half (417

in 1980 to 219 in 1993) and the rate by about one-third (20.3 to 13.1 per 100,000).

- Service-specific disease fatality rates among males were approximately twice that of females.
- Disease and illness-related fatality rates increased 4.5-fold from the middle to the oldest age group, 11.8 to 53.9 per 100,000.
- Personnel younger than 25 years of age accounted for 48% of all military suicides.
- Over 95% of all military suicide victims were male with a rate 2.6 times higher than females.
- The number of suicides among males remained relatively constant (200 to 230 annually) while the rate increased by about 25% from 11.9 per 100,000 in 1980 to 15.0 in 1993.
- Females were victims of homicide at a rate (6.4 per 100,000) substantially higher than the rate for males (5.0 per 100,000).
- Blacks were victims of homicide at a rate about 2.5 times higher than the rate among whites and persons of other races.
- The Marine Corps experienced the highest fatality rates per 100,000 for all causes (122.5), unintentional injury (77.1), suicide (14.0), and homicide (7.4) of all the services.
- The Army had the highest disease and illness-related fatality rate (20.2 per 100,000) of all the services.
- The Air Force experienced the lowest rates per 100,000 among all the services for all causes 72.7, unintentional injury 42.1, and homicide 2.6.
- The Navy's suicide rate (11.0 per 100,000) was the lowest among all services.

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INTRODUCTION

The Department of Defense (DoD) publishes periodic summaries of all active duty casualties by type (hostile and nonhostile), cause of death, branch of service, geographic location, and year of occurrence. Also included are basic decedent demographic information such as gender, race, pay grade, age at death, and occupational codes.^{1,2} Although annual military strength (employment) totals and rates of death for all causes are generated for each service, these summaries do not provide detailed epidemiologic or risk information.

Occupational injuries that occur in the civilian workforce are summarized and analyzed through the ongoing NIOSH National Traumatic Occupational Fatalities (NTOF) surveillance system. Recently, a summary of occupational injury deaths, described by demographic, employment and injury characteristics, was reported for both national and state-specific work-related deaths that occurred in the 1980s.³

The purpose of this report is to complete the description of fatal injuries among the U.S. workforce by providing a detailed summary of the causes of death among the millions of men and women who served on active duty during the 14-year period 1980 through 1993. The deaths are examined by demographic variables including age, gender and race, both by individual service (Air Force, Army, Marine Corps and Navy) and collectively for all services.

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METHODS

Military Casualty Data

The Report of Casualty (DD Form 1300) is the official record of death for all military personnel who die while serving on active duty (see Appendix I). The DD Form 1300 is the primary source of information for the DoD Worldwide Casualty System (WCS), maintained and operated since 1979.¹ Casualty data for each military service is routinely compiled on a fiscal-year basis, October 1 through September 30, and consolidated by the DoD. To facilitate comparisons with national data with the same age profile and for a similar period of time, military casualties were analyzed by calendar year. The WCS data, consisting of all deaths that occurred among active duty personnel during the 14-year period January 1, 1980, through December 31, 1993, was obtained in electronic form from the Directorate for Information and Reports (DIOR), Washington Headquarters Services (WHS), Office of the Secretary of Defense, Department of Defense, Washington, DC.

Limitations of the WCS Data

Although the DoD Report of Casualty (DD Form 1300) provides valuable epidemiologic information and has been shown to be a timely and valuable source of complete case ascertainment for active duty deaths,^{2,4-7} it has several limitations. The DD Form 1300 does not usually provide detailed information on the circumstance(s) relating to a death (item 5f, DD Form 1300 [[see Appendix I](#)]). For example, in a homicide, we do not know if the homicide was committed during the commission of another felony (rape, robbery), or under nonfelonious circumstances (argument), or whether the incident occurred on- or off-base. Further, we do not usually know if the (active-duty) victim in a homicide and the assailant (active duty or civilian) were friends or acquaintances, family members, or strangers to one another. As well, the duty status (item 5g, DD Form 1300, [[see Appendix I](#)]) of the active-duty member who has died is typically not known. Mishap (accident) investigations require a determination of duty status; however, suicide or homicide are non-reportable mishaps.⁸

Provision for duty status is made on the DD Form 1300; however, it is reported at the option of each service and currently is not consistently recorded.¹ Although information on the specific cause or manner of death may be currently reported on the DD Form 1300 by each individual service, WHS/DIOR has not computerized these data after 1990. Thus, comparison of illness-related deaths caused by a heart attack or cancer, for example, or an injury death due to a motor vehicle crash cannot be made with national data bases such as the mortality files maintained by the National Center for Health Statistics.⁹ Similarly, data on the type of weapon or instrument used in a suicide (firearm, hanging, carbon monoxide, etc.) or homicide (firearm, knife, strangulation, etc.) is also not available for analysis after 1990 and will severely limit comparisons with NCHS data and other data sources such as the FBI Supplemental Homicide Reports.

Finally, information on the occupation of the decedent was sometimes absent on the DoD Form 1300, or for a small number of occupations, no appropriate coding existed. Additionally, certain intra-branch codings changed amid the study period complicating any task to tabulate

fatalities by worker occupation.

[Military Strength \(Employment\) Data](#)

Complete data on the number of active-duty personnel for each service were obtained from the DoD Defense Manpower Data Center in Monterey, California. For purposes of research, data were obtained for each of the 14 years and stratified by gender, age, race and paygrade. [Figure DoD-1](#) depicts the average yearly military active-duty employment for each service, broken down by gender for the 14-year period, 1980-1993. Paygrade (rank) is often used to describe military populations, particularly as a surrogate for socio-economic status. However, since paygrade has been shown to be highly correlated to age ($r=0.73$, $p<.001$),¹⁰ paygrade-specific fatality rates are not presented in this report.

Annual summaries as of December 31st of each year accounted for changes due to accession and attrition throughout the year. Three age groups were used: 17 to 24 years, 25 to 34 years, and 35 and older. The race category Other included Asians/Pacific Islanders and Native Americans. Fatality rates were calculated as average annual deaths per 100,000 military personnel-at-risk. Frequencies and rates for all causes and the four primary causes of death are presented for each military branch and, collectively, for all branches. Because of the instability of rates based on small numbers, rates were not calculated in categories with less than three deaths.³ Also, rates for the Other race category were not displayed when annual rates were calculated for each cause of death for each individual service and collectively for all services.

Overall mortality rates may be affected by the age distribution of the individual service populations. In a comprehensive study of mortality in active duty personnel, age-adjusted rates were calculated for the same leading causes presented in this report.¹¹ Comparison of adjusted and unadjusted rates suggests that age appeared not to be a significant factor in explaining the differences in overall mortality rates observed in that study. Therefore, age adjustment has not been applied to the rates and age-specific numbers and rates are presented in this report.

[Definition of Cause-of-Death Categories](#)

All causes of death were reviewed and initially grouped into six categories: unintentional injury, disease and illness (natural causes), homicide, suicide (self-inflicted injury), hostile action (injury resulting from operations of war), and other. Although the WCS cause of death codes have their own nomenclature and classification system, the description and definition of these major categories subjectively parallel those in the International Classification of Diseases, 9th Revision (ICD-9).¹² The Other category has no defined parameters in ICD-9, but includes military deaths whose cause is under investigation, or pending, and those deaths where the cause is undetermined or unknown. [Appendix II](#) provides a list of military death categories and their associated ICD-9 rubrics.

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RESULTS

All Services

All Causes

For the 14-year period from 1980 through 1993, 27,070 men and women died while on active duty; an average of 1,934 deaths per year. The average annual fatality rate for all services combined was 94.9 per 100,000 military men and women ([Table DoD-1a](#)). [Table DoD-1b](#) presents age-specific fatality rates for each of the four primary causes of death for each service. These rates should facilitate inter-service comparisons, as appropriate.

During the period, the number of active duty deaths decreased, although not consistently, from 2,390 in 1980 to 1,210 in 1993; this represents a 49% decrease in the number of deaths over the 14-year period ([Figure DoD-1](#)). The annual fatality rate also decreased from a maximum of 117.2 per 100,000 in 1983 to a minimum of 73.4 per 100,000 in 1993—a 38% decrease. The peak rates in 1983, 1985, and 1991 were due primarily to the terrorist bombing of the Marine Barracks in Beirut, Lebanon, in October 1983; the crash of a DC-8 on takeoff from Gander, Newfoundland, in December 1985; and the Persian Gulf War in 1991, respectively ([Figure DoD-2](#)). Among males the maximum rate observed for all cause fatality, 122.9 per 100,000, occurred in 1980 and 1983; the minimum rate occurred at the end of the period—78.1 per 100,000 in 1993 ([Table DoD-2](#)). Among females the highest rate was in 1982—60.3 per 100,000, and the lowest rate, 33.6 per 100,000, in 1992.

Males accounted for 95% of the deaths with an overall fatality rate (100.6 per 100,000) over two times higher than for females (44.9 per 100,000) ([Table DoD-1a](#)). Whites accounted for 78% of all military deaths with an overall fatality rate of 99.1 per 100,000. Blacks accounted for about one-fifth of the deaths and an overall fatality rate of 88.3 per 100,000. Military men and women aged 24 or younger accounted for half of the deaths with a resulting fatality rate of 104.9 per 100,000. Men and women in the 25-to-34-year-old age group accounted for 30% of the deaths at a rate of 78.3 per 100,000, while those 35 and older accounted for 19% of the deaths at an overall fatality rate of 103.6 per 100,000 ([Table DoD-1a](#)).

Unintentional Injury

Sixty percent of the overall active duty deaths were related to unintentional injuries at an annual rate of 57.3 per 100,000 ([Table DoD-1a](#)). The rate among males and whites was comparable (about 61 per 100,000) and was over 2.6 times higher than the rate among females. Fatality rates due to unintentional injuries steadily decreased as age increased. Deaths due to unintentional injuries accounted for the most observable decrease over the 14-year period. While the number of deaths decreased by nearly 60% from 1,556 in 1980 to 626 in 1993, the corresponding fatality rate decreased by just under 50% from 76.4 in 1980 to 37.7 per 100,000 in 1993, as shown in [Figure DoD-3](#). The increases seen in [Figure DoD-3](#) for the years 1985 and 1991 were due primarily to the Newfoundland aircraft crash and the Persian Gulf War. Rates among males decreased by about half and by about two-thirds among females from the beginning to the end of the period ([Table DoD-](#)

2). Rates among whites and blacks, and the three age groups showed similar decreases over the period.

Disease and Illness

About one-fifth of active duty deaths from 1980 through 1993 were due to natural causes (4,901), at an overall annual fatality rate of 17.2 per 100,000 ([Table DoD-1a](#)). The rate among men (18.1 per 100,000) was twice the rate among women. Blacks experienced the highest rates of any racial group. Rates showed a precipitous increase from the youngest to the oldest group (7.5 to 53.9 per 100,000). Figure [DoD-4](#) shows that there has been an overall decrease in both the frequency (47%) and rate (37%) of active-duty deaths due to disease and illness; 417 deaths and 20.5 per 100,000 in 1980 to 219 deaths and 13.2 per 100,000 in 1993. There were however, three modest peaks observed in 1981, 1986-1987, and 1991, that punctuated an otherwise decreasing trend. Rates over the 14-year period were generally variable across different demographic subgroups but showed overall decreases among males, females, whites, and in all three age groups ([Table DoD-2](#)).

Suicide

Deaths due to suicide accounted for about 12% of all deaths (3,406) at an annual rate of 11.9 per 100,000 ([Table DoD-1a](#)). Over 95% of military suicide victims were male, 82% were white, and 48% less than 25 years of age. The rates among these groups were about 13 per 100,000. Suicide rates slightly decreased as age increased. The distribution and rate of suicide among active-duty members showed erratic and disturbing trends over the period ([Figure DoD-5](#)). While the rate of all self-inflicted deaths throughout the 14-year period was 12.0 per 100,000, a sharp increase occurred during the last 5-year period (1989 to 1993). In 1989 the annual suicide rate was 10.7. For the next four years, the annual suicide rate soared 28.7% to 13.7 per 100,000. There was a 26% increase in the suicide rate among military males from 11.9 per 100,000 in 1980 to 15.0 per 100,000 in 1993, the highest annual rate observed during the period ([Table DoD-2](#)).

Homicide

Five percent of all active duty military deaths from 1980 through 1993 were attributed to homicide (1,464) at an annual rate of 5.1 per 100,000 ([Table DoD-1a](#)). Females were victims of homicide at a rate (6.4 per 100,000) higher than males ([Table DoD-2](#)). The rate among blacks (9.7 per 100,000) was substantially higher than the rate among whites. Rates decreased slightly as the victim got older. During the 14-year period overall rates decreased about 40%, while the number of homicides decreased about half ([Figure DoD-6](#)). Rates were erratic with periods of decline (1980-1984 and 1985-1989) followed by a period of increase (1989-1992). In particular, the rate more than doubled between 1989 and 1992 after a 43% decrease during the previous four years. Rates among males were lower than rates among females in all years except 1981. Female rates exhibited greater variability than rates among males due to the relatively few number (average 13) of female homicides annually ([Table DoD-2](#)).

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Air Force

Ranked Fatality Rate Profile: Air Force

Category	Service	Rate *
All-cause Mortality	Marine Corps (1)	122.5
	Army (2)	103.2
	Navy (3)	96.5
	Air Force (4)	72.7
Unintentional Injury (leading cause of death)	Marine Corps (1)	77.1
	Army (2)	61.9
	Navy (3)	59.4
	Air Force (4)	

* Rates Per 100,000 Persons.

Demographic Profile: Air Force

Demographic Group	1980 NumberPercent	1993 Number Percent	Percent Change
Male	494,521 (89.0)	367,834 (84.8)	-25.6
Female	61,087 (11.0)	65,745 (15.2)	7.6
White	460,463 (82.9)	350,993 (81.0)	-23.8
Black	80,332 (14.5)	64,378 (14.9)	-19.9
Other	14,813 (2.7)	18,208 (4.2)	22.9
17 to 24	239,557 (43.1)	122,815 (28.3)	-48.7
25 to 34	207,511 (37.4)	192,015 (44.3)	-7.5
35 +	108,540 (19.5)	118,749 (27.4)	9.4

Key Findings

From 1980 through 1993, the overall fatality rate for all members of the Air Force decreased by 45.9% from 112.0/100,000 to 60.6/100,000.

Members of the Air Force experienced the lowest all-cause mortality rate (72.7/100,000), lowest

unintentional injury fatality rate (42.1/100,000), and lowest homicide rate (2.6/100,000) of all the services

Members of the Air Force ranked the lowest of all the services for all-cause mortality for all demographic variables (gender, age, and race).

From 1980 through 1993, the Air Force experienced the largest decrease (48.7%) in the youngest age group (17 to 24 years) of all the services.

Air Force

All Causes

From 1980 through 1993, 5,639 Air Force personnel died on active duty, an average of 403 deaths per year. The average annual fatality rate was 72.7 per 100,000 ([Table Air Force-1](#)). The distribution of the primary causes of death are presented in [Figure Air Force-1a](#) for males and [Figure Air Force-1b](#) for females.

The rates among males, whites and the youngest airmen was about 76 per 100,000. Men and women in the oldest age group experienced the highest rate across any age group—88.4 per 100,000 ([Table Air Force-1](#)). During the 14-year period, overall death rates among males decreased by 46% and among females, 57% ([Table Air Force-2](#)). Similar decreases occurred in other demographic subgroups. The noticeable rise in the overall fatality rate in 1991 was due to the Persian Gulf War as shown clearly in [Figure Air Force-2](#).

Unintentional Injury

During the 14-year period, 3,264 Air Force personnel died as a result of unintentional injuries. Males experienced a fatality rate (45.5 per 100,000) that was over 2.5 times higher than the rate among females ([Table Air Force-1](#)). Rates decreased with increasing age from 54.9 per 100,000 for the 17-to-24-year-old group to 30.3 per 100,000 for those greater than 34 years of age. The fatality rate decreased approximately 60% over the period ([Table Air Force-2](#) and [Figure Air Force-3](#)).

Disease and Illness

Natural causes accounted for 1,237 Air Force active-duty deaths from 1980 through 1993 at an overall fatality rate of 16.0 per 100,000 ([Table Air Force-1](#)). The rates for males and whites were similar and were just over twice that of females (7.7 per 100,000). The rate for blacks (21.5 per 100,000) was the highest among the races and three times the rate observed for persons of other races. Rates showed a nearly 9-fold increase from the youngest (5.7 per 100,000) to the oldest age group. Rates generally decreased over the 14-year period in most demographic subgroups ([Table Air Force-2](#)). However, rates among those in the youngest age group, blacks and females, showed more variability and accounted for most of the rate increases observed in 1981, 1983 and 1993 ([Figure Air Force-4](#) and [Table Air Force-2](#)).

Suicide

Eight hundred eighty four Air Force personnel took their own life during the period at an overall rate of 11.4 per 100,000 ([Table Air Force-1](#)). The rates among males and whites were comparable but over twice the rate observed for females (5.8 per 100,000). The rates were remarkably similar in each of the age groups. Suicide rates were

erratic over the 14-year period, particularly in 1987 and 1988 ([Table Air Force-2](#) and [Figure Air Force-5](#)). On average, there were 63 Air Force suicides annually; however, in 1987 there were 82 and in 1988, 97.

Homicide

The 202 Air Force men and women murdered between 1980 and 1993 experienced an overall fatality rate of 2.6 per 100,000, the lowest rate observed for any of the four services. The rate among females (4.0 per 100,000) was nearly twice that of males and the rate for blacks (5.5 per 100,000) was the highest for any race ([Table Air Force-1](#)). The rate for 17-to-24-year-olds was twice the rate for those 35 or older. Rates were erratic over the 14-year period with an overall decrease of some 40% ([Figure Air Force-6](#) and [Table Air Force-2](#))

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National Mortality Profile of Active Duty Personnel in the
U.S. Armed Forces: 1980-1993

Army

Ranked Fatality Rate Profile: Army

Category	Service	Rate *
All-cause Mortality	MarineCorps (1)	122.5
	Army (2)	103.2
	Navy (3)	96.5
	Air Force (4)	72.7
Unintentional Injury (leading cause of death)	Marine Corps (1)	77.1
	Army (2)	61.9
	Navy (3)	59.4
	Air Force (4)	42.1

* Rates Per 100,000 Persons

Demographic Profile: Army

Demographic Group	1980 NumberPercent	1993 Number Percent	Percent Change
Male	697,943 (90.9)	490,330 (87.4)	-29.8
Female	69,705 (9.1)	70,781 (12.6)	1.5
White	498,016 (64.9)	360,881 (64.3)	-27.5
Black	228,771 (29.8)	155,803 (27.8)	- 31.9
Other	40,861 (5.3)	44,427 (7.9)	8.7
17 to 24	421,356 (54.9)	222,604 (39.7)	-47.2
25 to 34	243,368 (31.7)	215,001 (38.3)	-11.7
35 +	103,924 (13.4)	123,506 (22.0)	20.0

Key Findings

- From 1980 through 1993, the overall fatality rate for all members of the Army decreased by 21.3% from 114.3/100,000 to 89.9/100,000.
- The largest percentage decrease in race- and gender-specific population among all services occurred in Army whites (-27.5%) and Army males (-29.8%), respectively.

- Army men and women of all age groups experienced the highest disease- and illness-related mortality of all four services.
- All-cause mortality was the highest (122.3/100,000) among all services for the oldest group (35 + years) of Army men and women.

Army

All Causes

During the 14-year period 1980 through 1993, 10,632 soldiers died on active duty with an average of 759 deaths per year. The average annual fatality rate was 103.2 per 100,000 ([Table Army-1](#)). The distribution of the primary causes of death are presented in Figure Army-1a for males and Figure [Army-1b](#) for females.

Males had an overall fatality rate (109.3 per 100,000) just over twice the rate for females. The rate for whites (110.4) was comparable to the rate for males (109.3) while the rate for the middle-age group was the lowest across the three age groups-84.3 per 100,000 ([Table Army-1](#)).

In 1985 the significantly elevated rates for males, whites and soldiers aged 17 to 24 was due to the Gander, Newfoundland, air crash ([Table Air Force-2](#)). Similarly, elevated rates in 1991 in the same subgroups, as well as in the oldest age group, were a result of the casualties from the Persian Gulf War ([Figure Army-2](#)).

Unintentional Injury

From 1980 through 1993, 6,375 soldiers on active duty died as a result of unintentional injuries at a rate of 61.9 per 100,000. Males had a rate (66.1 per 100,000) about 2.4 times greater than the rate for females ([Table Army-1](#)). The rate among whites (68.1 per 100,000) was noticeably higher than the rates for blacks and persons of other races. Rates steadily decreased as age increased. Similar temporal trends were observed for unintentional injury rates as for all causes ([Table Army-2](#)). The extraordinary rate increase noted in 1985, particularly among 17-to-24-year-olds, was due directly to the DC-8 air crash which killed 248 soldiers from the 101st Airborne Division ([Figure Army-3](#)).

Disease and Illness

Two thousand seventy eight Army personnel died from natural causes at a rate of 20.2 per 100,000 ([Table Army-1](#)). The rate among males (21.4 per 100,000) was two times greater than the rate for females. While the rates for whites and blacks were comparable, 20 to 22 per 100,000, they were about 1.7 times higher than the rates observed for persons of other races. As was seen for the Air Force, rates increased as age increased, particularly from the middle to the oldest age groups where there was a 4.7-fold increase. Rates generally decreased during the 14-year period; however, among females rates remained relatively steady-about 11 per 100,000 ([Table Army-2](#) and [Figure Army-4](#)).

Suicide

During the period 1980 through 1993, 1,291 soldiers committed suicide at an annual rate of 12.5 per 100,000 ([Table Army-1](#)). The rate among men (13.3 per 100,000) was slightly greater than two times the rate for women. The rate for whites and persons of other races were similar. The rate for each age group was greater than 12 per 100,000. Of particular note was the overall increase observed among males—from 11.9 per 100,000 in 1980 to 16.5 per 100,000 in 1993, a 39% increase. ([Table Army-2](#)). Overall suicide rates during the 14 years were variable as shown in [Figure Army-5](#).

Homicide

Six hundred fifty seven Army personnel were victims of murder from 1980 through 1993 at a rate of 6.4 per 100,000 ([Table Army-1](#)). The rate among females (8.6 per 100,000) was 1.5 times greater than the rate for males. The rate for blacks (9.6 per 100,000) was twice that of both whites and soldiers of other races. Homicide rates decreased by about 25% between each of the age groups, from 7.5 per 100,000 among 17-to-24-year-olds to 3.9 per 100,000 among men and women older than 34. Except for increases in 1985 and 1987, overall homicide rates had been decreasing through 1990 ([Table Army-2](#) and [Figure Army-6](#)); however, a sharp increase was observed in 1991, most likely caused by rate increases among males, blacks, and 17-to-24-year-olds.

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National Mortality Profile of Active Duty Personnel in the
U.S. Armed Forces: 1980-1993

Marine Corps

Ranked Fatality Rate Profile: Marine Corps

Category	Service	Rate *
All-cause Mortality	Marine Corps (1)	122.5
	Army (2)	103.2
	Navy (3)	96.5
	Air Force (4)	72.7
Unintentional Injury (leading cause of death)	Marine Corps (1)	77.1
	Army (2)	61.9
	Navy (3)	59.4
	Air Force (4)	42.1

* Rates Per 100,000 Persons.

Demographic Profile: Marine Corps

Demographic Group	1980 Number Percent	1993 Number Percent	Percent Change
Male	180,439 (96.4)	169,075 (95.7)	-6.3
Female	6,750 (3.6)	7,659 (4.3)	13.5
White	141,107 (75.4)	133,109 (75.3)	-5.7
Black	38,991 (20.9)	29,174 (16.5)	-25.2
Other	7,091 (3.8)	14,451 (8.1)	103.8
17 to 24	133,334 (71.2)	104,820 (59.3)	-21.4
25 to 34	40,774 (21.8)	49,249 (27.9)	20.8
35 +	13,081 (7.0)	22,665 (12.8)	73.3

Key Findings

- From 1980 through 1993, the overall fatality rate for all members of the Marine Corps decreased Mortality by 46.9% from 158.7/100,000 to 84.3/100,000--largest percentage drop of all the services.

- Members of the Marine Corps experienced the highest all-cause mortality rate (122.5/100,000), unintentional injury fatality rate (77.1/100,000), suicide rate (14.0/100,000), and homicide rate (7.4/100,000) of all the services.
 - Members of the Marine Corps ranked the lowest (10.9/100,000) of the four services for disease- and illness-related mortality.
 - From 1980 through 1993, Marines collectively experienced the largest increase in the two older (25 plus years) age groups of all the services.
-

Marine Corps

All Causes

For the period 1980 through 1993, 3,314 Marine Corps personnel died on active duty, an average of 237 annually. The average annual fatality rate was 122.5 per 100,000, the highest overall death rate across the four military services. The distribution of the primary causes of death is presented in [Figure Marine Corps-1a](#) for males and [Figure Marine Corps-1b](#) for females; unintentional injury was responsible for 63% of male deaths—the highest proportion observed for any service. Among female marines, homicide accounted for 23% of the deaths—the highest proportion of any service.

Males and whites had an overall fatality rate of about 126 per 100,000 ([Table Marine Corps-1](#)), some 2.6 times higher than the rate for females. All cause death rates steadily decreased as age increased, from 130.4 in the youngest group to 100.6 per 100,000 in the oldest group.

During the 14-year period, overall death rates decreased approximately 46%—a trend observed in all demographic subgroups ([Table Marine Corps-2](#)). The tremendous rate increase experienced in 1983 was directly attributable to the 234 young marines killed in the terrorist attack on the Marine Barracks in Beirut, Lebanon, and the increase in 1991 was due to the Persian Gulf War in Southwest Asia. ([Figure Marine Corps-2](#)).

Unintentional Injuries

The Marine Corps experienced the fewest unintentional injury-related deaths (2,084) and the highest rate (77.1 per 100,000) compared to the other services. The rate for men (79.7 per 100,000) was nearly 4 times greater than the rate for women ([Table Marine Corps-1](#)). The rate among whites (82.5 per 100,000) was about 25% greater than the rates among blacks and marines of other races. Rates decreased as age increased. Although there was some variability in rates over the 14-year period within the various demographic subgroups, the overall unintentional injury fatality rate decreased about 55% ([Table Marine Corps-2](#)). Of particular note is the influence of the Persian Gulf War in the increased rates observed for 1991 ([Figure Marine Corps-3](#) and [Table Marine Corps-2](#)).

Disease and Illness

The 296 disease and illness-related deaths in the Marine Corps from 1980 through 1993 represented the fewest of any service over that same time period and the rate of 10.9 per 100,000 was also the lowest across

all services ([Table Marine Corps-1](#)). The rate among males (11.2 per 100,000) was slightly less than twice the female rate. The rates were comparable for blacks and persons of other races (14 to 15 per 100,000) and exceeded the rate for whites by about 30%. Fatality rates increased as age increased; there was a 5-fold increase from the youngest to the oldest group. Although the overall rate decreased approximately 60% over the 14-year period, there was a significant amount of variability from year to year. ([Table Marine Corps-2](#) and [Figure Marine Corps-4](#)). From 1985 to the end of the period, there were no deaths due to natural causes among female marines.

[Suicide](#)

Three hundred seventy eight marines died at their own hand from 1980 through 1993 at a rate of 14.0 per 100,000, which was the highest rate of any service. The rate among males was 1.8 times greater than the rate among females (8.1 per 100,000) ([Table Marine Corps-1](#)). The rate among whites (14.3 per 100,000) was the highest of any race group. The rate for blacks (12.9 per 100,000) was about twice the rate for the other two races. Suicide rates decreased slightly from the youngest to the oldest age groups. The annual rate of suicide exhibited some variability from year to year; rates among males increased from 14.4 per 100,000 in 1980 to 18.9 per 100,000 in 1993, an overall 31% increase-with a 50% rate increase noted between 1992 and 1993 ([Table Marine Corps-2](#) and [Figure Marine Corps-5](#)).

[Homicide](#)

The rate at which the 200 marines were murdered (7.4 per 100,000) was the highest homicide rate observed across the four services. The rate for females (11.3 per 100,000) exceeded the rate for males by about one-third ([Table Marine Corps-1](#)). The rates among whites and persons of other races were comparable but only about half the rate among blacks (12.9 per 100,000). The rate of homicide among the youngest marines (8.3 per 100,000) was twice the rate for the oldest marines. The highest annual rate during the 14-year period occurred in 1980, after which rates generally decreased ([Table Marine Corps-2](#) and [Figure Marine Corps-6](#)). A slight increasing trend is noted for males from 1989 through the end of the period.

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National Mortality Profile of Active Duty Personnel in the
U.S. Armed Forces: 1980-1993

Navy

Category	Service	Rate *
All-cause Mortality	Marine Corps (1)	122.5
	Army (2)	103.2
	Navy (3)	96.5
	Air Force (4)	72.7
Unintentional Injury (leading cause of death)	Marine Corps (1)	77.1
	Army (2)	61.9
	Navy (3)	59.4
	Air Force (4)	42.1

* Rates Per 100,000 Persons.

Demographic Profile: Navy

Demographic Group	1980 NumberPercent	1993 Number Percent	Percent Change
Male	490,063 (93.2)	437,193 (89.3)	-10.8
Female	35,999 (6.8)	52,522 (10.7)	45.9
White	438,967 (83.4)	377,409 (77.1)	-14.0
Black	55,631 (10.6)	81,035 (16.6)	45.7
Other	31,464 (6.0)	31,271 (6.4)	-0.6
17 to 24	288,443 (54.8)	200,201 (40.9)	-30.6
25 to 34	162,006 (30.8)	189,137 (38.6)	16.8
35+	75,613 (14.4)	100,377 (20.5)	32.8

Key Findings

- From 1980 through 1993, the overall fatality rate for all members of the Navy decreased by 45.7% from 125.8/100,000 to 68.2/100,000.
- Members of the Navy had the lowest suicide rate (11.0/100,000) among men and women of all the services.

- From 1980 through 1993, the Navy experienced the largest increase (45.9%) in females and the largest increase (45.7%) in blacks of all the services.
 - Navy blacks were victims of homicide at a rate (12.8/100,000) over three times higher than the rate among whites (4.2/100,000).
-

Navy

All Causes

For the 14-year period from 1980 through 1993, 7,485 men and women in the Navy died while serving on active duty; an average of 535 deaths per year. The average annual fatality rate was 96.5 per 100,000 ([Table Navy-1](#)). The distribution of the primary causes of death is presented in Figure [Navy-1a](#) for males and Figure [Navy-1b](#) for females.

The overall rate of death among males, whites and the oldest sailors was comparable-about 101 per 100,000. While the overall fatality rate for whites was twice the rate among persons of other races, it was only 10% higher than the rate for blacks (91.1 per 100,000). The rate among sailors aged 25 to 34 was the lowest across any age group ([Table Navy-1](#)).

From 1980 through 1993, the overall fatality rate decreased by about 45%; similar decreasing trends were noted in all demographic subgroups ([Table Navy-2](#)). The noticeable increases in rates in 1983, 1987 and 1991 were due to hostile fire deaths, the Beirut terrorist attack, 38 men killed on the USS Stark by an Iraqi warplane missile, and the Persian Gulf War, respectively ([Figure Navy-2](#)).

Unintentional Injury

The 4,607 Navy personnel who died from unintentional injuries did so at a rate of 59.4 per 100,000. The rate for males (62.8 per 100,000) was higher than blacks (49.4 per 100,000) and about 2.5 times greater than the rate for females ([Table Navy-1](#)). The rate for persons of other races (22.1 per 100,000) was about one-half the rate among blacks and one-third the rate among whites. Rates decreased as age increased. Except for some minor fluctuations, rates steadily decreased over the 14-year period-about 54% ([Table Navy-2](#) and [Figure Navy-3](#)).

Disease and Illness

Natural causes accounted for a total of 1,290 deaths among active-duty sailors during the 14-year period, 1980 through 1993. The disease- and illness-related fatality rate was 16.6 per 100,000 ([Table Navy-1](#)). The rates for men and for persons in all race categories were similar-about 17 per 100,000. The fatality rate steadily increased as age increased and showed a 7-fold increase from the youngest to the oldest group. Overall rates decreased about 45% during the 14-year period with several short-term increases occurring in 1987 and 1992 ([Table Navy-2](#) and [Navy-4](#)).

Suicide

Eight hundred fifty three men and women in the Navy died as a result of self-inflicted injuries; at an annual rate of 11.0 per 100,000 ([Table Navy-1](#)). Whites, males and persons aged 17 to 34 had comparable rates of about 12 per 100,000. These rates were about 3 times higher than the rates for females and twice the rate for blacks and Navy personnel of other races. Suicide rates have remained relatively steady over the period, although there was a 4-year decline noted from 1987 to 1990 ([Table Navy-2](#) and [Navy-5](#)).

Homicide

The 405 Navy personnel who were victims of homicide between 1980 and 1993 were killed at a rate of 5.2 per 100,000, a comparable rate in both males and females. The rate among blacks (12.8 per 100,000) was about three times greater than the rate for whites and over six times greater than the rate observed for persons of other races. Age-group-specific rates decreased as age increased ([Table Navy-1](#)). Although the overall rate of homicide decreased by about 30% over the 14 years, annual rates fluctuated continuously from year to year ([Table Navy-2](#) and [Figure Navy-6](#)).

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National Mortality Profile of Active Duty Personnel in the U.S. Armed Forces: 1980-1993

DISCUSSION

Casualty data, available from the DoD Report of Casualty (DD Form 1300), provide timely and valuable demographic information on all active-duty deaths. These fatality data can be used in four important ways. First, new or previously unrecognized hazards can be identified. For example Report of Casualty data showed that military women were victims of homicide at a higher rate compared to their male counterparts. Second, high-risk groups can be identified and targeted for further research and prevention efforts. In addition to the young women who have been identified to be at high risk of homicide, other groups such as white males aged 20 to 34 have been identified to be at considerable risk of suicide when compared to other demographic subgroups.

Third, trends of cause-specific death rates can be followed and interpreted over time. It has been noted that the number of suicides committed annually has remained relatively steady over the 14-year period, but since the size of the military population has been steadily decreasing over the past 5 years, the rate of suicide has therefore been increasing. Although the overall rate of homicide in the military has decreased since 1980, the increasing rates observed from 1989 to 1992 should be watched carefully to see if the trend continues. During this 4-year span, homicide rates increased 130 percent from 2.6 per 100,000 to 6.0 per 100,000. The fact that the rate has increased is not surprising, since the overall rates in the U.S. (for persons age 17 to 54, an age range paralleling the military) have risen about 5% per year from 1987 to 1991-12.8 to 15.8 per 100,000,^{7,9} but the amount of the rate change is alarming.

Finally, the military fatality data can be used to determine the nature and magnitude of a specific cause of death. Both the rates and absolute numbers of deaths are important; rates depict the risk faced by various demographic subgroups while the numbers indicate the magnitude of the problem, or the number of lives that could be saved.

Although it was not within the scope of this report to determine the role that occupation may play in the mortality experience of active duty personnel, the Report of Casualty and other sources of military occupational information could be used for this purpose.¹³ Active-duty white males aged 20 to 34 were identified to be at an increased risk of suicide. Within this group, men working in military law enforcement and security specialties appear to be particularly vulnerable to suicide when compared to men in other military occupations.¹⁴ Because the scope and work of these groups may differ from service to service, additional occupational information should be used to supplement the Report of Casualty to facilitate a better understanding of the complex etiology of suicide and ameliorate the occupational factors that may exacerbate the risk of suicide.

Caution should be exercised when comparing these cause- and demographic-specific fatality rates to other populations. Excluded from the findings presented here were military personnel who have been diagnosed with a terminal illness or injury, placed on disability retirement, and subsequently died within a one year period. To examine the magnitude and nature of these cases, a separate data collection and

analysis was performed on a cohort of U.S. Army retirees who were placed on disability retirement for the years 1993 through 1995.¹⁵ Findings showed that these fatalities comprised approximately 10% of all U.S. Army fatalities and that death due to illness and disease was the primary cause. When the disability cases were included with the active-duty cases, the resulting overall fatality rate increased from 94.4 to 104.8 per 100,000 Army personnel for the 3-year period 1991 to 1993. The largest cause-specific increase (nearly two-fold) occurred among retired females who died from illness and disease-related causes. It is expected that the three other services would experience similar rate increases when their disability retirement cases are included.

This report has provided a broad overview of the mortality experience of men and women serving on active duty. The use of calendar year data and the calculation of rates, expressed per 100,000, will assist military commanders and medical personnel in comparing the military mortality experience with overall U.S.⁹ and workforce³ mortality data. Military commanders, in concert with local civilian communities, may find this data useful in developing, implementing and evaluating prevention strategies that emphasize those etiologies that account for the highest proportion of cause-specific mortality and mortality and thus have the greatest effect on military readiness. As the active-duty military population decreases in size and the scope of its "non-combat" mission is more clearly defined, it is paramount for military leaders to be able to predict the impact of mortality, especially fatalities due to unintentional injury. All fatalities, and preventable fatalities in particular, result in needless human suffering and act as a drain on military productivity and military readiness.

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DoD Report of Casualty

REPORT OF CASUALTY		<i>(From DoD Component address to be Overprinted here)</i>		REPORT CONTROL SYMBOL	
1. REPORT NUMBER		2. REPORT TYPE		3. DATE PREPARED	
4. SERVICE IDENTIFICATION					
a. NAME (Last, First, Middle Initial)		b. SOCIAL SECURITY NUMBER	c. UNIFORM/RATE	d. OCCUPATION CODE	
e. COMPONENT	f. BRANCH	g. ORGANIZATION			
5. CASUALTY INFORMATION					
a. TYPE	b. STATUS	c. CATEGORY	d. DATE OF CASUALTY	e. PLACE OF CASUALTY	
6. CAUSE AND CIRCUMSTANCES					
g. DUTY STATUS			h. FLIGHT STATUS	i. BODY RECOVERED	
7. BACKGROUND INFORMATION					
a. DATE OF BIRTH	b. PLACE OF BIRTH		c. COUNTRY OF CITIZENSHIP		
d. RACE	e. ETHNIC GROUP	f. SEX	g. RELIGIOUS PREFERENCE		
8. ACTIVE DUTY INFORMATION					
a. PLACE OF ENTRY		b. DATE OF ENTRY	c. HOME OF RECORD AT TIME OF ENTRY		
d. DATE TOUR COMMENCED	e. PRIOR SERVICE INFORMATION		f. REPORT OF EMERGENCY DATA FORM DATE		
9. PAY INFORMATION					
a. PAY GRADE	b. BASIC PAY	c. INCENTIVE (ADDITIONAL PAY (THY USE))			
10. INTERESTED PERSONS (Name, Address and Relationship)					
P					
11. REMARKS (Continue on separate sheet if necessary)					
L					
FOOTNOTES FOR ITEMS 9 AND 10					
1. Adult next of kin.					
2. Beneficiary for gratuity pay in event there is no surviving spouse or child—is designated on record of emergency data.					
3. Beneficiary for unpaid pay allowances—is designated on record of emergency data.					
12. REPORTING INFORMATION				13. REPORT FORM TO FOLLOW	
a. COMMAND AGENCY			b. DATE HERE/50	c. REPORT FORM TO FOLLOW	
12. DISTRIBUTION		13. SIGNATURE			

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National Mortality Profile of Active Duty Personnel in the
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Cause of Death Codes

ICD-9* Rubrics for Military Cause of Death Categories

Category	ICD-9 Rubric
Unintentional Injury	E800-E949
Illness and Disease	N001-N799
Suicide	E950-E959
Homicide	E960-E969
Hostile Action	E990-E999
Other	No defined parameters

*International Classification of Diseases, 9th Revision

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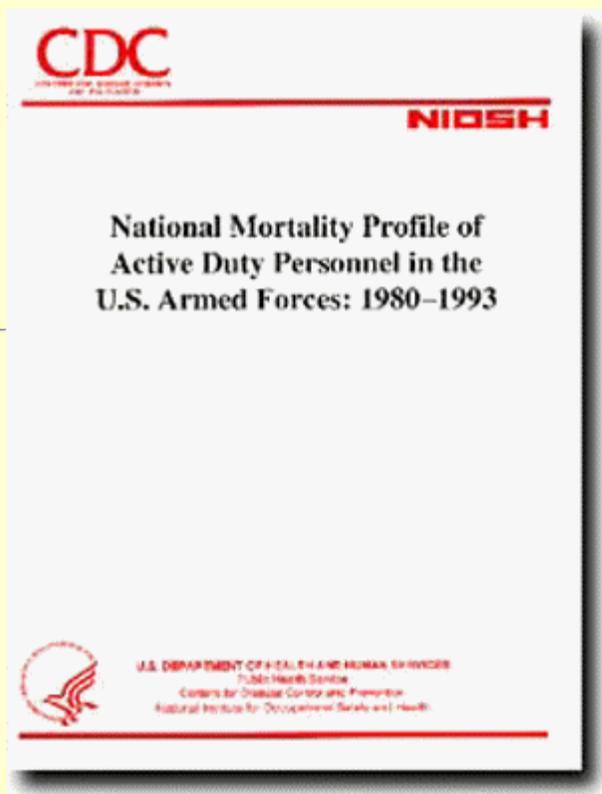
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National Mortality Profile of Active Duty Personnel in the U.S. Armed Forces: 1980-1993

DHHS (NIOSH) PUBLICATION
NO. 96-103 SEPTEMBER 1996

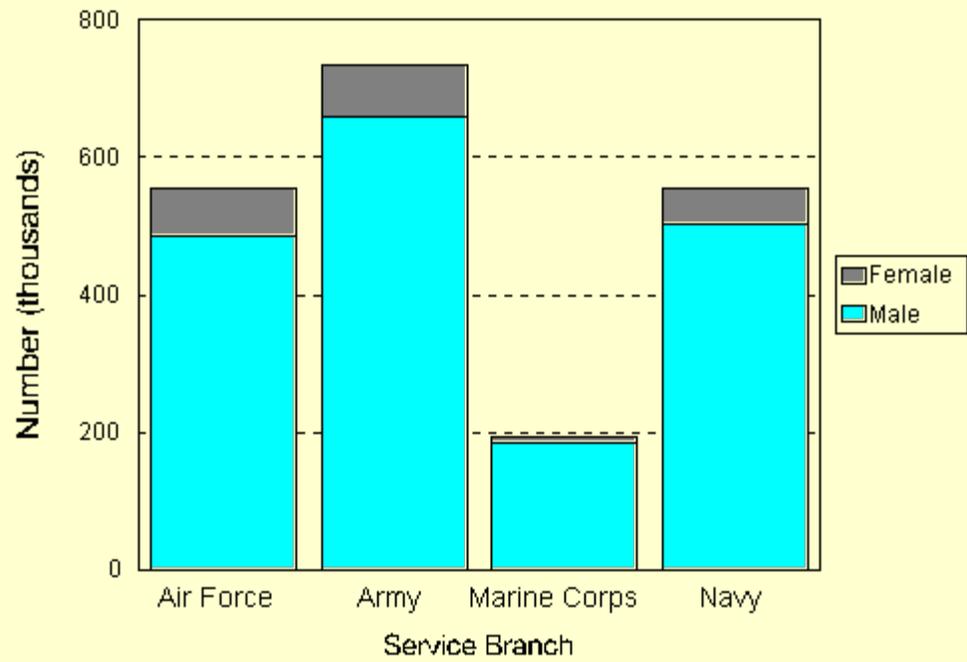
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Figure DOD - 1. Average Yearly Military Active-Duty
Population by Service and Gender, 1980-1993



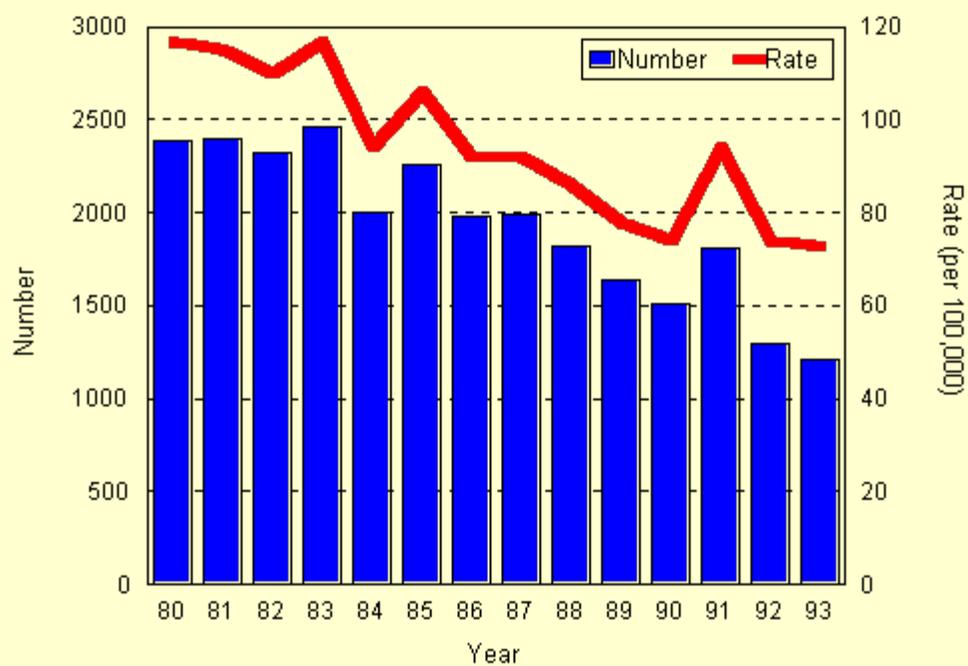
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Figure DOD - 2. Distribution and Rate of All-cause *

Fatality by Year, 1980-1993, N=27,070



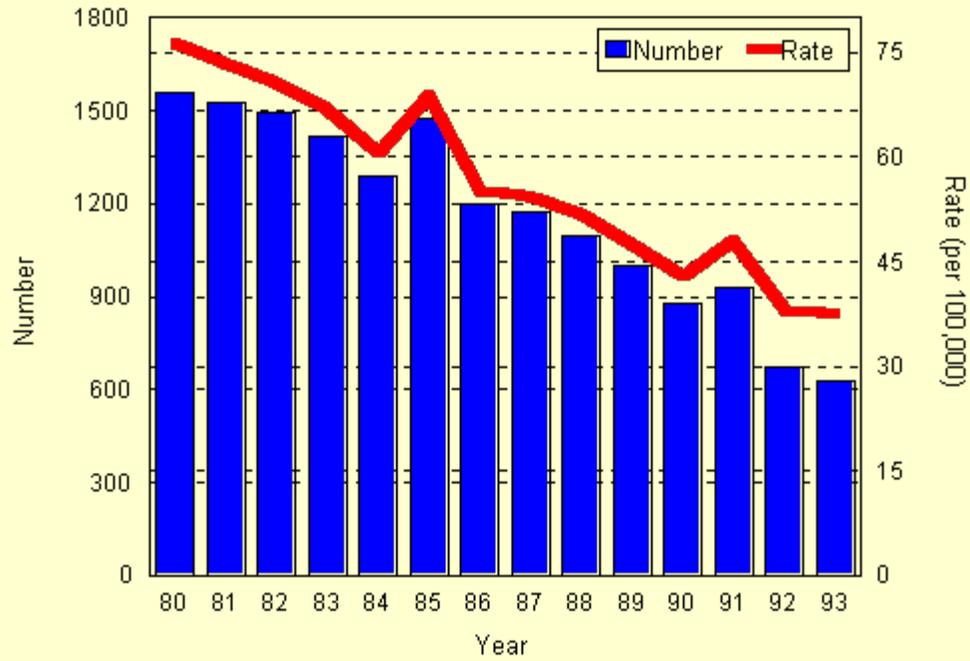
* Includes deaths due to hostile action and those deaths where cause is other, unclassified, or unknown.

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Figure DOD - 3. Distribution and Rate of Unintentional Injury Fatalities by Year, 1980-1993, N=16,330

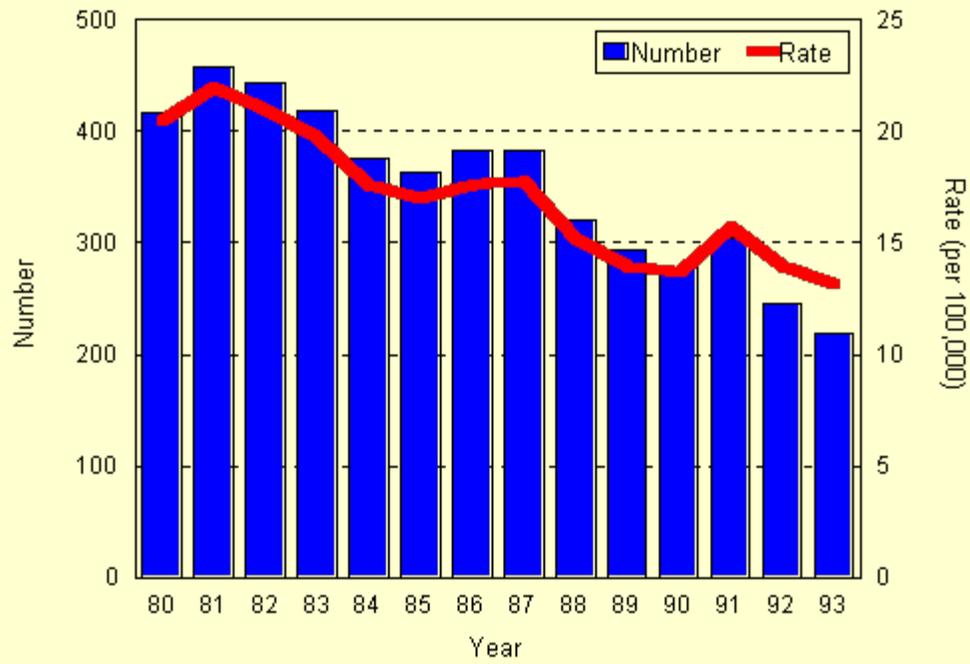


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Figure DOD - 4. Distribution and Rate of Disease and Illness-related Fatalities by Year, 1980-1993, N=4,901

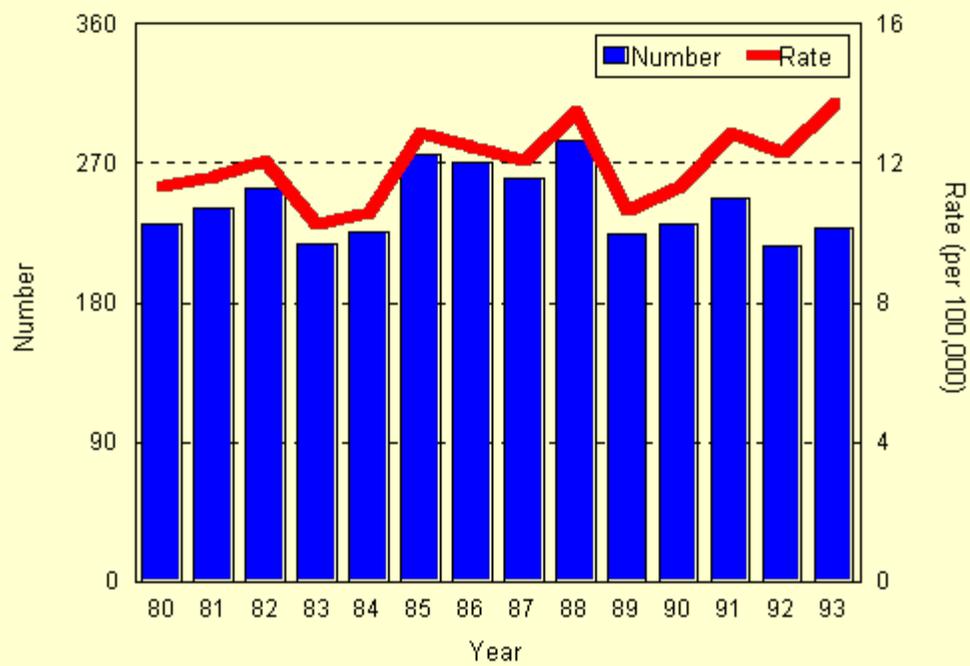


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Figure DOD - 5. Distribution and Rate of Suicide by Year, 1980-1993, N=3,406

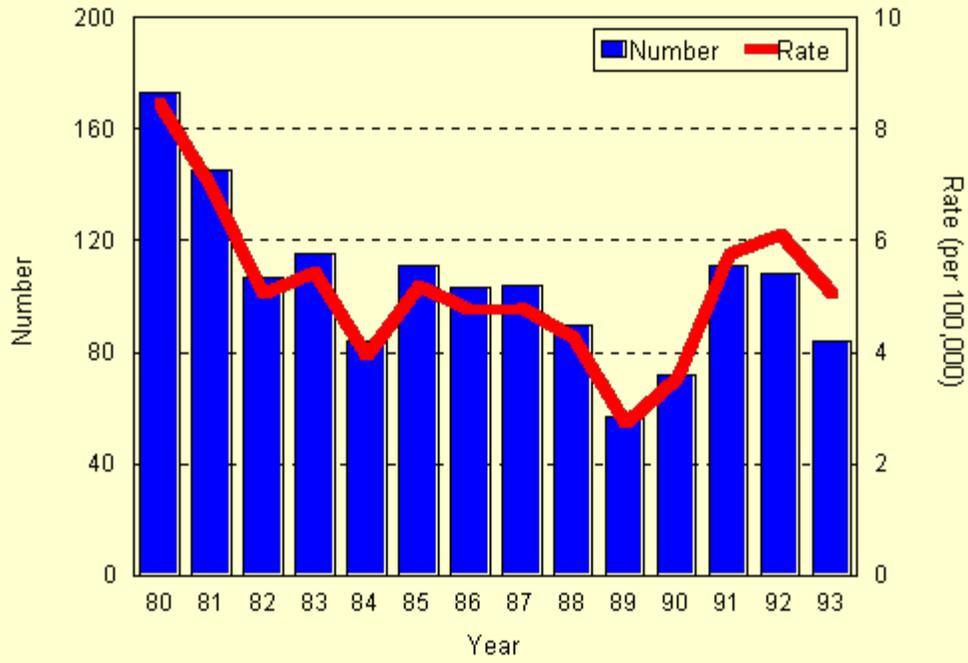


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Figure DOD - 6. Distribution and Rate of Homicide by Year, 1980-1993, N=1,464

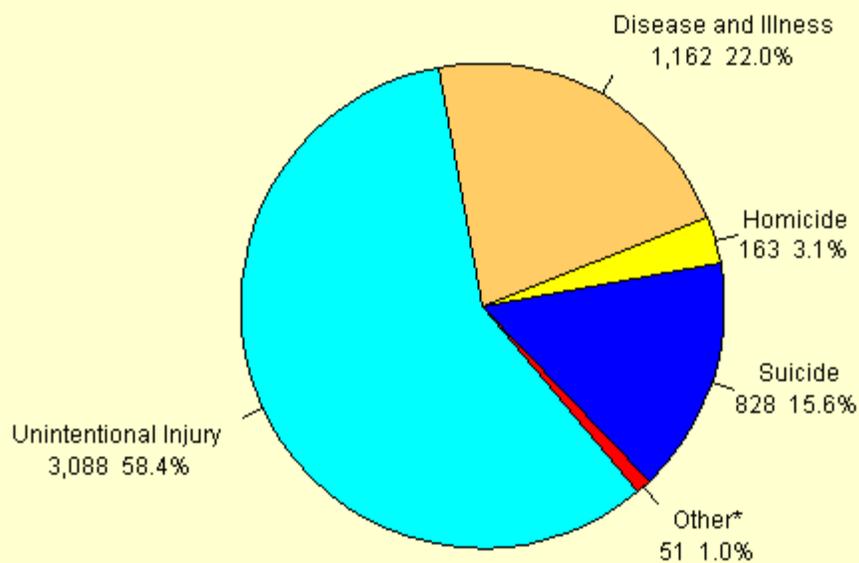


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Figure Air Force - 1a. Distribution of Male Fatalities by Cause of Death, 1980-1993, N=5,292



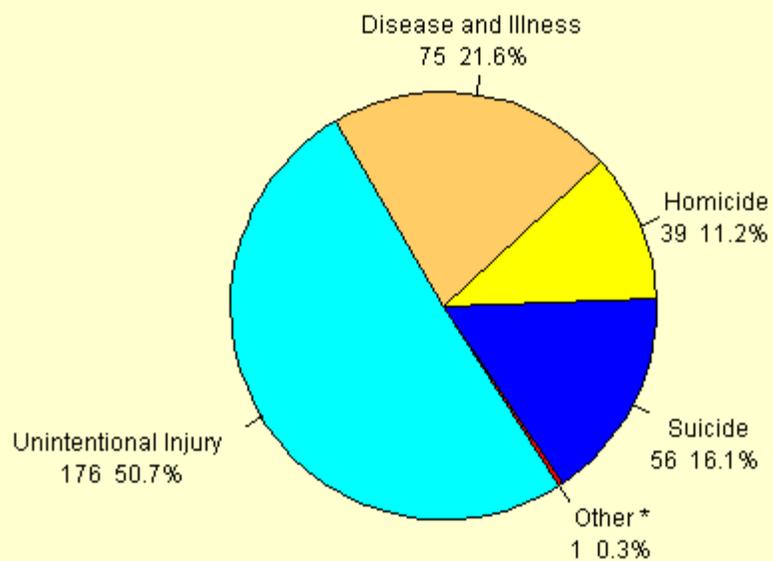
* Includes deaths due to hostile action (n=33) and those deaths where cause is other, unclassified, or unknown (n=18).

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Figure Air Force - 1b. Distribution of Female Fatalities by Cause of Death, 1980-1993, N=347



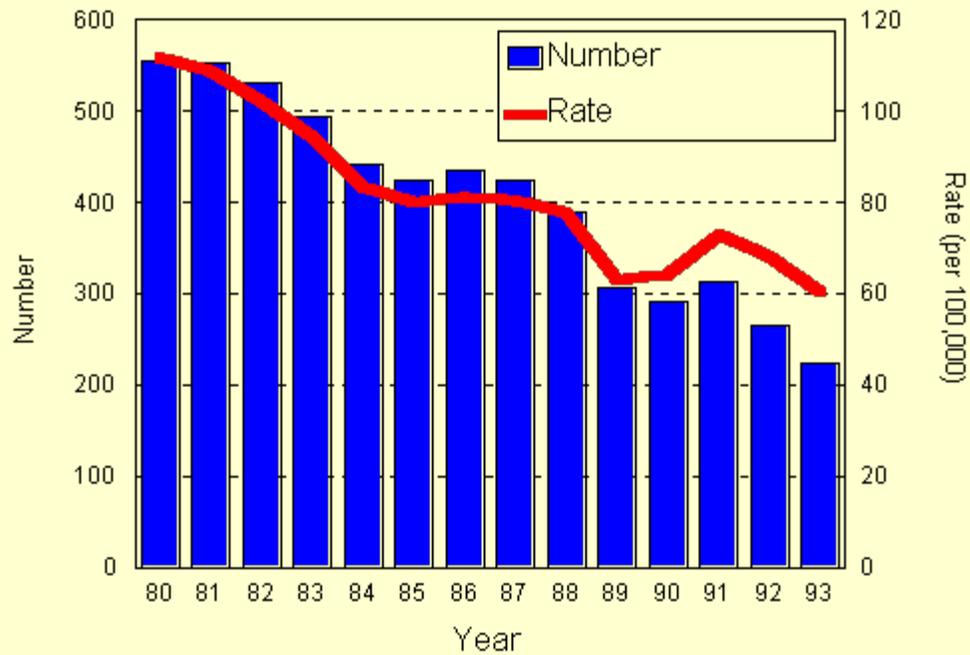
* Includes one death where cause is other.

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Figure Air Force - 2. Distribution and Rate of All-cause *
Fatality by Year, 1980-1993, N=5,639



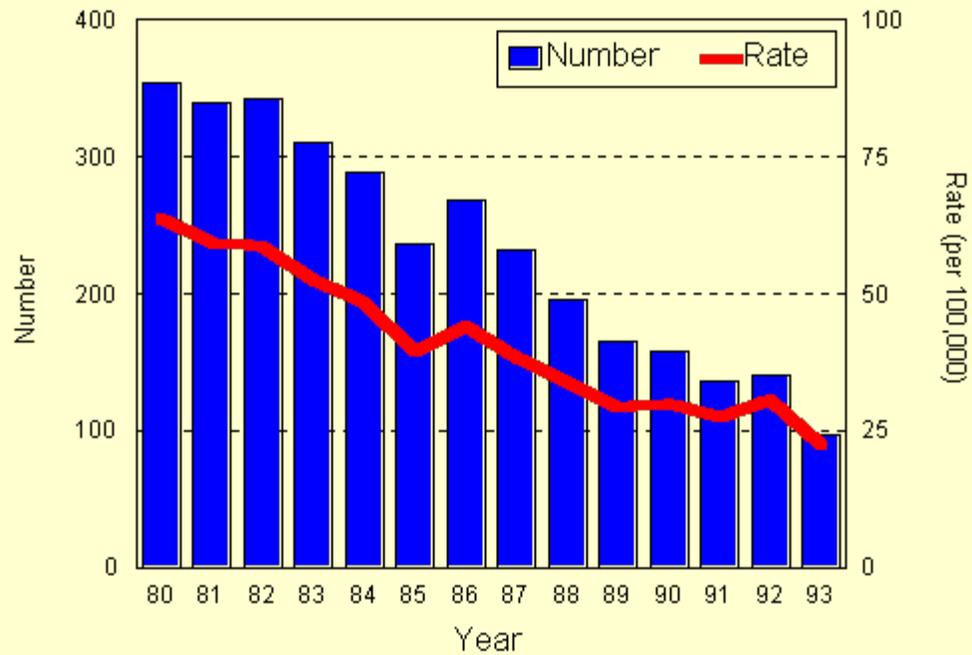
* Includes deaths due to hostile action and those deaths where cause is other, unclassified, or unknown.

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Figure Air Force - 3. Distribution and Rate of Unintentional Injury Fatalities by Year, 1980-1993, N=3,264

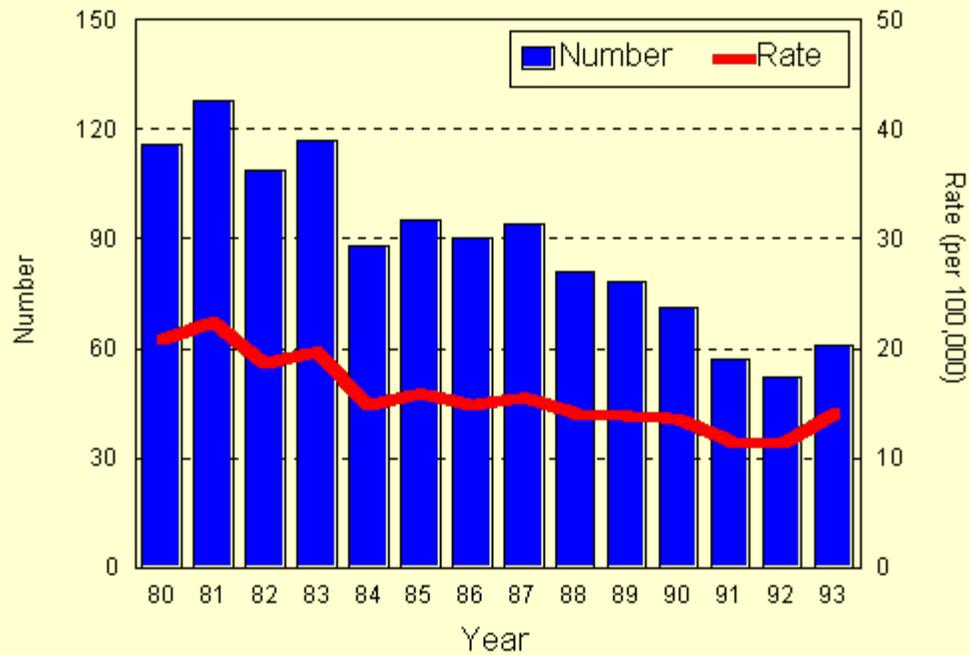


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Figure Air Force - 4. Distribution and Rate of Disease and Illness-related Fatalities by Year, 1980-1993, N=1,237

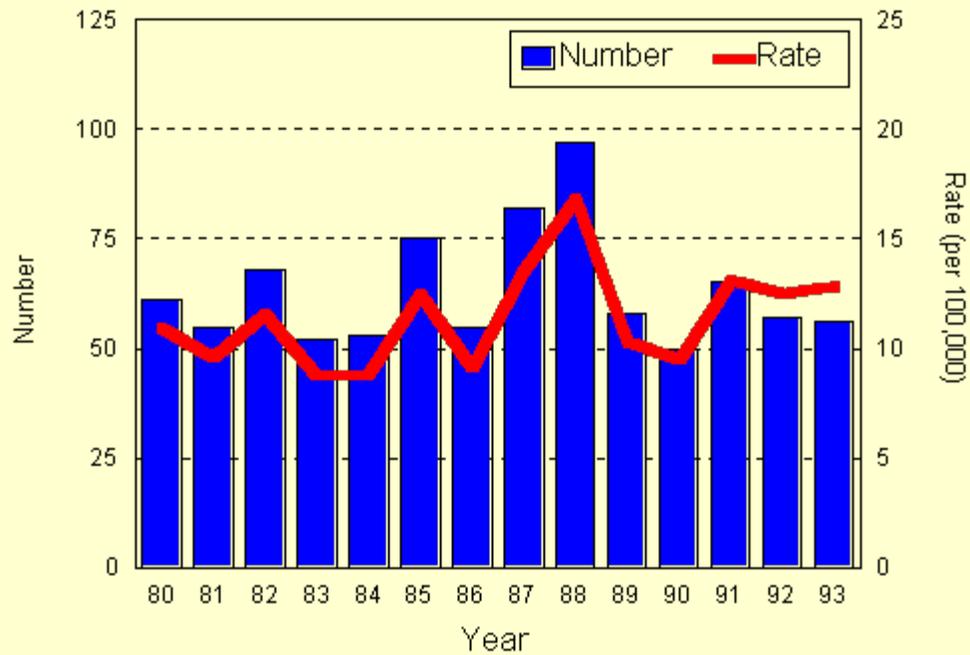


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Figure Air Force - 5. Distribution and Rate of
Suicide by Year, 1980-1993, N=884

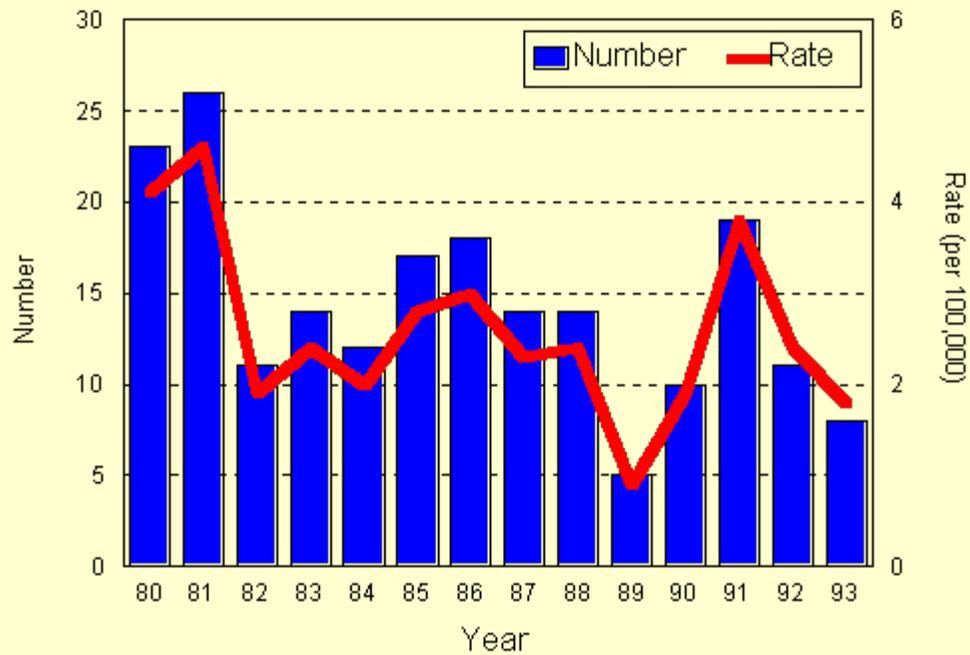


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Figure Air Force - 6. Distribution and Rate of
Homicide by Year, 1980-1993, N=202



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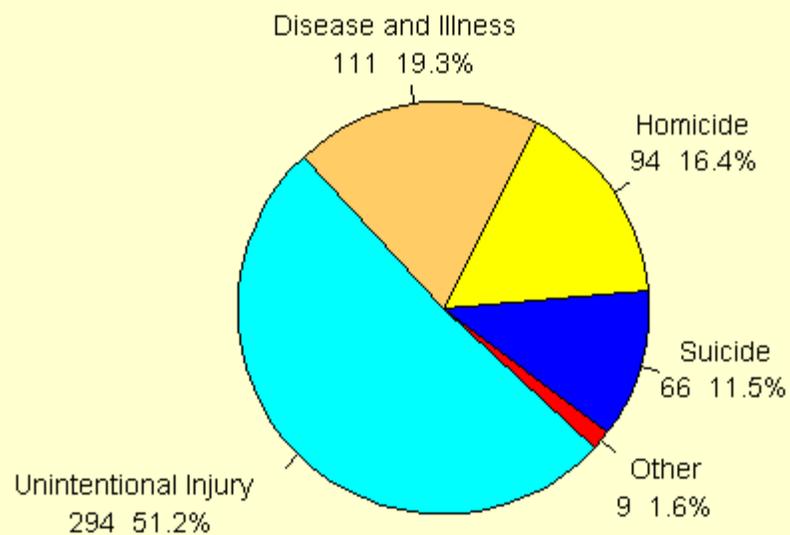


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Figure Army - 1b. Distribution of Female Fatalities by Cause of Death, 1980-1993, N=574



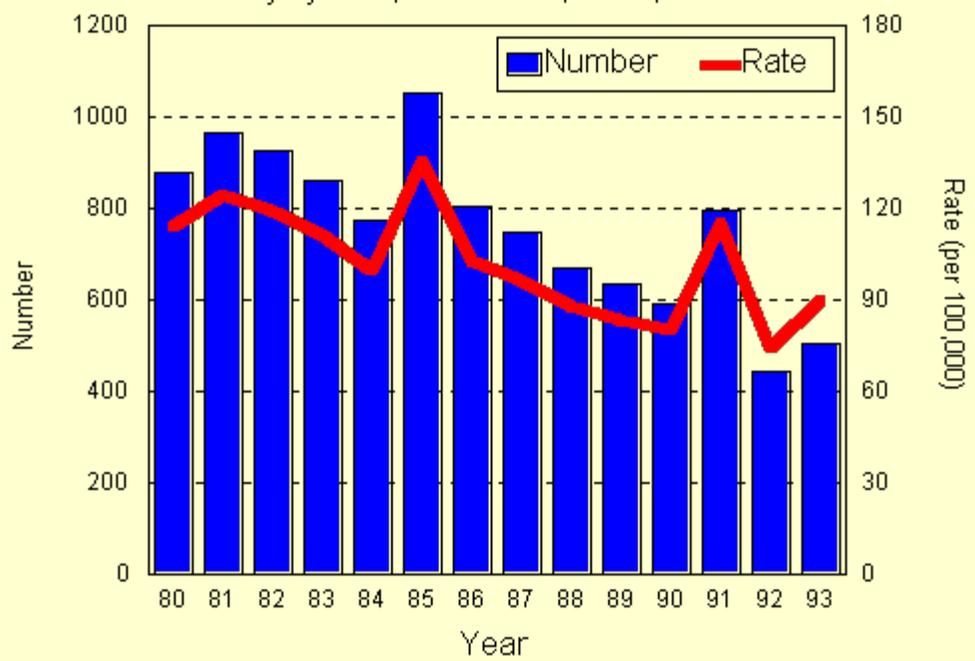
* Includes deaths due to hostile action (n=6) and those deaths where cause is other, unclassified, or unknown (n=3).

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Figure Army - 2. Distribution and Rate of All-cause *
 Fatality by Year, 1980-1993, N=10,632



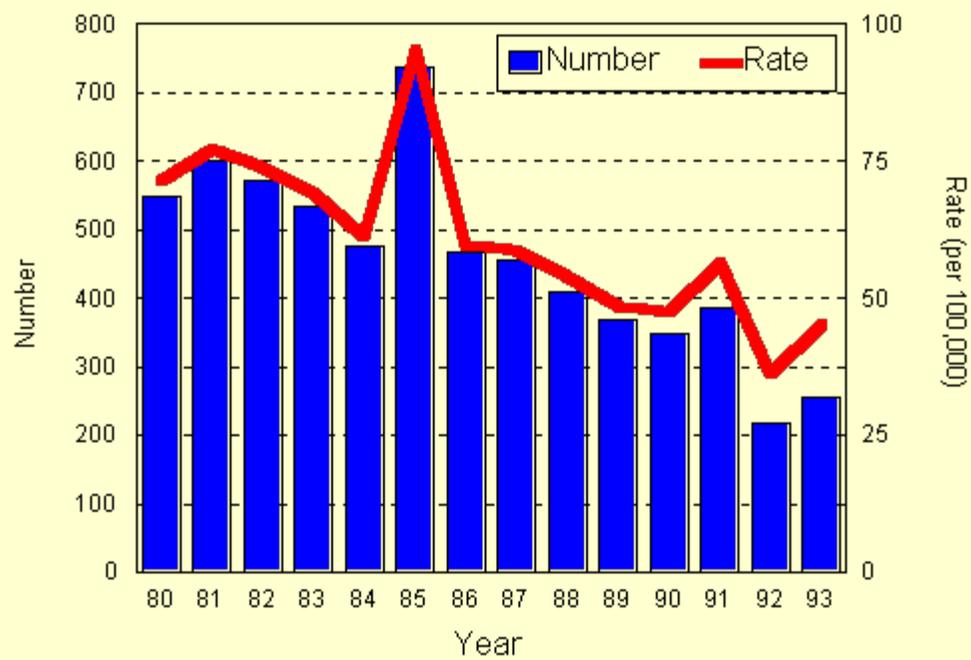
* Includes deaths due to hostile action and those deaths where cause is other, unclassified, or unknown.

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Figure Army - 3. Distribution and Rate of Unintentional Injury Fatalities by Year, 1980-1993, N=6,375

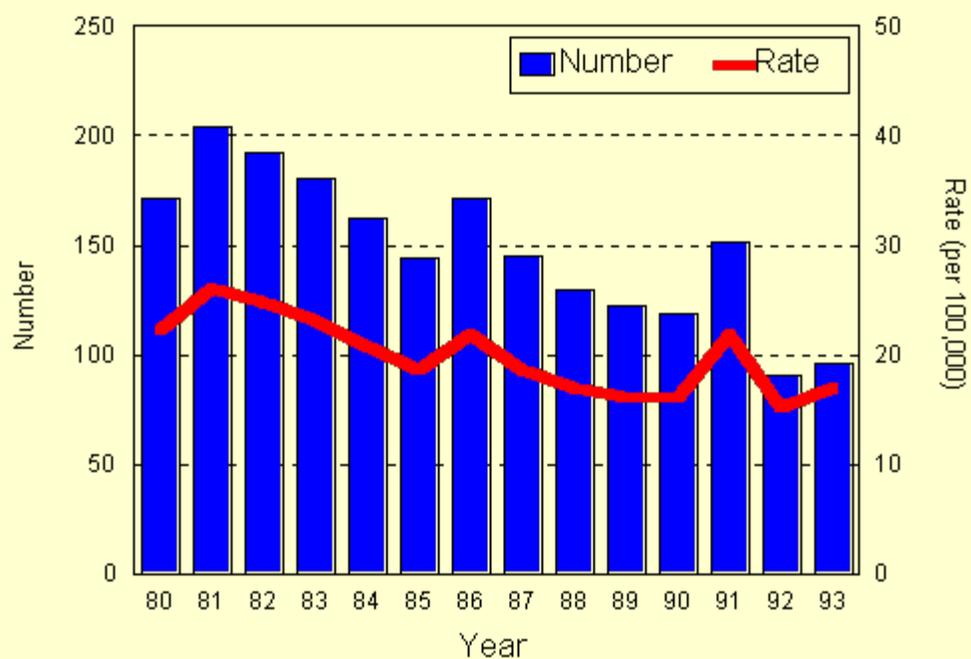


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Figure Army - 4. Distribution and Rate of Disease and Illness-related Fatalities by Year, 1980-1993, N=2,078

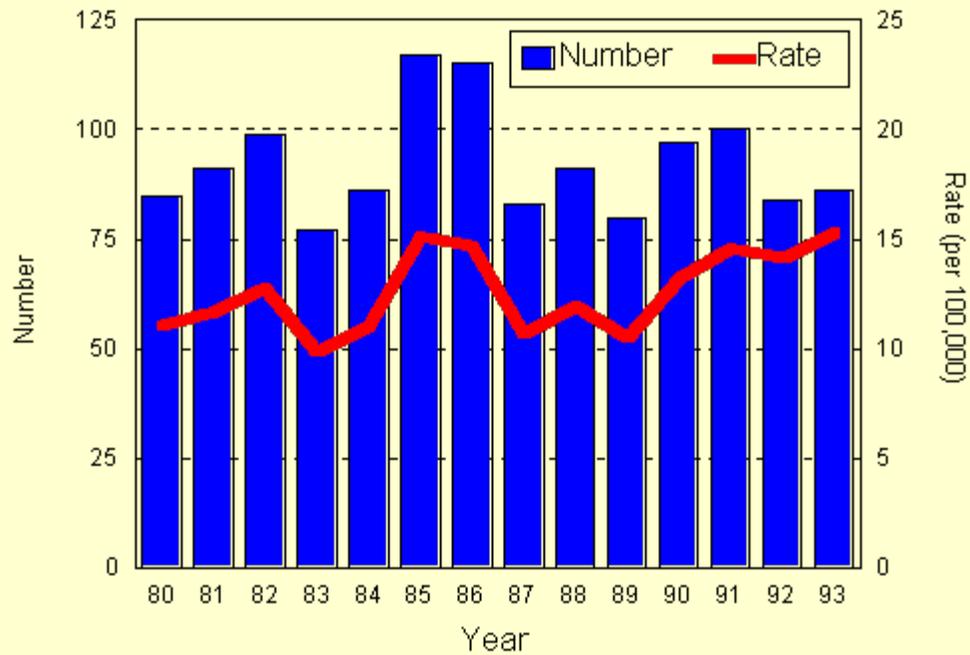


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Figure Army - 5. Distribution and Rate of
Suicide by Year, 1980-1993, N=1,291

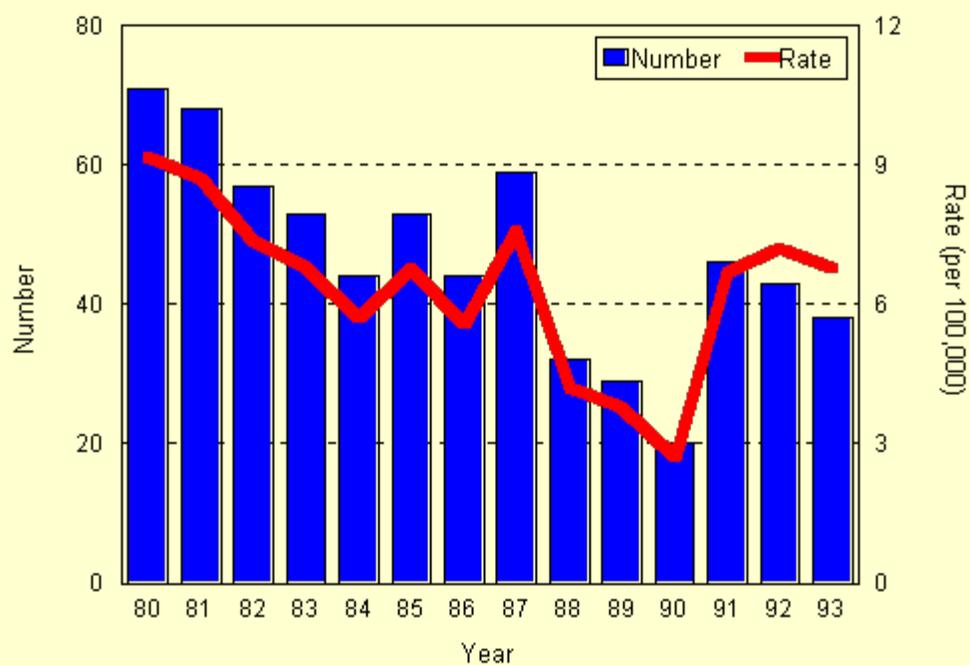


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Figure Army - 6. Distribution and Rate of Homicide by Year, 1980-1993, N=657

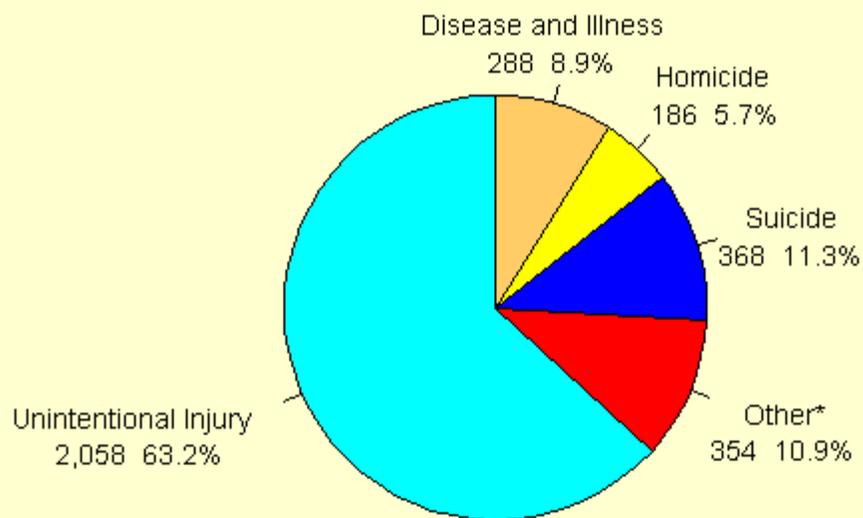


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Figure Marine Corps - 1a. Distribution of Male Fatalities by Cause of Death, 1980-1993, N=3,254



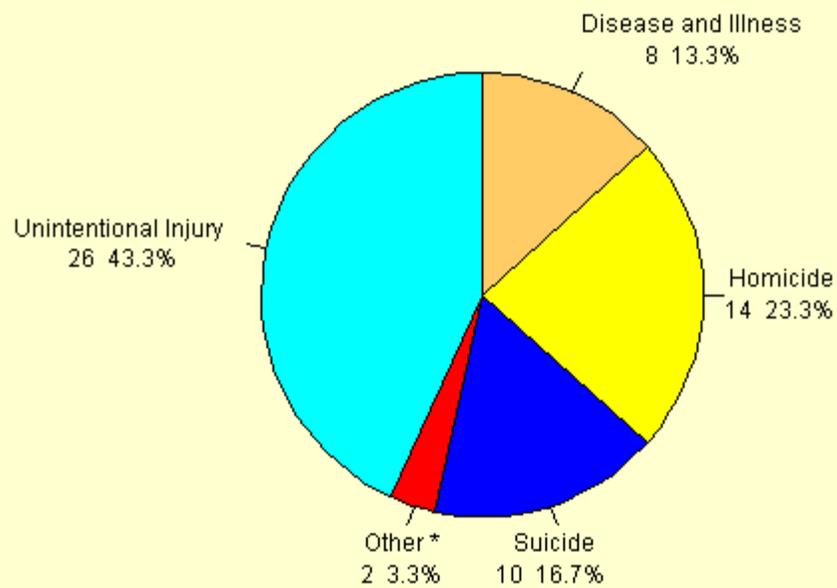
* Includes deaths due to hostile action (n=275) and those deaths where cause is other, unclassified, or unknown (n=79).

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Figure Marine Corps - 1b. Distribution of Female Fatalities by Cause of Death, 1980-1993, N=60



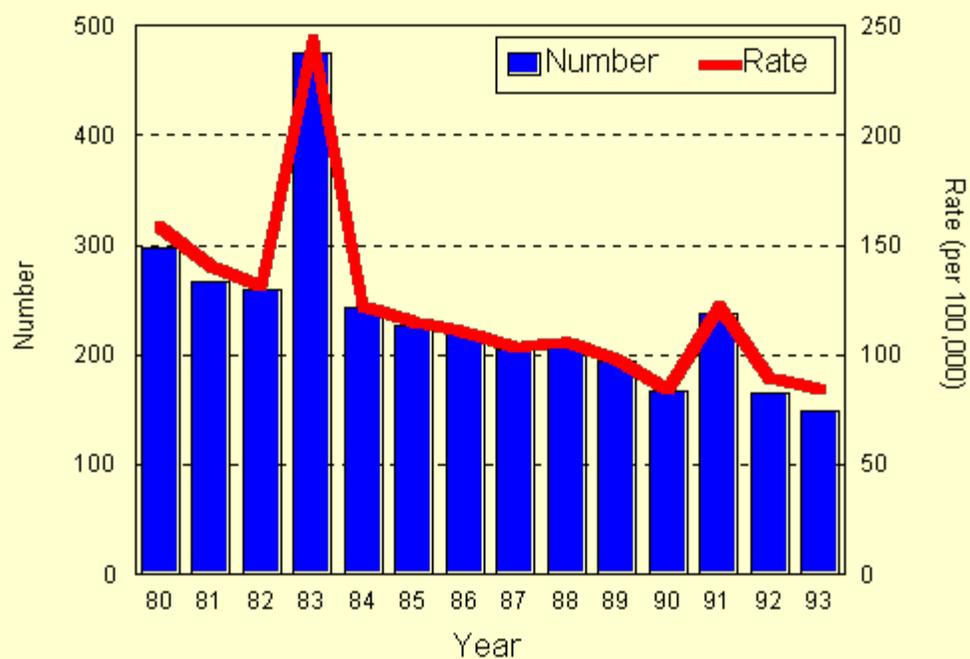
*Includes deaths where the cause is other, unclassified, or unknown.

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Figure Marine Corps - 2. Distribution and Rate of All-cause *
Fatality by Year, 1980-1993, N=3,314



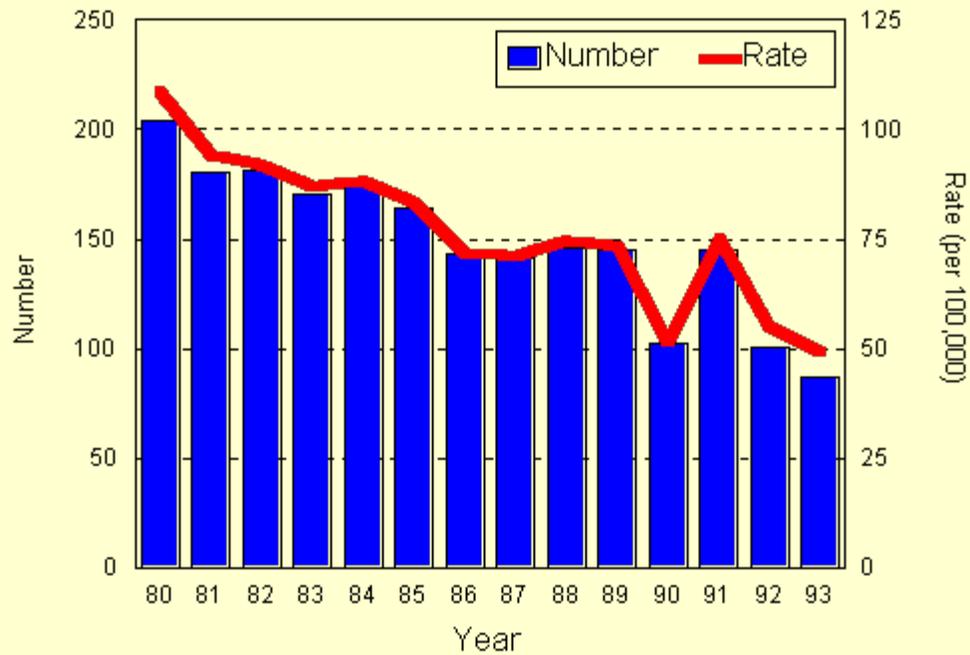
* Includes deaths due to hostile action and those deaths where cause is other, unclassified, or unknown.

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Figure Marine Corps - 3. Distribution and Rate of Unintentional Injury Fatalities by Year, 1980-1993, N=2,084

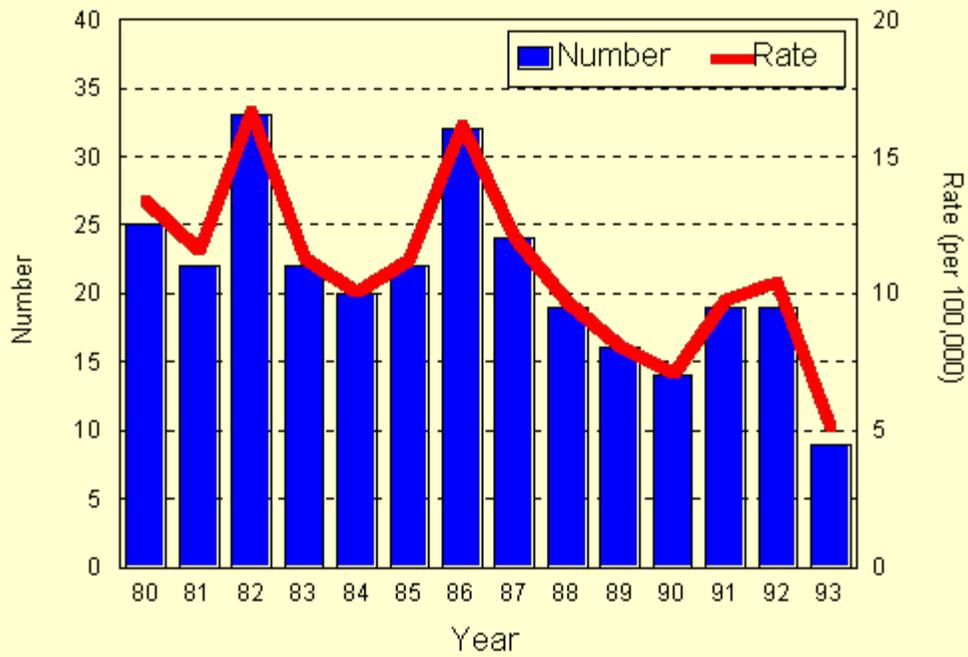


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Figure Marine Corps - 4. Distribution and Rate of Disease and Illness-related Fatalities by Year, 1980-1993, N=296

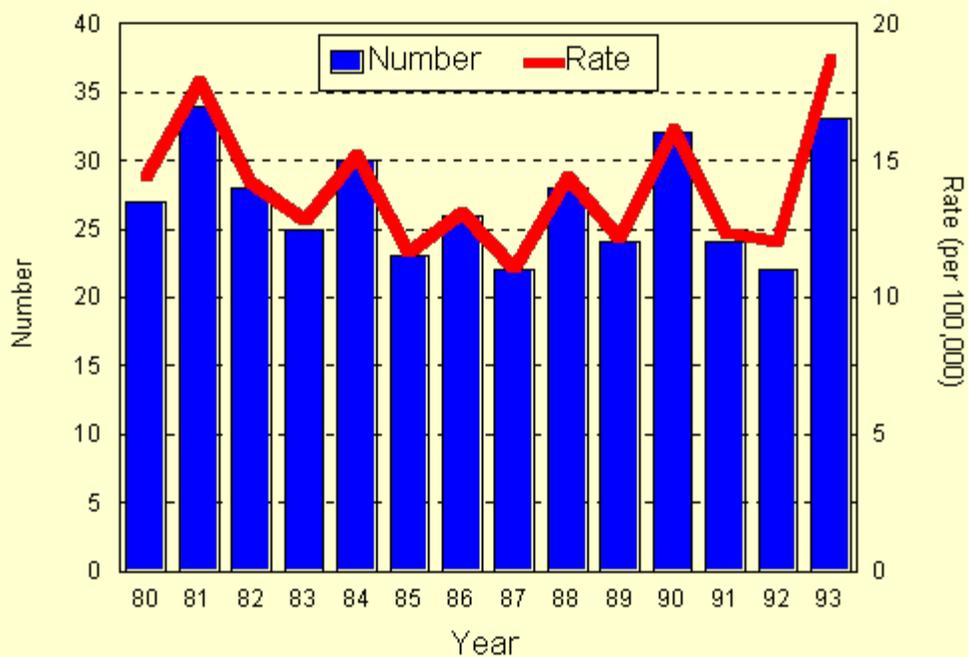


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Figure Marine Corps - 5. Distribution and Rate of Suicide by Year, 1980-1993, N=378

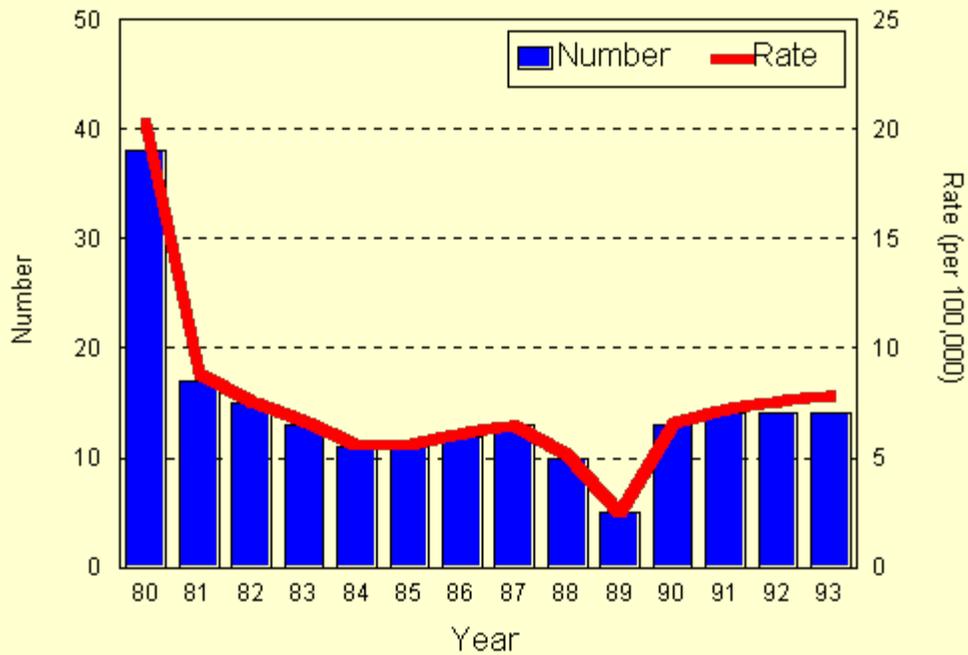


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Figure Marine Corps - 6. Distribution and Rate of Homicide by Year, 1980-1993, N=200

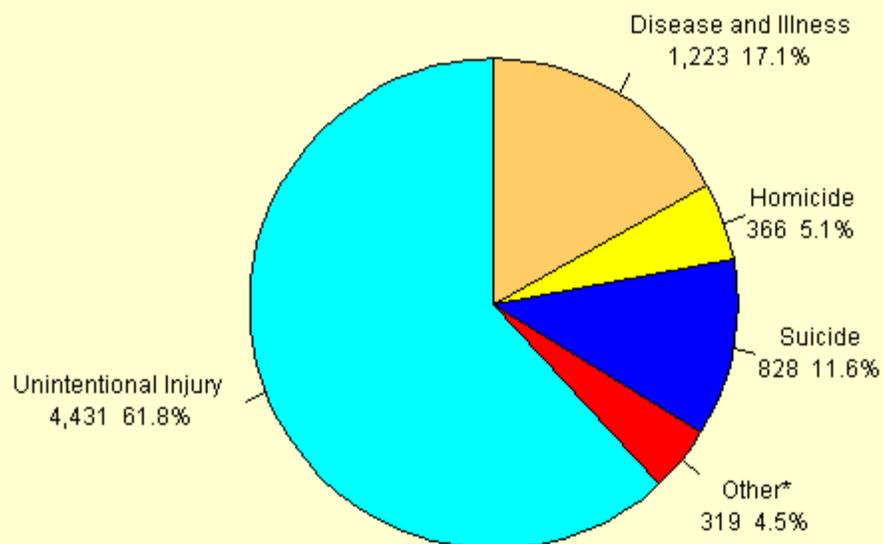


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Figure Navy - 1a. Distribution of Male Fatalities by Cause of Death, 1980-1993, N=7,167



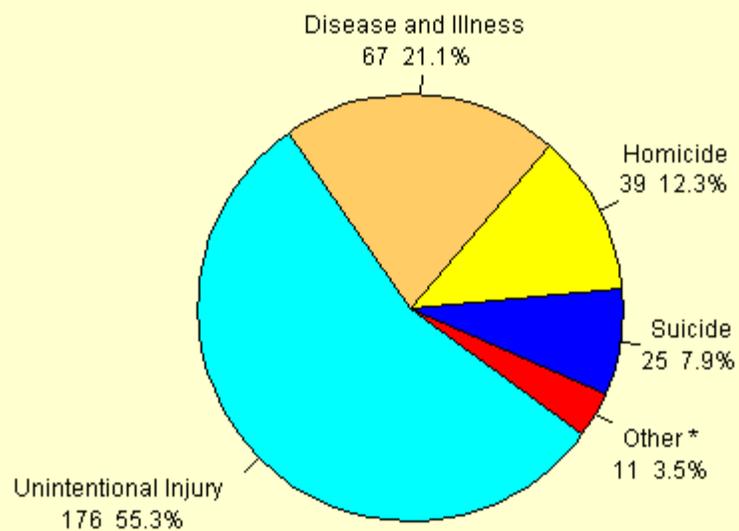
* Includes deaths due to hostile action (n=85) and those deaths where cause is other, unclassified, or unknown (n=234).

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Figure Navy - 1b. Distribution of Female Fatalities by Cause of Death, 1980-1993, N=318



* Includes deaths due to hostile action (n=1) and those deaths where cause is other, unclassified, or unknown (n=10).

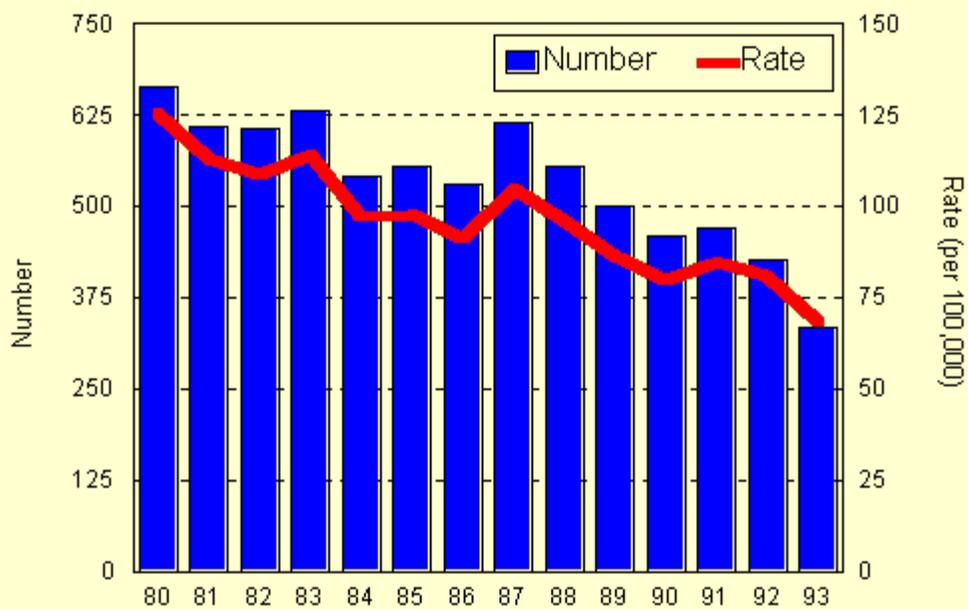
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Figure Navy - 2. Distribution and Rate of All-cause *

Fatality by Year, 1980-1993, N=7,485



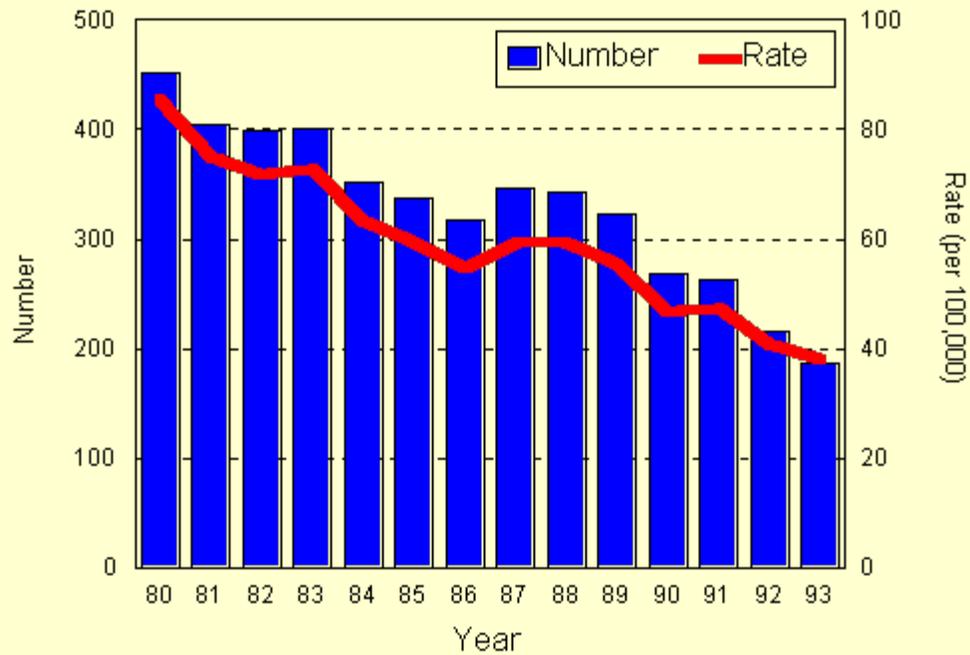
* Includes deaths due to hostile action and all cause deaths where cause is other, unclassified, or unknown.

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Figure Navy - 3. Distribution and Rate of Unintentional Injury Fatalities by Year, 1980-1993, N=4,607

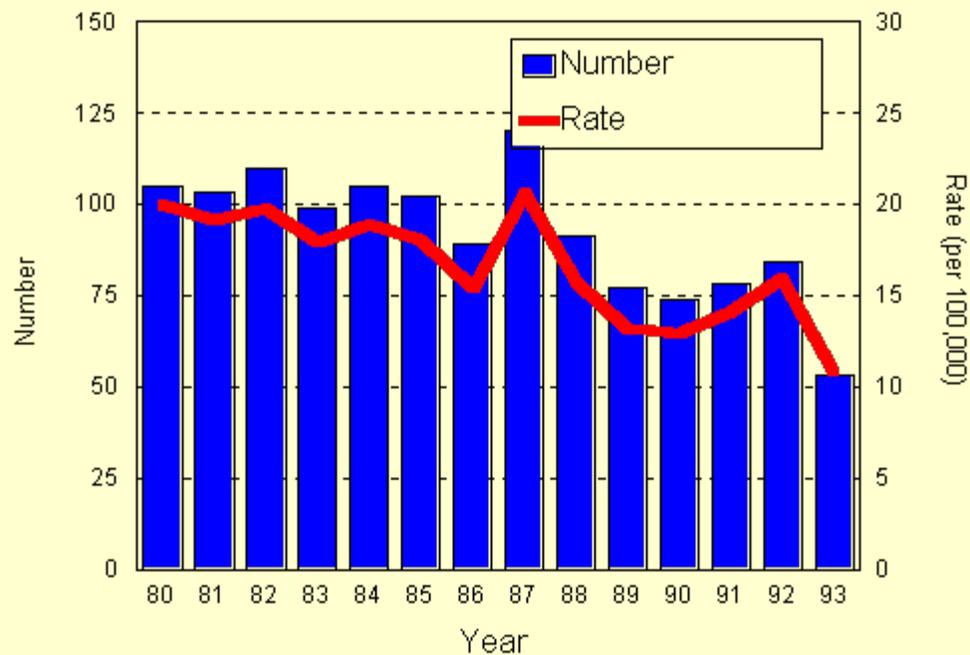


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Figure Navy - 4. Distribution and Rate of Disease and Illness-related Fatalities by Year, 1980-1993, N=1,290

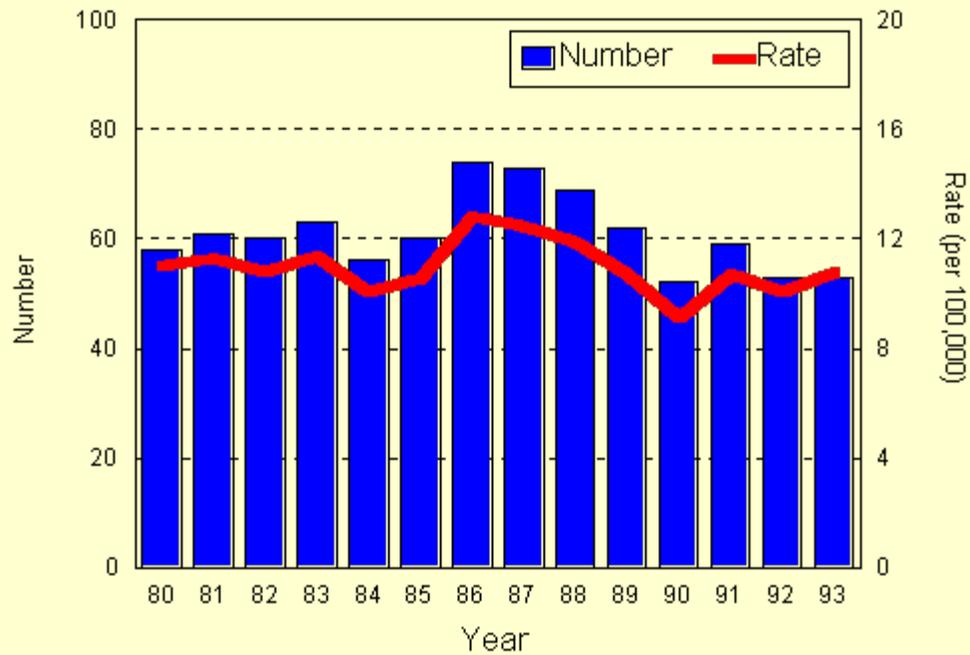


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Figure Navy - 5. Distribution and Rate of
Suicide by Year, 1980-1993, N=853

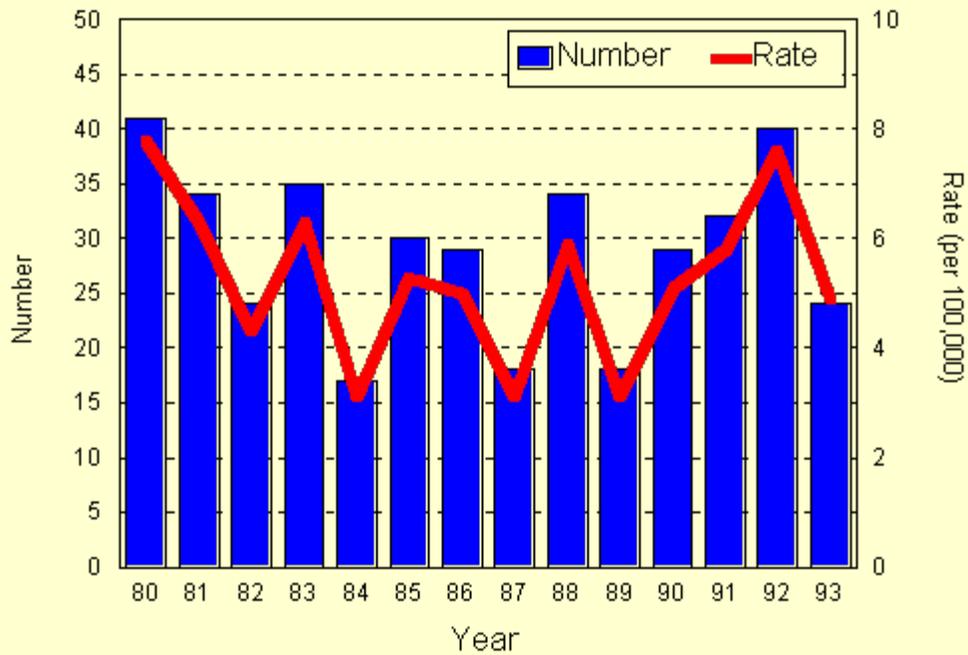


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Figure Navy - 6. Distribution and Rate of Homicide by Year, 1980-1993, N=405



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Table DoD-1a. Distribution of Military Deaths and Fatality Rates (per 100,000) by Age Group, Gender and Race for Primary Causes of Death, All Services, 1980-1993, N=27,070

Group		Unintentional Injury		Disease and Illness		Suicide		Homicide		All Causes *	
		n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
	17 to 24	9,707	74.5	978	7.5	1,624	12.5	832	6.4	13,676	104.9
Age	25 to 34	4,945	47.2	1,232	11.8	1,240	11.8	474	4.5	8,213	78.3
	35 +	1,678	33.6	2,691	53.9	542	10.9	158	3.2	5,181	103.6
Gender	Male	15,658	61.1	4,640	18.1	3,249	12.7	1,278	5.0	25,771	100.6
	Female	672	23.2	261	9.0	157	5.4	186	6.4	1,299	44.9
	White	13,092	61.3	3,546	16.6	2,800	13.1	857	4.0	21,059	99.1
Race	Black	2,670	47.1	1,157	20.4	464	8.2	549	9.7	5,001	88.3
	Other	568	37.2	198	13.0	142	9.3	58	3.8	1,010	66.2
	Total	16,330	57.3	4,901	17.2	3,406	11.9	1,464	5.1	27,070	94.9

* Includes deaths due to hostile action (n=561) and those deaths where cause is other, unclassified, or unknown (n=408).

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Table DoD-1b. Distribution of Military Deaths and Age-specific Fatality Rates (per 100,000) for Primary Causes of Death by Service, 1980-1993

Group		Unintentional Injury		Disease and Illness		Suicide		Homicide		All Causes *	
		n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
Air Force	17-24	1,563	54.9	161	5.7	340	11.9	97	3.4	2,169	76.2
	25-34	1,182	37.1	309	9.7	354	11.1	76	2.4	1,953	61.2
	35 +	519	30.3	767	44.7	190	11.1	29	1.7	1,517	88.4
Army	17-24	3,854	80.0	419	8.7	621	12.9	363	7.5	5,376	112.1
	25-34	1,857	49.6	525	14.0	460	12.3	226	6.0	3,155	84.3
	35 +	664	38.6	1,134	65.9	210	12.2	68	3.9	2,101	122.4
Marine Corps	17-24	1,449	86.0	124	7.4	242	14.4	139	8.3	2,197	130.4
	25-34	542	71.4	71	9.4	104	13.7	50	6.6	855	112.6
	35 +	93	35.7	101	38.8	32	12.3	11	4.2	262	100.6
Navy	17-24	2,841	77.3	274	7.5	421	11.5	233	6.3	3,934	107.1
	25-34	1,364	48.9	327	11.7	322	11.5	122	4.4	2,250	80.6
	35 +	402	31.1	689	53.4	110	8.5	50	3.9	1,301	100.9
Total		16,330	57.3	4,901	17.2	3,406	11.9	1,464	5.1	27,070	94.9

* Includes deaths due to hostile action (n=561) and those deaths where cause is other, unclassified, or unknown (n=408).

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Table DoD - 2. Cause-specific All-Service Fatality Rates (per 100,000) by Gender, Race, Age Group, and Year, 1980-1993.

Unintentional Injury

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	61.1	80.5	77.9	74.4	71.2	64.3	74.2	58.9	57.6	55.5	51.0	46.6	51.2	41.4	41.2
Female	23.2	32.9	27.1	34.3	26.8	26.3	22.2	23.2	27.1	22.0	20.5	15.2	24.9	14.3	11.7
White	61.3	84.9	80.2	77.2	72.3	65.6	72.0	58.1	57.9	55.4	49.8	45.0	50.5	40.6	38.1
Black	47.1	56.0	58.2	56.2	52.4	45.4	62.2	46.0	47.1	45.1	40.8	41.3	41.2	31.8	30.6
17-24	74.5	90.0	87.2	84.7	81.1	75.7	90.1	71.2	74.0	71.7	66.2	60.1	63.2	54.7	48.7
25-34	47.2	66.7	64.9	61.0	59.8	50.3	57.6	47.3	40.5	40.5	37.6	32.3	41.9	30.8	33.9
35 +	33.6	49.1	43.5	46.9	39.6	39.3	34.7	29.0	34.6	28.9	26.0	29.0	32.1	21.2	24.7

Illness and Disease

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	18.1	21.4	23.1	22.0	20.7	18.8	17.7	18.8	18.6	15.9	15.0	14.4	16.8	15.0	13.5
Female	9.0	10.4	10.8	11.4	10.6	7.0	10.4	7.7	10.8	9.9	65.7	8.1	7.5	6.4	10.7
White	16.6	20.1	21.1	20.4	19.3	17.6	17.1	17.0	16.7	14.7	13.4	13.0	14.8	13.5	11.9
Black	20.4	22.0	26.4	23.4	23.0	19.4	17.9	21.6	22.5	17.2	17.5	17.6	19.7	16.9	20.0
17-24	7.5	8.5	8.1	10.1	8.7	8.3	6.3	8.0	5.7	7.3	7.4	6.7	7.5	5.3	5.2
25-34	11.8	14.2	15.9	15.2	14.3	14.1	12.7	9.7	12.5	9.8	10.2	10.9	10.1	8.5	8.1
35 +	53.9	78.0	84.7	70.0	66.5	55.2	56.7	61.9	60.7	46.1	37.2	34.3	42.9	40.1	36.6

Suicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	12.7	11.9	12.2	12.5	10.5	11.3	13.8	13.2	13.0	14.3	11.5	12.1	13.9	13.2	15.0
Female	5.4	5.2	6.0	7.8	8.6	4.0	4.7	6.4	4.1	6.7	3.9	5.4	4.2	4.9	4.6
White	13.1	12.5	12.9	13.3	11.7	11.1	14.3	13.6	14.0	14.4	12.3	12.7	14.2	12.5	14.6
Black	8.2	7.9	7.9	8.8	4.9	9.3	8.3	8.1	5.9	11.3	5.8	6.8	8.2	11.3	10.9
17-24	12.5	11.9	12.5	13.9	10.7	10.1	13.7	13.0	12.5	13.2	10.8	12.1	13.5	12.6	14.9
25-34	11.8	10.6	10.7	10.6	10.2	12.3	12.2	12.2	11.9	14.5	11.1	11.6	12.2	11.1	14.3
35+	10.9	11.1	10.4	8.9	9.5	8.4	11.9	11.6	11.3	12.2	9.6	9.1	12.9	13.8	10.7

Homicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	5.0	8.4	7.2	4.9	5.1	3.6	4.8	4.6	4.6	4.2	2.6	3.3	5.8	6.0	5.0
Female	6.4	9.2	4.3	6.8	8.6	7.0	9.0	5.9	7.2	4.9	3.9	5.8	5.6	6.9	5.6
White	4.0	7.5	6.3	4.6	4.9	3.2	4.5	3.5	3.6	3.3	1.4	2.6	3.3	3.1	4.3
Black	9.7	12.9	10.1	7.4	7.8	7.9	8.8	10.3	9.7	7.6	6.2	7.5	14.2	18.0	8.5
17-24	6.4	10.5	8.3	7.0	5.7	3.9	6.5	4.3	4.6	4.4	3.6	5.1	9.1	10.0	7.4
25-34	4.5	7.6	6.2	3.1	5.4	4.2	4.2	5.5	6.4	3.8	2.4	3.1	3.9	4.1	3.9
35 +	3.2	3.0	4.2	3.1	4.8	3.5	3.7	4.4	2.1	5.0	1.3	1.0	3.0	2.7	3.0

All Causes *

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	100.6	122.9	121.9	114.8	122.9	99.3	112.0	97.2	96.9	91.3	83.3	78.8	99.6	79.0	78.1
Female	44.9	58.2	48.2	60.3	55.1	44.2	46.4	43.1	50.1	43.9	33.9	35.8	47.0	33.6	34.1
White	99.1	125.2	120.6	115.4	108.2	97.4	107.9	92.2	92.2	87.7	76.9	73.3	82.4	69.8	69.0
Black	88.3	98.8	102.7	95.9	88.2	82.0	97.2	86.0	85.2	81.2	70.4	73.1	83.4	78.0	69.9
17-24	104.9	120.9	116.1	115.7	106.1	98.0	116.5	96.5	96.7	96.7	88.0	84.1	93.3	82.7	76.3
25-34	78.3	99.1	97.6	89.9	89.7	80.0	86.7	74.7	71.2	68.6	61.3	57.9	68.0	54.5	60.1
35 +	103.6	141.2	142.9	128.9	120.4	106.3	107.0	107.0	108.8	92.3	74.2	73.4	90.9	77.7	75.1

* Includes deaths due to hostile action and those deaths where cause is other, unclassified, or unknown.

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Table Air Force-1. Distribution of Military Deaths and Fatality Rates (per 100,000) by Age Group, Gender, and Race for Primary Causes of Death, Air Force, 1980-1993, N=5,639

Group		Unintentional Injury		Disease and Illness		Suicide		Homicide		All Causes *	
		n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
	17 to 24	1,563	54.9	161	5.7	340	11.9	97	3.4	2,169	76.2
Age	25 to 34	1,182	37.1	309	9.7	354	11.1	76	2.4	1,953	61.2
	35 +	519	30.3	767	44.7	190	11.1	29	1.7	1,517	88.4
Gender	Male	3,088	45.5	1,162	17.1	828	12.2	163	2.4	5,292	78.1
	Female	176	18.1	75	7.7	56	5.8	39	4.0	347	35.7
	White	2,836	44.9	968	15.3	775	12.3	134	2.1	4,761	75.4
Race	Black	362	31.0	251	21.5	89	7.6	64	5.5	768	65.7
	Other	66	24.7	18	6.7	20	7.5	4	1.5	110	41.2
	Total	3,264	42.1	1,237	16.0	884	11.4	202	2.6	5,639	72.7

* Includes deaths due to hostile action (n=33) and those deaths where cause is other, unclassified, or unknown (n=19).

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Table Air Force - 2. Cause-specific Air Force Fatality Rates (per 100,000) by Gender, Race, Age Group, and Year, 1980-1993.

Unintentional Injury

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	45.5	68.1	62.9	61.7	56.5	52.7	43.1	47.6	40.8	36.9	31.3	33.3	29.5	34.8	25.6
Female	18.1	27.8	31.4	33.8	21.2	14.9	12.8	20.2	23.7	16.0	17.0	9.5	15.5	7.5	4.6
White	44.9	69.5	64.6	62.8	56.9	51.4	42.2	47.4	40.9	36.2	30.1	31.3	27.6	30.7	23.9
Black	31.0	37.3	39.1	41.0	32.8	37.0	30.8	30.3	34.8	30.6	25.6	19.7	23.9	28.0	17.1
17 to 24	54.9	78.1	61.6	64.4	66.5	57.3	50.3	59.4	61.6	48.0	33.3	35.6	36.8	45.5	33.4
25 to 34	37.1	56.9	64.4	52.6	47.5	48.3	35.4	40.0	22.9	26.2	28.4	26.6	26.9	28.7	19.8
35 +	30.3	45.1	45.0	57.0	32.6	31.1	26.6	24.5	30.3	28.8	25.6	29.7	18.7	18.6	15.2

Disease and Illness

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	17.1	22.6	23.9	19.7	21.4	16.3	16.8	15.7	16.2	15.0	15.6	14.8	12.0	13.1	13.9
Female	7.7	6.5	11.0	10.8	7.6	---	8.5	8.1	11.9	8.0	---	5.5	8.4	---	15.2
White	15.3	20.4	20.8	19.4	18.6	15.2	15.8	14.4	15.0	13.4	14.3	12.2	9.4	12.2	10.3
Black	21.5	24.9	33.2	15.9	28.3	15.7	19.8	20.5	22.9	21.5	15.1	20.9	18.6	8.8	35.7
17-24	5.7	5.8	6.0	6.7	10.4	5.7	3.4	6.4	4.1	6.2	6.1	5.2	3.6	1.5	4.1
25-34	9.7	14.5	14.3	11.2	11.3	10.5	10.1	7.3	8.3	8.7	10.7	8.3	5.6	5.0	10.9
35 +	44.7	66.3	74.7	58.7	55.2	40.9	50.9	45.1	49.7	36.6	31.0	32.7	30.4	32.4	29.5

*Rates were not calculated for cells with <3 cases due to instability of rates based on small numbers.

Suicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	12.2	11.1	10.1	11.8	9.5	9.5	13.2	10.1	15.0	17.6	11.5	10.1	14.3	13.4	15.0
Female	5.8	9.8	6.3	10.8	---	4.5	7.1	---	4.0	12.0	---	5.5	5.6	7.5	---
White	12.3	11.5	9.4	12.9	9.3	10.3	14.1	9.5	15.0	18.1	10.8	10.8	14.9	13.3	12.5
Black	7.6	7.5	13.0	4.6	5.7	---	4.4	6.5	9.8	13.6	9.3	4.9	5.3	8.8	12.4
17-24	11.9	14.2	10.8	14.6	10.0	7.0	12.6	6.8	13.2	16.0	10.5	9.7	12.3	17.0	17.1
25-34	11.1	7.7	7.2	9.3	7.2	10.5	13.1	9.7	13.4	18.3	13.0	8.3	13.9	9.4	12.5
35+	11.1	10.1	11.7	9.5	9.2	9.8	11.3	11.9	14.8	15.6	4.6	11.4	12.5	13.0	9.3

*Rates were not calculated for cells with <3 cases due to instability of rates based on small numbers. |

Homicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	2.4	3.4	4.1	1.7	2.1	1.7	2.3	3.2	2.3	2.4	1.0	2.0	3.5	1.8	1.9
Female	4.0	9.8	7.8	---	4.6	4.5	7.1	---	---	---	---	---	5.6	6.0	---
White	2.1	3.5	4.7	1.7	1.9	1.6	2.0	2.0	2.3	1.7	0.7	1.9	2.2	1.6	1.7
Black	5.5	8.7	4.7	3.4	5.7	4.5	6.6	8.6	3.3	6.8	---	---	13.3	4.4	---
17-24	3.4	7.1	5.2	2.4	2.8	2.9	3.4	3.8	3.6	2.1	1.1	3.2	4.3	2.3	1.6
25-34	2.4	2.4	4.8	2.3	1.8	2.2	3.0	2.4	1.6	2.4	0.4	1.2	4.3	2.5	2.6
35 +	1.7	---	---	---	---	---	---	---	---	3.1	---	---	---	---	---

*Rates were not calculated for cells with <3 cases due to instability of rates based on small numbers.

All Cause

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	78.1	105.4	101.8	94.9	89.6	80.2	75.5	77.1	74.5	72.1	59.5	60.6	67.3	64.4	56.5

Female	35.7	54.0	56.5	58.4	36.4	26.9	35.5	31.0	42.1	38.7	22.2	23.2	35.1	22.4	23.8
White	75.4	104.9	99.5	96.8	86.7	78.5	74.1	73.3	73.1	69.4	55.9	56.2	54.2	57.8	48.4
Black	65.7	78.4	90.1	64.8	72.4	59.4	61.7	66.0	70.8	72.6	51.1	48.0	61.1	50.1	68.3
17-24	76.2	105.2	83.6	88.2	89.7	72.9	69.6	76.5	82.6	72.3	51.1	53.7	56.9	66.3	56.2
25-34	61.2	81.4	90.7	75.4	67.9	71.6	61.6	59.4	46.2	55.6	52.5	44.4	50.7	45.6	45.8
35 +	88.4	122.5	134.1	125.2	99.4	81.8	90.4	83.9	96.3	84.0	62.7	75.4	64.0	66.5	54.8

* Includes deaths due to hostile action and those deaths where cause is other, unclassified, or unknown.

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Table Army-1. Distribution of Military Deaths and Fatality Rates (per 100,000) by Age Group, Gender, and Race for Primary Causes of Death, Army, 1980-1993, N=10,632

Group		Unintentional Injury		Disease and Illness		Suicide		Homicide		All Causes *	
		n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
	17 to 24	3,854	80.0	419	8.7	621	12.9	363	7.5	5,376	112.1
Age	25 to 34	1,857	49.6	525	14.0	460	12.3	226	6.0	3,155	84.3
	35 +	664	38.6	1,134	65.9	210	12.2	68	3.9	2,101	122.4
Gender	Male	6,081	66.1	1,967	21.4	1,225	13.3	563	6.1	10,058	109.3
	Female	294	27.0	111	10.2	66	6.1	94	8.6	574	52.6
	White	4,594	68.1	1,360	20.2	970	14.4	342	5.1	7,443	110.4
Race	Black	1,481	50.6	645	22.1	245	8.4	282	9.6	2,695	92.7
	Other	300	47.7	73	11.6	76	12.1	33	5.3	494	78.6
	Total	6,375	61.9	2,078	20.2	1,291	12.5	657	6.4	10,632	103.2

* Includes deaths due to hostile action (n=167) and those deaths where cause is other, unclassified, or unknown (n=64).

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Table Army - 2. Cause-specific Army Fatality Rates (per 100,000) by Gender, Race, Age Group, and Year, 1980-1993.

Unintentional Injury

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	66.1	74.1	82.6	77.8	73.3	64.9	102.4	63.7	62.2	58.7	51.4	51.1	59.7	39.0	49.8
Female	27.0	43.0	26.3	36.3	30.2	27.2	31.7	27.8	31.2	15.5	26.6	19.1	30.8	17.9	15.5
White	68.1	78.3	88.3	80.9	77.2	66.9	103.7	62.2	64.3	59.7	52.6	52.7	61.9	39.6	43.8
Black	50.6	64.3	62.5	64.6	52.1	44.6	77.2	51.3	48.3	43.6	38.5	41.1	48.2	30.2	30.2
17-24	80.0	86.4	92.5	88.4	81.8	76.5	127.1	76.2	77.2	70.6	63.4	66.9	73.9	55.7	54.8
25-34	49.6	59.2	60.9	64.7	63.3	45.7	73.6	48.5	44.9	43.1	39.0	34.9	46.6	26.8	41.4
35 +	38.6	38.8	57.6	44.6	41.4	48.3	47.2	37.7	38.8	34.4	32.6	29.4	41.6	17.2	36.0

Disease and Illness

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	21.4	23.4	27.5	26.4	23.9	22.5	19.5	23.1	20.0	18.0	17.0	17.2	23.7	16.4	18.0
Female	10.2	11.5	13.8	9.4	17.1	6.5	10.1	12.1	8.4	9.5	9.3	8.4	9.0	6.9	11.3
White	20.2	22.9	26.6	25.3	23.5	21.0	18.6	21.5	16.8	17.6	15.9	16.3	22.0	13.9	17.7
Black	22.1	23.2	28.3	26.4	24.7	22.8	19.1	24.2	23.2	15.0	17.9	18.7	23.6	21.3	18.6
17-24	8.7	10.2	9.6	11.4	9.9	9.2	7.5	19.7	5.6	6.4	8.4	7.7	11.0	5.4	7.6
25-34	14.0	14.8	20.2	20.1	17.9	13.0	13.3	11.0	14.7	11.5	10.3	15.8	14.7	11.0	7.0
35 +	65.9	91.6	107.5	84.7	80.2	75.7	64.3	83.5	64.5	57.3	47.4	35.9	57.1	41.5	52.3

Suicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	13.3	11.9	12.2	13.3	9.7	11.7	16.4	15.4	11.6	13.2	11.2	14.3	15.6	15.1	16.5
Female	6.1	---	6.9	8.1	11.8	5.2	3.8	9.7	3.6	---	5.8	4.8	6.4	6.9	7.1
White	14.4	13.7	14.1	14.4	11.9	11.9	17.2	16.4	12.8	12.4	13.3	15.5	17.1	14.4	17.5
Black	8.4	6.6	6.4	10.5	4.6	9.3	10.0	9.5	6.2	11.3	5.0	8.4	9.0	13.3	9.0
17-24	12.9	9.0	11.6	16.3	9.4	9.2	16.3	15.6	13.1	13.8	11.1	15.7	14.7	12.5	13.9
25-34	12.3	13.6	12.4	8.9	9.1	14.5	12.9	14.9	9.5	11.1	7.6	12.7	13.6	14.5	19.1
35+	12.2	13.9	10.6	10.0	13.8	9.2	16.3	12.0	7.0	9.2	15.6	8.6	16.2	16.4	11.4

*Rates were not calculated for cells with <3 cases due to instability of rates based on small numbers.

Homicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	6.1	9.5	9.2	7.2	6.0	5.4	6.6	5.2	6.7	4.1	3.6	2.0	6.7	6.9	6.5
Female	8.6	7.2	4.2	9.4	14.4	7.8	8.9	9.7	15.6	4.8	5.8	8.4	6.4	9.7	8.5
White	5.1	8.0	7.7	7.3	6.6	4.4	5.7	4.4	6.0	3.6	1.8	1.3	4.6	3.4	5.3
Black	9.6	13.1	10.7	8.3	7.3	9.3	10.5	9.0	11.4	5.6	6.4	6.1	11.5	16.6	10.9

17-24	7.5	11.2	10.6	10.7	6.0	5.3	8.6	4.0	6.7	4.7	4.5	2.9	10.3	10.8	9.9
25-34	6.0	8.6	6.2	3.7	8.0	6.5	5.7	7.4	11.6	3.1	4.1	3.9	4.8	5.7	5.1
35 +	3.9	3.0	7.7	4.6	6.9	5.0	4.1	6.4	---	5.3	---	---	3.5	3.1	4.1

* Rates were not calculated for cells with <3 cases due to instability of rates based on small numbers.

All Cause

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	109.3	119.2	131.9	125.3	115.3	105.5	144.9	108.0	100.8	94.6	88.3	85.3	122.3	78.7	96.5
Female	52.6	64.6	51.3	63.1	73.5	46.7	54.5	59.2	58.8	32.2	47.4	40.6	62.8	41.4	43.8
White	110.4	122.9	136.7	128.0	119.2	104.2	145.2	104.5	99.9	93.3	83.6	85.8	105.8	71.4	84.2
Black	92.7	107.1	107.9	109.8	88.7	86.0	116.7	94.0	89.0	75.5	67.9	74.3	92.3	81.1	68.7
17-24	112.1	116.8	124.3	126.7	107.1	100.2	159.5	105.5	102.6	95.5	87.5	93.2	109.9	84.4	86.3
25-34	84.3	96.2	99.7	97.5	98.4	79.7	105.5	81.8	80.7	68.9	61.0	67.3	79.6	58.0	72.6
35 +	122.4	147.3	183.3	143.9	142.3	138.2	132.0	139.7	111.9	106.2	97.1	73.9	118.5	78.2	103.9

* Includes deaths due to hostile action and those deaths where cause is other, unclassified, or unknown.

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Table Marine Corps-1. Distribution of Military Deaths and Fatality Rates (per 100,000) by Age Group, Gender, and Race for Primary Causes of Death, Marine Corps, 1980-1993, N=3,314

Group		Unintentional Injury		Disease and Illness		Suicide		Homicide		All Causes *	
		n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
Age	17 to 24	1,449	86.0	124	7.4	242	14.4	139	8.3	2,197	130.4
	25 to 34	542	71.4	71	9.4	104	13.7	50	6.6	855	112.6
	35 +	93	35.7	101	38.8	32	12.3	11	4.2	262	100.6
Gender	Male	2,058	79.7	288	11.2	368	14.3	186	7.2	3,254	126.1
	Female	26	21.0	8	6.5	10	8.1	14	11.3	60	48.5
Race	White	1,689	82.5	198	9.7	303	14.8	122	6.0	2,585	126.3
	Black	300	58.5	78	15.2	59	11.5	66	12.9	571	111.4
	Other	95	65.0	20	13.7	16	10.9	12	8.2	158	108.0
Total		2,084	77.1	296	10.9	378	14.0	200	7.4	3,314	122.5

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Table Marine Corps - 2. Cause-specific Marine Corps Fatality Rates (per 100,000) by Gender, Race, Age Group, and Year, 1980-1993.

Unintentional Injury

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	79.7	112.5	98.0	94.4	90.1	91.3	86.4	75.4	73.1	78.2	76.2	54.1	76.0	56.7	51.5
Female	21.0	14.8	12.9	34.8	22.4	32.1	20.5	10.2	31.3	10.4	21.1	---	56.7	24.2	---
White	82.5	124.7	106.5	99.4	88.4	92.1	81.7	78.8	74.0	75.1	78.8	55.3	84.8	55.4	57.1
Black	58.5	61.6	54.7	72.1	76.7	73.9	83.3	50.2	52.4	66.3	49.9	47.6	33.9	56.6	34.3
17-24	86.0	111.0	99.5	98.5	92.2	93.4	86.8	78.7	86.6	85.8	94.9	57.8	91.1	63.7	50.6
25-34	71.4	110.4	97.0	89.1	91.4	89.8	91.2	71.6	51.8	72.6	54.7	51.3	50.8	46.5	52.8
35 +	35.7	84.1	37.1	40.8	31.3	47.6	33.7	31.9	35.5	19.6	9.6	18.6	58.5	35.5	35.5

*Rates were not calculated for cells with <3 cases due to the instability of rates based on small numbers.

Illness and Disease

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	11.2	13.3	11.5	16.4	11.3	9.0	11.7	17.0	12.7	10.3	8.5	7.4	10.3	10.9	5.3
Female	6.5	14.8	12.9	23.2	11.2	32.1	---	---	---	---	---	---	---	---	---
White	9.7	12.0	10.3	11.8	9.8	11.7	10.6	14.7	12.1	8.3	6.9	5.5	6.3	9.5	5.3
Black	15.2	12.8	15.6	33.5	13.7	---	10.7	26.4	10.5	8.0	15.8	15.9	25.4	15.7	---
17-24	7.4	9.7	5.3	12.8	5.5	5.5	6.6	9.9	6.7	7.8	6.9	5.2	8.0	7.5	4.8
25-34	9.4	7.4	15.8	8.1	13.3	11.0	14.0	11.9	13.4	5.1	6.6	9.9	8.5	---	---
35 +	38.8	68.8	59.4	81.5	50.0	41.6	33.7	69.1	40.5	34.3	19.2	---	22.5	40.0	13.3

*Rates were not calculated for cells with <3 cases due to the instability of rates based on small numbers.

Suicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	14.3	14.4	18.1	14.3	13.4	15.4	12.3	13.3	11.7	14.0	12.3	16.4	13.0	12.6	18.9
Female	8.1	14.8	12.9	11.6	---	10.7	---	10.2	---	20.8	10.6	10.8	---	---	13.1
White	14.8	13.5	20.6	14.5	14.4	11.7	14.0	15.4	14.1	15.1	13.0	17.8	10.4	13.8	19.5
Black	11.5	18.0	10.4	12.9	---	27.4	---	7.9	---	10.6	7.9	7.9	19.8	9.4	20.6
17-24	14.4	12.0	21.1	10.5	14.2	15.0	14.7	14.9	10.9	15.6	10.4	13.8	13.4	13.1	21.9
25-34	13.7	22.1	9.0	24.3	15.2	20.2	7.0	10.2	10.0	11.8	14.9	18.2	10.2	7.4	14.2
35+	12.3	---	---	---	---	---	---	---	15.2	14.7	14.4	23.3	13.5	17.8	13.3

*Rates were not calculated for cells with <3 cases due to the instability of rates based on small numbers.

Homicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	7.2	20.5	9.3	8.0	6.4	4.8	4.3	6.4	6.4	5.4	2.1	5.8	7.1	7.4	7.7
Female	11.3	14.8	---	---	11.2	21.4	30.8	---	10.4	---	10.6	21.5	11.4	12.1	13.1
White	6.0	19.1	11.0	7.2	5.9	4.5	4.7	4.0	4.7	4.8	---	5.5	---	3.6	6.8
Black	12.9	20.5	---	10.3	8.2	10.9	10.7	13.2	15.7	---	7.9	13.2	22.6	28.3	13.7
17 to 24	8.3	19.5	9.8	9.8	5.5	4.0	5.7	5.8	6.7	6.1	2.6	7.8	11.6	11.2	8.6

25 to 34	6.6	27.0	6.8	---	11.4	5.5	5.3	6.8	8.4	5.1	---	5.0	---	---	8.1
35 +	4.2	---	---	---	---	17.8	---	---	---	---	---	---	---	---	---

*Rates were not calculated for cells with <3 cases due to the instability of rates based on small numbers.

All Cause

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	126.1	161.8	144.5	134.2	253.1	124.2	118.4	115.8	106.4	110.6	101.3	86.4	125.3	92.7	86.9
Female	48.5	74.1	38.6	69.5	44.7	96.2	51.3	20.3	41.7	31.2	42.2	43.0	68.1	36.3	26.1
White	126.3	169.4	148.5	132.9	118.5	120.0	110.9	112.8	104.9	103.3	100.0	84.0	102.2	82.3	88.6
Black	111.4	112.8	83.3	128.8	104.1	115.0	110.2	97.8	78.6	90.1	81.4	84.7	101.7	110.1	72.0
17-24	130.4	152.2	135.7	131.5	117.4	117.9	113.8	109.3	111.0	115.2	114.8	84.5	124.2	95.6	85.9
25-34	112.6	166.8	128.6	123.5	131.4	126.5	117.5	100.5	83.5	94.5	79.5	84.3	71.2	59.5	77.2
35 +	100.6	175.8	118.8	135.9	81.3	107.0	78.6	116.9	91.2	68.6	43.1	55.8	94.5	97.7	66.6

* Includes deaths due to hostile action and those deaths where cause is other, unclassified, or unknown.

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Table Navy-1. Distribution of Military Deaths and Fatality Rates (per 100,000) by Age Group, Gender, and Race for Primary Causes of Death, Navy, 1980-1993, N=7,485

Group		Unintentional Injury		Disease and Illness		Suicide		Homicide		All Causes *	
		n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
Age	17 to 24	2,841	77.3	274	7.5	421	11.5	233	6.3	3,934	107.1
	25 to 34	1,364	48.9	327	11.7	322	11.5	122	4.4	2,250	80.6
	35 +	402	31.1	689	53.4	110	8.5	50	3.9	1,301	100.9
Gender	Male	4,431	62.8	1,223	17.3	828	11.7	366	5.2	7,167	101.6
	Female	176	25.0	67	9.5	25	3.6	39	5.5	318	45.1
Race	White	3,973	64.0	1,020	16.4	752	12.1	259	4.2	6,270	101.8
	Black	527	49.4	183	17.2	71	6.7	137	12.8	967	91.1
	Other	107	22.1	87	17.9	30	6.2	9	1.9	248	51.1
	Total	4,607	59.4	1,290	16.6	853	11.0	405	5.2	7,485	96.5

* Includes deaths due to hostile action (n=86) and those deaths where cause is other, unclassified, or unknown (n=244).

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17-24	6.3	8.3	6.9	4.8	7.9	2.9	6.7	4.4	1.5	4.9	4.6	7.8	9.2	13.2	7.5
25-34	4.4	8.0	7.7	3.3	4.2	3.0	3.4	6.1	4.6	6.0	2.3	3.7	2.8	4.5	2.6
35 +	3.9	5.3	4.8	6.0	3.4	5.6	4.4	4.2	8.2	---	---	3.9	---	4.0	

Table Navv-2. Cause-specific Navy Fatality Rates (per 100,000) by Gender, Race, Age Group, and Year, 1980-1993.

Unintentional Injury

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	62.8	90.2	79.3	75.2	76.6	65.6	63.4	58.1	62.8	61.2	59.8	49.9	50.2	43.8	40.7
Female	25.0	25.0	24.4	31.5	30.0	39.7	21.2	22.5	24.7	42.2	15.7	19.3	23.6	16.4	17.1
White	64.0	95.9	79.0	80.7	77.6	70.3	64.3	58.3	63.4	63.8	57.1	46.4	48.9	45.6	39.2
Black	49.4	44.9	70.5	37.5	66.3	43.5	46.8	48.4	55.5	54.3	57.1	57.6	43.1	28.9	40.7
17-24	77.3	95.3	96.1	90.9	88.2	82.8	75.4	71.2	74.1	84.5	79.7	67.7	53.3	54.5	50.4
25-34	48.9	79.6	63.1	57.7	60.3	48.2	52.1	47.6	52.0	44.8	41.7	30.2	49.7	33.2	34.9
35 +	31.1	62.4	24.0	37.0	48.9	36.8	28.9	22.8	34.7	23.7	21.2	29.5	29.9	26.1	19.9

Disease and Illness

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	17.3	20.4	20.3	20.3	19.2	19.9	18.3	16.8	21.1	15.9	14.1	13.0	15.1	16.4	11.4
Female	9.5	13.9	---	13.5	---	8.4	15.4	---	15.2	14.7	5.2	12.3	5.5	12.8	5.7
White	16.4	19.4	18.9	18.8	18.6	18.3	19.0	15.5	19.8	14.9	11.9	12.8	15.1	15.8	10.3
Black	17.2	19.8	16.8	17.2	15.4	22.5	15.6	13.1	25.9	22.4	19.8	12.8	9.9	15.0	16.0
17-24	7.5	7.6	9.0	10.0	6.8	10.7	7.0	6.2	6.7	9.1	7.2	7.0	5.5	6.4	3.5
25-34	11.7	14.8	11.2	14.8	12.7	16.7	14.6	10.3	14.1	10.2	10.5	7.4	9.5	10.4	7.9
35 +	53.4	78.4	73.2	64.4	66.8	49.4	58.9	54.4	74.6	46.3	35.4	39.4	43.4	47.4	30.9

*Rates were not calculated for cells with <3 cases due to the instability of rates based on small numbers.

Suicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	11.7	11.8	12.1	11.5	11.3	11.0	11.3	13.3	13.2	12.8	11.7	9.5	11.8	11.3	11.7
Female	3.6	---	---	---	---	---	---	7.5	5.7	---	---	---	---	---	---
White	12.1	12.1	12.8	12.0	13.3	10.8	11.3	14.2	14.4	12.5	12.5	9.9	11.9	9.6	11.9
Black	6.7	7.2	5.0	6.3	4.6	9.0	9.9	6.5	3.7	9.4	3.3	4.3	4.4	10.4	9.9
17-24	11.5	14.2	11.4	11.7	11.5	11.8	11.7	13.9	11.9	9.5	10.6	8.6	13.0	10.0	11.0
25-34	11.5	6.8	13.0	11.0	13.8	9.1	11.7	12.1	13.7	15.3	12.4	12.1	9.0	9.9	10.6
35+	8.5	8.0	7.6	7.2	6.0	6.9	7.8	10.9	11.6	11.3	7.1	3.9	8.7	10.6	11.0

*Rates were not calculated for cells with <3 cases due to the instability of rates based on small numbers.

Homicide

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	5.2	7.6	6.8	3.9	6.5	2.7	5.1	4.8	3.4	5.5	2.9	5.0	6.0	8.1	4.8
Female	5.5	11.1	---	9.0	---	6.3	7.7	7.5	---	9.2	5.2	5.3	---	---	5.7
White	4.2	7.5	4.9	3.7	5.8	2.9	5.7	3.9	2.1	3.9	1.8	3.8	3.7	3.9	5.0
Black	12.8	12.6	20.1	7.8	12.3	6.0	5.7	14.4	9.9	14.2	9.9	12.8	17.7	27.7	6.2

*Rates were not calculated for cells with <3 cases due to the instability of rates based on small numbers.

All Cause

Group	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Male	101.6	131.4	119.9	113.3	120.0	101.2	102.7	96.7	110.6	98.7	92.7	83.7	90.1	86.2	72.1
Female	45.1	50.0	31.7	56.3	53.5	54.3	48.1	39.2	49.3	71.6	27.9	43.9	36.4	36.5	36.2
White	101.8	134.9	115.6	115.2	115.3	102.3	100.3	91.8	99.7	95.0	83.3	72.9	79.7	75.0	66.5
Black	91.1	84.5	112.4	68.8	98.7	81.0	78.1	82.4	94.9	100.3	90.0	87.5	75.2	82.0	72.8
17-24	107.1	125.5	123.4	117.4	114.3	108.2	99.8	95.8	94.2	108.0	102.0	91.0	81.0	84.1	72.4
25-34	80.6	109.3	95.0	86.8	91.0	77.1	81.8	76.0	84.4	76.3	67.0	53.4	70.9	58.0	56.0
35 +	100.9	154.1	106.0	113.3	127.7	96.5	101.2	92.4	125.1	89.5	64.7	73.8	85.8	86.2	65.8

* Includes deaths due to hostile action and those deaths where cause is other, unclassified, or unknown.

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