

nchs MONTHLY VITAL STATISTICS REPORT

Final Data From the National Center for Health Statistics

Vol. 32, No. 10, Supplement (2) • February 17, 1984

Multiple Causes of Death in the United States

Introduction

Presented here are summary data on multiple causes of death in the United States for 1978. These statistics reflect all medical information reported on the death certificates for the 1,927,788 resident deaths occurring during the year. They complement the 1978 statistics on underlying cause of death.

For many years national cause-of-death statistics have been based solely on the underlying cause of death. The underlying cause is defined as the disease or injury that initiated the train of events leading directly to death or as the circumstances of the accident or violence that produced the fatal injury. It is selected from the conditions entered by the physician in the cause-of-death section of the death certificate. When more than one cause or condition is entered by the physician, the underlying cause is determined by the sequence of conditions on the certificate, provisions of the International Classification of Diseases, and associated classification rules. This is the cause by which deaths have been routinely tabulated and cross-classified by demographic variables such as age, race, sex, and geographic area of occurrence and residence. When only information related to the underlying cause of death is made available, a great deal of information appearing on the death certificates is lost to the data user, including the conditions recorded as the immediate cause of death, any diseases that intervene between the underlying and immediate cause, and any contributory conditions outside the sequence of conditions leading to death.

As an example of the magnitude of this loss, in 1978 nearly 75 percent of the death certificates had more than one condition listed. One-third of the certificates had two conditions, one-fourth had three, and 15 percent had four or more conditions listed. When so many conditions are reported and only one is tabulated for mortality statistics, a substantial amount of diagnostic information remains unused.

To capture this information, the National Center for Health Statistics (NCHS) has developed and implemented a multiple-cause-of-death statistical program. Its objective is to disseminate data on all diseases, conditions, and injuries entered on the death certificates by the certifying physicians. Multiple causes of death are now available on public use tapes for deaths occurring during each year of the period 1968-80. The multiple-cause-of-death program is now a part of the basic data program of NCHS, and multiple cause statistics will be released annually. This first report presents selected summary data from the file of resident deaths for 1978, the last year of the decade for which cause-of-death data were classified according to the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States* (ICDA-8).¹

Multiple cause data are not a replacement for the traditional underlying cause-of-death data. They give additional information, information on diseases that are a factor in death whether or not they are the underlying cause of death; on associations among diseases; and on injuries leading to death. They also give information that will aid in evaluating and strengthening the certification process, thereby improving the quality of the medical information entered on the death certificate. The information presented here should help users understand and interpret them.

Underlying causes versus reported causes

Some causes are selected as the underlying cause of death much more often than others, relative to the number of deaths for which they are reported on the death certificate. This relationship can be expressed by a ratio obtained by dividing the total number of deaths for which a given cause

¹National Center for Health Statistics: *Eighth Revision International Classification of Diseases, Adapted for Use in the United States*. PHS Pub. No. 1693. Public Health Service. Washington. U.S. Government Printing Office, 1967.

appears on the death certificate by the number of those deaths for which it is selected as the underlying cause. The ratio is close to 1.0 if the cause is usually selected as the underlying cause when it is on the death certificate; it is larger for causes less often selected as the underlying cause relative to the total number of deaths for which they are reported.

Table 1 shows for a list of 69 selected causes the number of deaths for which they were reported on the death certificate, the number of those deaths for which they were selected as the underlying cause, and the number for which they were not selected as the underlying cause. Also shown for each of the 69-cause categories is the ratio relating the total number of deaths for which the cause was reported to the number of deaths for which it was selected as the underlying cause.

Disease categories with large ratios are those that appear much more frequently as reported causes than as underlying causes. They therefore include diseases that in certain cases would not be fatal by themselves but, combined with another serious disease, contribute to the death. Also in this group are diseases that were part of a sequence of conditions that they did not initiate and diseases that occurred either as the immediate or precipitating cause or as a complication where another cause initiated the sequence of events leading to death.

The ratios for several of the causes in the List of 69 Selected Causes of Death developed by the National Center for Health Statistics show that the number of death certificates upon which the causes appeared was more than 10 times the number from which they were selected as the underlying

cause: Angina pectoris (16.2), Symptoms and ill-defined conditions (12.9), and Avitaminoses and other nutritional deficiencies (11.1). Acute poliomyelitis also had a high ratio (10.1), but this was due to certification practices that resulted in a number of cases of late effects of poliomyelitis being assigned to the category for Acute poliomyelitis. Causes that appeared on 5 to 8 times as many death certificates as the number from which they were selected as the underlying cause were Anemias (8.2), All other forms of heart disease (a residual category with a large number of cases of congestive heart failure and cardiac arrest, not otherwise specified) (8.2), Septicemia (6.6), Arteriosclerosis (6.5), Acute nephritis and nephrotic syndrome (5.7), and Hyperplasia of prostate (5.2). These and other causes with large ratios are shown in table A.

The ratios indicate that the following causes from the List of 69 Selected Causes were usually selected as the underlying cause if they were on the death certificate: Motor vehicle accidents (1.0); Suicide (1.0); Homicide (1.0); Other external causes (1.1); Meningococcal infections (1.1); Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues (1.1); Acute myocardial infarction (1.1); Ischemic heart disease (1.2); Complications of pregnancy, childbirth, and the puerperium (1.2); Hypertensive heart and renal disease (1.3); and Certain causes of mortality in early infancy (1.3). The ratios for malignant neoplasms by specified site and for other causes with ratios close to 1 are shown in table B.

The number of deaths and the death rates for the 69 selected causes as reported causes are shown by race and sex in tables 2 and 3. The relationship between these numbers

Table A. Reported causes of death not frequently selected as underlying causes and ratios of reported to underlying causes: United States, 1978

[Based on NCHS List of 69 Selected Causes of Death]

<i>Cause of death and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965</i>	<i>Total reported</i>	<i>Selected as underlying cause</i>	<i>Ratio of reported to underlying cause</i>
Tuberculosis of respiratory system 010-012	8,576	2,256	3.8
Septicemia 038	51,265	7,800	6.6
Acute poliomyelitis 040-043	131	13	10.1
Syphilis and its sequelae 090-097	524	169	3.1
Other infective and parasitic diseases Remainder of 000-136	15,619	4,813	3.2
Malignant neoplasms of all other and unspecified sites 170-173, 190-199	201,218	48,943	4.1
Diabetes mellitus 250	130,672	33,841	3.9
Avitaminoses and other nutritional deficiencies 260-269	31,700	2,855	11.1
Anemias 280-285	27,156	3,300	8.2
Other acute and subacute forms of ischemic heart disease 411	16,115	4,090	3.9
Angina pectoris 413	4,108	253	16.2
Chronic disease of endocardium and other myocardial insufficiency 424, 428	14,389	4,072	3.5
All other forms of heart disease 420-423, 425-427, 429	488,000	59,430	8.2
Cerebral embolism 434	3,555	760	4.4
Arteriosclerosis 440	187,126	28,940	6.5
Acute bronchitis and bronchiolitis 466	2,752	756	3.6
Pneumonia 480-486	180,771	54,267	3.3
Asthma 493	6,278	1,872	3.4
Hernia and intestinal obstruction 550-553, 560	19,798	5,568	3.6
Acute nephritis and nephrotic syndrome 580, 581	11,905	2,073	5.7
Hyperplasia of prostate 600	4,469	854	5.2
Symptoms and ill-defined conditions 780-796	402,871	31,324	12.9
All other diseases Residual	509,290	137,396	3.7

Table B. Reported causes of death usually selected as underlying causes and ratios of reported to underlying causes: United States, 1978

[Based on NCHS List of 69 Selected Causes of Death]

<i>Cause of death and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965</i>	<i>Total reported</i>	<i>Selected as underlying cause</i>	<i>Ratio of reported to underlying cause</i>
Meningococcal infections	036 439	403	1.1
Malignant neoplasms of buccal cavity and pharynx	140-149 10,079	8,341	1.2
Malignant neoplasms of digestive organs and peritoneum	150-159 119,053	105,427	1.1
Malignant neoplasms of respiratory system	160-163 109,550	99,898	1.1
Malignant neoplasm of breast	174 40,602	34,609	1.2
Malignant neoplasms of genital organs	180-187 57,528	45,131	1.3
Malignant neoplasms of urinary organs	188, 189 21,995	17,574	1.3
Leukemia	204-207 19,633	15,391	1.3
Other neoplasms of lymphatic and hematopoietic tissues	200-203, 208, 209 27,293	21,678	1.3
Hypertensive heart and renal disease	404 4,101	3,249	1.3
Ischemic heart disease	410-413 763,810	642,270	1.2
Acute myocardial infarction	410 326,643	302,664	1.1
Complications of pregnancy, childbirth, and the puerperium	630-678 372	321	1.2
Certain causes of mortality in early infancy	760-769.2, 769.4-772, 774-778 28,962	22,033	1.3
Motor vehicle accidents	E810-E823 53,559	52,411	1.0
Suicide	E950-E959 27,459	27,294	1.0
Homicide	E960-E978 20,634	20,432	1.0
Other external causes	E980-E999 4,433	4,163	1.1

and rates and those published earlier for the 69 selected causes as underlying causes can be better summarized through use of the ratios discussed above, ratios relating the number of deaths for which a cause is reported to the number of deaths for which it was selected as the underlying cause. The ratios by race and sex are shown in table 4.

Although many of the ratios for males and females are similar, ratios tend to be greater for males than for females. Among the most frequently reported causes, ratios were greater for males than for females for Arteriosclerosis, Diabetes mellitus, and Influenza and pneumonia, indicating that when these causes appeared on the death certificate they were relatively less often selected as the underlying cause for males than for females. The reverse was true for one frequently reported cause, All other accidents (accidents other than motor vehicle accidents).

By race, many of the ratios are similar for the two racial groups shown, but they tend to be greater for the white population than for the population of all other races. Among the frequently reported causes for which ratios were greater for the white population were Diabetes mellitus, Septicemia and All other accidents.

Leading causes of death

Since multiple cause data provide a means for looking at diseases in terms of the number of deaths for which they were mentioned on the death certificates (reported causes) as well as of the number for which they were selected as the underlying cause, rankings of causes of death by the two criteria can be compared. This comparison is made in tables 5 and 6, and in the text figure for the 10 leading causes of death.

Diseases of heart, Malignant neoplasms, and Cerebrovascular diseases were the three most frequent causes in the

same order whether ranked as underlying cause or reported cause; but a number of causes changed in relative importance when ranked by numbers of deaths for which they were reported. The greatest change in ranking was for Arteriosclerosis, which ranked 8th as an underlying cause but ranked 4th as a reported cause. Cirrhosis of liver changed rank from 7th to 10th. Suicide and Certain causes of mortality in early infancy, ranked 9th and 10th as underlying causes of death, were replaced in the 10 leading causes by Bronchitis, emphysema, and asthma and by Septicemia, which ranked 8th and 9th as reported causes.

It is of interest that while the number of deaths for which Diabetes mellitus was reported (130,672) was far greater than the number for which it was selected as the underlying cause (33,841), its relative ranking among causes changed little, from 7th to 6th. Similarly, the category Influenza and pneumonia was reported for three times the number of deaths for which it was selected as the underlying cause, yet retained the same rank. Also, Cirrhosis of liver was reported for nearly 50 percent more deaths than the number for which it was selected as underlying cause, yet its ranking dropped from 7th among underlying causes to 10th as a reported cause.

These differences in ranking of a given cause ranked by the two criteria (the number of deaths for which selected as the underlying cause and the number of deaths for which reported) occur because, as discussed earlier, some causes are selected more often than others as the underlying cause of death relative to the number of deaths for which they are reported. If all reported causes were selected as underlying causes with the same relative frequency, each of the causes would be ranked the same in both groups.

The ranking of reported causes, as of underlying causes, is different for males than for females. Among reported causes, Arteriosclerosis, Diabetes mellitus, Septicemia, and

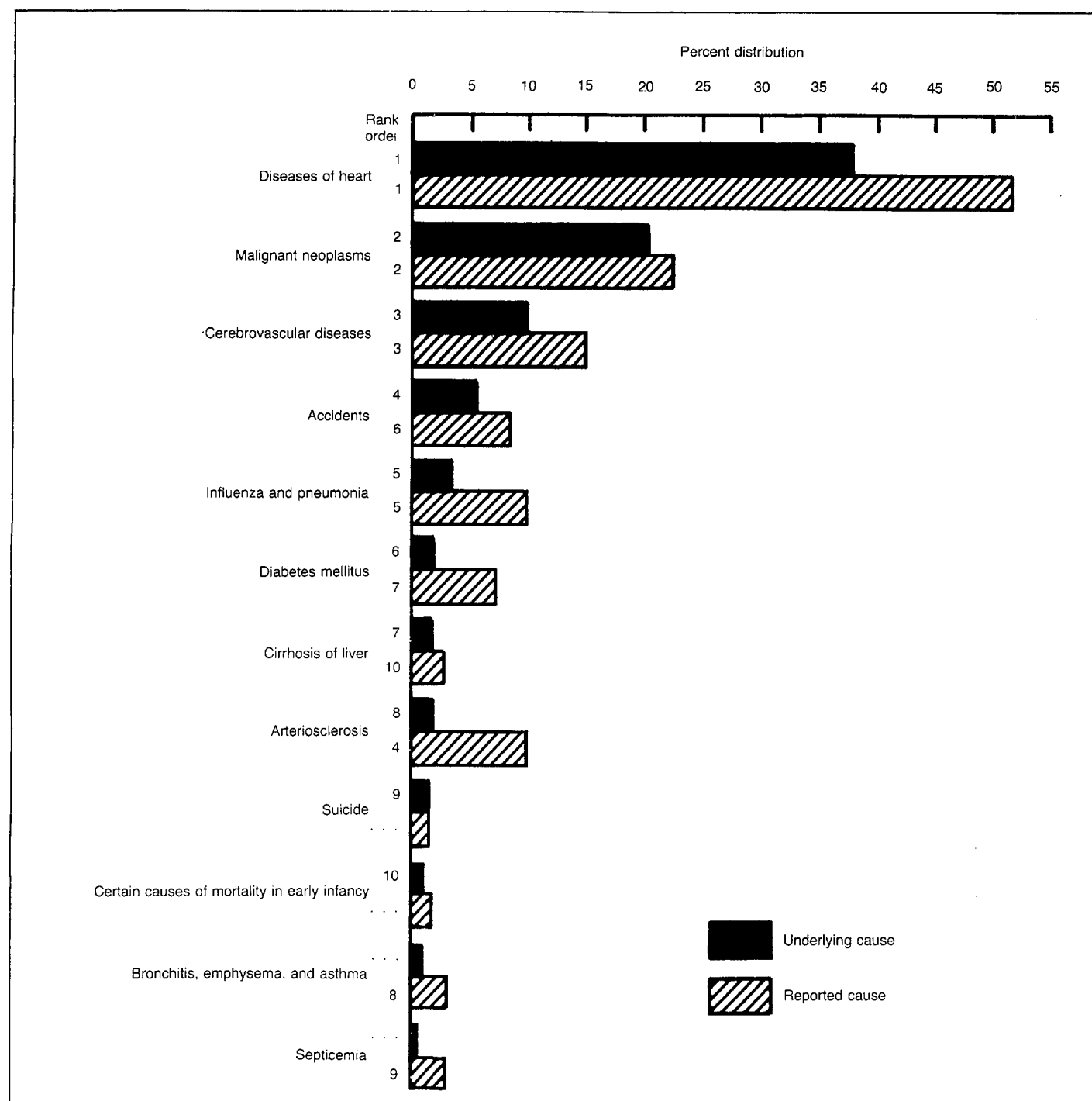


Figure. Percent distribution and rank order of 10 leading causes of death for underlying causes and for reported causes: United States, 1978

Avitaminoses and other nutritional deficiencies rank higher for females than for males. Influenza and pneumonia; Accidents; Bronchitis, emphysema, and asthma; and Cirrhosis of liver rank lower for females.

Rankings of the leading causes of death as underlying causes and as reported causes are shown by age in table 6. At certain ages, several causes of death ranked higher as reported causes than as underlying causes: Diseases of heart at 1-4 and 5-14 years of age; Anemias at 15-24 years of age; Arteriosclerosis at 45-64; Avitaminoses and other

nutritional deficiencies at 65 years of age and over; and Septicemia at all ages. Suicide and Homicide declined in rank at 45-64 years of age, dropping from the leading causes. Cirrhosis of liver and Nephritis and nephrosis also dropped from the top 10 causes for 65 years of age and over.

Nature of injury

National cause-of-death statistics that show only the underlying cause, the cause that initiated the train of events

leading to death, show the circumstances of the accident or violence that produced the fatal injuries, but not the nature of the injuries. Since, in selecting one cause to represent a death, a choice has to be made between the two, it is considered more important to know the number of deaths resulting from such external causes as motor vehicle accidents, falls, homicide, and suicide than from causes categorized by the nature of the injury, such as fractures, gunshot wounds, and lacerations.

For example, in underlying cause statistics a death resulting from a skull fracture sustained in an automobile accident would be classified as a motor vehicle accident rather than as a skull fracture. Consequently, underlying cause statistics provide us with information on deaths resulting from automobile accidents but not on deaths involving skull fractures. Multiple cause statistics yield information on both. We now have information on the nature of injuries incurred in accidents, including fractures (by site), intracranial injuries, internal injuries, lacerations, burns, and many other injuries, as well as information on the external causes, such as motor vehicle accidents, falls, fires, poisonings, drownings, suicide, and homicide.

Injuries were reported for 210,942 deaths in 1978, 11 percent of all deaths in that year (table 7). By broad category,

the injuries reported for the most deaths were those classified to Adverse effects of chemical substances and other adverse effects (N960-N999), a category that includes injuries of specified, unspecified, and multiple sites of the body, and complications of those injuries; adverse effects of medical and nonmedical agents; complications of surgical procedures and other medical care; and effects of a variety of other external causes, including drowning, asphyxiation and strangulation, radiation, extreme temperature, and lightning. A total of 95,619 deaths, nearly half (45 percent) of the deaths with a reported injury, were in this broad category. The category Intracranial injury, excluding those with skull fracture (N850-N854), was reported for 49,797 deaths; and Fractures, dislocations, and sprains and strains of joints and adjacent muscles (N800-N848) was reported for 49,420 deaths.

Injuries were reported for more deaths for males (139,891) than for females (71,051), 13 percent of all deaths for males and 8 percent of all deaths for females. Deaths with mention of Intracranial injury (excluding those with skull fracture) were more frequent among the injury deaths for males than among those for females. The reverse was true for Fractures, dislocations, and sprains and strains of joints and adjacent muscles. However, that category assumed greater prominence in the upper age groups for both men and women.

Table 1. Deaths with 69 selected causes as reported causes, by whether selected as underlying causes, and ratios of reported to underlying cause: United States, 1978

<i>Cause of death and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965</i>	<i>Total reported</i>	<i>Selected as underlying cause</i>	<i>Not selected as underlying cause</i>	<i>Ratio of reported to underlying cause</i>
Bacillary dysentery and amebiasis 004,006	54	34	20	1.6
Enteritis and other diarrheal diseases 008,009	3,757	1,874	1,883	2.0
Tuberculosis, all forms 010-019	10,029	2,914	7,115	3.4
Tuberculosis of respiratory system 010-012	8,576	2,256	6,320	3.8
Tuberculosis, other forms 013-019	1,541	658	883	2.3
Whooping cough 033	12	6	6	2.0
Streptococcal sore throat and scarlet fever 034	12	5	7	2.4
Meningococcal infections 036	439	403	36	1.1
Septicemia 038	51,265	7,800	43,465	6.6
Acute poliomyelitis 040-043	131	13	118	10.1
Measles 055	27	11	16	2.5
Syphilis and its sequelae 090-097	524	169	355	3.1
Other infective and parasitic diseases Remainder of 000-136	15,619	4,813	10,806	3.2
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	451,612	396,992	54,620	1.1
Malignant neoplasms of buccal cavity and pharynx 140-149	10,079	8,341	1,738	1.2
Malignant neoplasms of digestive organs and peritoneum 150-159	119,053	105,427	13,626	1.1
Malignant neoplasms of respiratory system 160-163	109,550	99,898	9,652	1.1
Malignant neoplasm of breast 174	40,602	34,609	5,993	1.2
Malignant neoplasms of genital organs 180-187	57,528	45,131	12,397	1.3
Malignant neoplasms of urinary organs 188,189	21,995	17,574	4,421	1.3
Malignant neoplasms of all other and unspecified sites 170-173,190-199	201,218	48,943	152,275	4.1
Leukemia 204-207	19,633	15,391	4,242	1.3
Other neoplasms of lymphatic and hematopoietic tissues 200-203,208,209	27,293	21,678	5,615	1.3
Benign neoplasms and neoplasms of unspecified nature 210-239	9,179	4,963	4,216	1.8
Diabetes mellitus 250	130,672	33,841	96,831	3.9
Avitaminoses and other nutritional deficiencies 260-269	31,700	2,855	28,845	11.1
Anemias 280-285	27,156	3,300	23,856	8.2
Meningitis 320	3,200	1,560	1,640	2.1
Major cardiovascular diseases 390-448	1,240,359	966,120	274,239	1.3
Diseases of heart 390-398,402,404,410-429	1,014,863	729,510	285,353	1.4
Active rheumatic fever and chronic rheumatic heart disease 390-398	24,632	13,402	11,280	1.8
Hypertensive heart disease 402	13,654	7,087	6,567	1.9
Hypertensive heart and renal disease 404	4,101	3,249	852	1.3
Ischemic heart disease 410-413	763,810	642,270	121,540	1.2
Acute myocardial infarction 410	326,643	302,664	23,979	1.1
Other acute and subacute forms of ischemic heart disease 411	16,115	4,090	12,025	3.9
Chronic ischemic heart disease 412	604,945	335,263	269,682	1.8
Angina pectoris 413	4,108	253	3,855	16.2
Chronic disease of endocardium and other myocardial insufficiency 424,428	14,389	4,072	10,317	3.5
All other forms of heart disease 420-423,425-427,429	488,000	59,430	428,570	8.2
Hypertension 400,401,403	13,217	5,490	7,727	2.4
Cerebrovascular diseases 430-438	289,246	175,629	113,617	1.6
Cerebral hemorrhage 431	32,743	22,633	10,110	1.4
Cerebral thrombosis 433	55,876	38,710	17,166	1.4
Cerebral embolism 434	3,355	760	2,595	4.4
All other cerebrovascular diseases 430,432,435-438	225,720	113,526	112,194	2.0
Arteriosclerosis 440	187,126	28,940	158,186	6.5
Other diseases of arteries, arterioles, and capillaries 441-448	53,318	26,551	26,767	2.0
Acute bronchitis and bronchiolitis 466	2,752	756	1,996	3.6
Influenza and pneumonia 470-474,480-486	186,512	58,319	128,193	3.2
Influenza 470-474	5,754	4,052	1,702	1.4
Pneumonia 480-486	180,771	54,267	126,504	3.3
Bronchitis, emphysema, and asthma 490-493	54,508	21,875	32,633	2.5
Chronic and unqualified bronchitis 490,491	10,425	4,376	6,049	2.4
Emphysema 492	42,364	15,627	26,737	2.7
Asthma 493	6,278	1,872	4,406	3.4
Peptic ulcer 531-533	15,393	5,545	9,848	2.8
Appendicitis 540-543	1,220	735	485	1.7
Hernia and intestinal obstruction 550-553,560	19,798	5,568	14,230	3.6
Cirrhosis of liver 571	44,089	30,066	14,023	1.5
Cholelithiasis, cholecystitis, and cholangitis 574,575	8,151	2,941	5,210	2.8
Nephritis and nephrosis 580-584	28,698	8,868	19,830	3.2
Acute nephritis and nephrotic syndrome 580,581	11,905	2,073	9,832	5.7
Chronic and unqualified nephritis and renal sclerosis 582-584	17,846	6,795	11,051	2.6
Infections of kidney 590	8,823	3,096	5,727	2.8
Hyperplasia of prostate 600	4,469	854	3,615	5.2

Table 1. Deaths with 69 selected causes as reported causes, by whether selected as underlying causes, and ratios of reported to underlying cause: United States, 1978—Con.

<i>Cause of death and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965</i>	<i>Total reported</i>	<i>Selected as underlying cause</i>	<i>Not selected as underlying cause</i>	<i>Ratio of reported to underlying cause</i>
Complications of pregnancy, childbirth, and the puerperium 630-678	372	321	51	1.2
Abortions 640-645	22	16	6	1.4
Other complications of pregnancy, childbirth, and the puerperium 630-639,650-678	353	305	48	1.2
Congenital anomalies 740-759	17,861	12,968	4,893	1.4
Certain causes of mortality in early infancy 760-769,2,769.4-772,774-778	28,962	22,033	6,929	1.3
Birth injury, difficult labor, and other anoxic and hypoxic conditions 764-768,772,776	17,236	11,710	5,526	1.5
Other causes of mortality in early infancy Remainder of 760-778	26,023	10,323	15,700	2.5
Symptoms and ill-defined conditions 780-796	402,871	31,324	371,547	12.9
All other diseases Residual	509,290	137,396	371,894	3.7
Accidents E800-E949	161,561	105,561	56,000	1.5
Motor vehicle accidents E810-E823	53,559	52,411	1,148	1.0
All other accidents E800-E807,E825-E949	108,516	53,150	55,366	2.0
Suicide E950-E959	27,459	27,294	165	1.0
Homicide E960-E978	20,634	20,432	202	1.0
Other external causes E980-E999	4,433	4,163	270	1.1

Table 2. Deaths with 69 selected causes as reported causes, by race and sex: United States, 1978

[Refers only to resident deaths occurring within the United States. Excludes fetal deaths]

Cause of death and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965		All races			White			All other		
		Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Bacillary dysentery and amebiasis	004, 006	54	34	20	40	25	15	14	9	5
Enteritis and other diarrheal diseases	008, 009	3,757	1,707	2,050	2,983	1,305	1,678	774	402	372
Tuberculosis, all forms	010-019	10,029	6,054	3,975	7,881	4,603	3,278	2,148	1,451	697
Tuberculosis of respiratory system	010-012	8,576	5,184	3,392	6,786	3,960	2,826	1,790	1,224	566
Tuberculosis, other forms	013-019	1,541	926	615	1,145	680	465	396	246	150
Whooping cough	033	12	4	8	6	2	4	6	2	4
Streptococcal sore throat and scarlet fever	034	12	6	6	12	6	6	-	-	-
Meningococcal infections	036	439	233	206	353	192	161	86	41	45
Septicemia	038	51,265	26,694	24,571	41,775	21,690	20,085	9,490	5,004	4,486
Acute poliomyelitis	040-043	131	78	53	127	75	52	4	3	1
Measles	055	27	12	15	23	11	12	4	1	3
Syphilis and its sequelae	090-097	524	311	213	309	192	117	215	119	96
Other infective and parasitic diseases	Remainder of 000-136	15,619	8,061	7,558	12,979	6,682	6,297	2,640	1,379	1,261
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140-209	451,612	248,425	203,187	401,787	219,485	182,302	49,825	28,940	20,885
Malignant neoplasms of buccal cavity and pharynx	140-149	10,079	7,109	2,970	8,712	6,084	2,628	1,367	1,025	342
Malignant neoplasms of digestive organs and peritoneum	150-159	119,053	62,674	56,379	105,306	54,931	50,375	13,747	7,743	6,004
Malignant neoplasms of respiratory system	160-163	109,550	82,204	27,346	97,577	72,758	24,819	11,973	9,446	2,527
Malignant neoplasm of breast	174	40,602	363	40,239	36,840	316	36,524	3,762	47	3,715
Malignant neoplasms of genital organs	180-187	57,528	31,897	25,631	49,635	27,342	22,293	7,893	4,555	3,338
Malignant neoplasms of urinary organs	188, 189	21,995	14,817	7,178	20,262	13,733	6,529	1,733	1,084	649
Malignant neoplasms of all other and unspecified sites	170-173, 190-199	201,218	104,431	96,787	180,230	92,918	87,312	20,988	11,513	9,475
Leukemia	204-207	19,633	11,203	8,430	18,025	10,279	7,746	1,608	924	684
Other neoplasms of lymphatic and hematopoietic tissues	200-203, 208, 209	27,293	14,605	12,688	24,749	13,206	11,543	2,544	1,399	1,145
Benign neoplasms and neoplasms of unspecified nature	210-239	9,179	4,312	4,867	8,098	3,841	4,257	1,081	471	610
Diabetes mellitus	250	130,672	57,322	73,350	113,738	50,754	62,984	16,934	6,568	10,366
Avitaminoses and other nutritional deficiencies	260-269	31,700	15,209	16,491	27,742	13,026	14,716	3,958	2,183	1,775
Anemias	280-285	27,156	12,393	14,763	23,020	10,460	12,560	4,136	1,933	2,203
Meningitis	320	3,200	1,820	1,380	2,408	1,360	1,048	792	460	332
Major cardiovascular diseases	390-448	1,240,359	649,901	590,458	1,105,391	579,033	526,358	134,968	70,868	64,100
Diseases of heart	390-398, 402, 404, 410-429	1,014,863	548,644	466,219	906,652	490,601	416,051	108,211	58,043	50,168
Active rheumatic fever and chronic rheumatic heart disease	390-398	24,682	11,184	13,498	22,701	10,247	12,454	1,981	937	1,044
Hypertensive heart disease	402	13,654	5,721	7,933	10,389	4,250	6,139	3,265	1,471	1,794
Hypertensive heart and renal disease	404	4,101	1,851	2,250	3,431	1,529	1,902	670	322	348
Ischemic heart disease	410-413	763,810	416,338	347,472	694,673	379,379	315,294	69,137	36,959	32,178
Acute myocardial infarction	410	326,643	197,873	128,770	301,305	183,556	117,749	25,338	14,317	11,021
Other acute and subacute forms of ischemic heart disease	411	16,115	9,954	6,161	14,378	8,874	5,504	1,737	1,080	657
Chronic ischemic heart disease	412	604,945	318,489	286,456	550,284	289,839	260,445	54,661	28,650	26,011
Angina pectoris	413	4,108	2,390	1,718	3,855	2,257	1,598	253	133	120
Chronic disease of endocardium and other myocardial insufficiency	424, 428	14,389	7,708	6,681	12,882	6,834	6,048	1,507	874	633
All other forms of heart disease	420-423, 425-427, 429	488,000	260,396	227,604	433,820	231,238	202,582	54,180	29,158	25,022
Hypertension	400, 401, 403	13,217	6,110	7,107	10,704	4,910	5,794	2,513	1,200	1,313

Cerebrovascular diseases	430-438	289,246	125,215	164,031	254,255	108,795	145,460	34,991	16,420	18,571
Cerebral hemorrhage	431	32,743	14,990	17,753	27,484	12,321	15,163	5,259	2,669	2,590
Cerebral thrombosis	433	55,876	23,842	32,034	49,939	21,049	28,890	5,937	2,793	3,144
Cerebral embolism	434	3,355	1,435	1,920	3,110	1,312	1,798	245	123	122
All other cerebrovascular diseases	430, 432, 435-438	225,720	96,611	129,109	199,421	84,492	114,929	26,299	12,119	14,180
Arteriosclerosis	440	187,126	83,854	103,272	173,078	77,274	95,804	14,048	6,580	7,468
Other diseases of arteries, arterioles, and capillaries	441-448	53,318	29,958	23,360	48,314	27,415	20,899	5,004	2,543	2,461
Acute bronchitis and bronchiolitis	466	2,752	1,542	1,210	2,530	1,410	1,120	222	132	90
Influenza and pneumonia	470-474, 480-486	186,512	103,202	83,310	166,601	90,911	75,690	19,911	12,291	7,620
Influenza	470-474	5,754	2,365	3,389	5,405	2,199	3,206	349	166	183
Pneumonia	480-486	180,771	100,841	79,930	161,209	88,716	72,493	19,562	12,125	7,437
Bronchitis, emphysema, and asthma	490-493	54,508	38,753	15,755	51,016	36,311	14,705	3,492	2,442	1,050
Chronic and unqualified bronchitis	490, 491	10,425	6,381	4,044	9,830	6,018	3,812	595	363	232
Emphysema	492	42,364	32,727	9,637	40,166	30,930	9,236	2,198	1,797	401
Asthma	493	6,278	2,781	3,497	5,345	2,329	3,016	933	452	481
Peptic ulcer	531-533	15,393	9,271	6,122	13,906	8,317	5,589	1,487	954	533
Appendicitis	540-543	1,220	675	545	1,017	561	456	203	114	89
Hernia and intestinal obstruction	550-553, 560	19,798	8,188	11,610	17,596	7,093	10,503	2,202	1,095	1,107
Cirrhosis of liver	571	44,089	29,361	14,728	36,733	24,586	12,147	7,356	4,775	2,581
Cholelithiasis, cholecystitis, and cholangitis	574, 575	8,151	3,446	4,705	7,480	3,184	4,296	671	262	409
Nephritis and nephrosis	580-584	28,698	15,687	13,011	22,407	12,562	9,845	6,291	3,125	3,166
Acute nephritis and nephrotic syndrome	580, 581	11,905	6,608	5,297	9,993	5,622	4,371	1,912	986	926
Chronic and unqualified nephritis and renal sclerosis	582-584	17,846	9,656	8,190	13,249	7,418	5,831	4,597	2,238	2,359
Infections of kidney	590	8,823	3,865	4,958	7,707	3,313	4,394	1,116	552	564
Hyperplasia of prostate	600	4,469	4,469	...	4,006	4,006	...	463	463	...
Complications of pregnancy, childbirth, and the										
puerperium	630-678	372	...	372	202	...	202	170	...	170
Abortions	640-645	22	...	22	8	...	8	14	...	14
Other complications of pregnancy, childbirth,										
and the puerperium	630-639, 650-678	353	...	353	195	...	195	158	...	158
Congenital anomalies	740-759	17,861	9,616	8,245	14,891	8,028	6,863	2,970	1,588	1,382
Certain causes of mortality in early										
infancy	760-769.2, 769.4-772, 774-778	28,962	16,608	12,354	20,287	11,728	8,559	8,675	4,880	3,795
Birth injury, difficult labor, and other anoxic										
and hypoxic conditions	764-768, 772, 776	17,236	10,167	7,069	12,424	7,375	5,049	4,812	2,792	2,020
Other causes of mortality in early										
infancy	Remainder of 760-778	26,023	14,866	11,157	18,034	10,406	7,628	7,989	4,460	3,529
Symptoms and ill-defined conditions	780-796	402,871	214,027	188,844	350,426	185,319	165,107	52,445	28,708	23,737
All other diseases	Residual	509,290	274,013	235,277	449,024	240,671	208,353	60,266	33,342	26,924
Accidents	E800-E949	161,561	102,770	58,791	140,558	88,468	52,090	21,003	14,302	6,701
Motor vehicle accidents	E810-E823	53,559	38,990	14,569	46,987	34,090	12,897	6,572	4,900	1,672
All other accidents	E800-E807, E825-E949	108,516	64,181	44,335	94,024	54,729	39,295	14,492	9,452	5,040
Suicide	E950-E959	27,459	20,287	7,172	25,402	18,707	6,695	2,057	1,580	477
Homicide	E960-E978	20,634	15,979	4,655	11,334	8,519	2,815	9,300	7,460	1,840
Other external causes	E980-E999	4,433	3,050	1,383	3,431	2,340	1,091	1,002	710	292

Table 3. Death rates for 69 selected causes as reported causes, by race and sex: United States, 1978

(Rates per 100,000 population in specified group. Refers only to resident deaths occurring within the United States. Excludes fetal deaths)

Cause of death and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965	All races			White			All other		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Bacillary dysentery and amebiasis	004, 006	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Enteritis and other diarrheal diseases	008, 009	1.7	1.6	1.8	1.6	1.4	1.7	2.6	2.4
Tuberculosis, all forms	010-019	4.5	5.6	3.5	4.1	4.9	3.3	7.1	4.4
Tuberculosis of respiratory system	010-012	3.9	4.8	3.0	3.5	4.2	2.9	5.9	3.6
Tuberculosis, other forms	013-019	0.7	0.9	0.5	0.6	0.7	0.5	1.3	0.9
Whooping cough	033	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Streptococcal sore throat and scarlet fever	034	0.0	0.0	0.0	0.0	0.0	-	-	-
Meningococcal infections	036	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Septicemia	038	23.1	24.7	21.5	21.8	23.2	20.4	31.5	28.4
Acute poliomyelitis	040-043	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Measles	055	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Syphilis and its sequelae	090-097	0.2	0.3	0.2	0.2	0.1	0.7	0.8	0.6
Other infective and parasitic diseases	Remainder of 000-136	7.0	7.5	6.6	6.8	7.1	6.4	8.8	8.0
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140-209	203.3	230.1	178.0	209.3	234.4	185.4	165.3	132.1
Malignant neoplasms of buccal cavity and pharynx	140-149	4.5	6.6	2.6	4.5	6.5	2.7	4.5	2.2
Malignant neoplasms of digestive organs and peritoneum	150-159	53.6	58.1	49.4	54.9	58.7	51.2	45.6	38.0
Malignant neoplasms of respiratory system	160-163	49.3	76.1	24.0	50.8	77.7	25.2	39.7	65.9
Malignant neoplasm of breast	174	18.3	0.3	35.3	19.2	0.3	37.1	12.5	0.3
Malignant neoplasms of genital organs	180-187	25.9	29.5	22.5	25.9	29.2	22.7	26.2	31.8
Malignant neoplasms of urinary organs	188, 189	9.9	13.7	6.3	10.6	14.7	6.6	5.8	7.6
Malignant neoplasms of all other and unspecified sites	170-173, 190-199	90.6	96.7	84.8	93.9	99.2	88.8	69.6	80.3
Leukemia	204-207	8.8	10.4	7.4	9.4	11.0	7.9	5.3	6.4
Other neoplasms of lymphatic and hematopoietic tissues	200-203, 208, 209	12.3	13.5	11.1	12.9	14.1	11.7	8.4	9.8
Benign neoplasms and neoplasms of unspecified nature	210-239	4.1	4.0	4.3	4.2	4.1	4.3	3.6	3.9
Diabetes mellitus	250	58.8	53.1	64.3	59.3	54.2	64.1	56.2	45.8
Avitaminoses and other nutritional deficiencies	260-269	14.3	14.1	14.4	14.5	13.9	15.0	13.1	15.2
Anemias	280-285	12.2	11.5	12.9	12.0	11.2	12.8	13.7	13.5
Meningitis	320	1.4	1.7	1.2	1.3	1.5	1.1	2.6	3.2
Major cardiovascular diseases	390-448	558.5	602.0	517.3	575.8	618.4	535.3	447.9	494.5
Diseases of heart	390-398, 402, 404, 410-429	456.9	508.2	408.5	472.3	524.0	423.1	359.1	405.0
Active rheumatic fever and chronic rheumatic heart disease	390-398	11.1	10.4	11.8	11.8	10.9	12.7	6.6	6.5
Hypertensive heart disease	402	6.1	5.3	7.0	5.4	4.5	6.2	10.8	10.3
Hypertensive heart and renal disease	404	1.8	1.7	2.0	1.8	1.6	1.9	2.2	2.2
Ischemic heart disease	410-413	343.9	385.6	304.4	361.9	405.2	320.7	229.4	257.9
Acute myocardial infarction	410	147.1	183.3	112.8	157.0	196.0	119.8	84.1	99.9
Other acute and subacute forms of ischemic heart disease	411	7.3	9.2	5.4	7.5	9.5	5.6	5.8	7.5
Chronic ischemic heart disease	412	272.4	295.0	251.0	286.7	309.5	264.9	181.4	199.9
Angina pectoris	413	1.8	2.2	1.5	2.0	2.4	1.6	0.8	0.9
Chronic disease of endocardium and other myocardial insufficiency	424, 428	6.5	7.1	5.9	6.7	7.3	6.2	5.0	6.1
All other forms of heart disease	420-423, 425-427, 429	219.7	241.2	199.4	226.0	247.0	206.0	179.8	203.5
Hypertension	400, 401, 403	6.0	5.7	6.2	5.6	5.2	5.9	8.3	8.4

Cerebrovascular diseases	430-438	130.2	116.0	143.7	132.5	116.2	147.9	116.1	114.6	117.5
Cerebral hemorrhage	431	14.7	13.9	15.6	14.3	13.2	15.4	17.5	18.6	16.4
Cerebral thrombosis	433	25.2	22.1	28.1	26.0	22.5	29.4	19.7	19.5	19.9
Cerebral embolism	434	1.5	1.3	1.7	1.6	1.4	1.8	0.8	0.9	0.8
All other cerebrovascular diseases	430, 432, 435-438	101.6	89.5	113.1	103.9	90.2	116.9	87.3	84.6	89.7
Arteriosclerosis	440	84.3	77.7	90.5	90.2	82.5	97.4	46.6	45.9	47.2
Other diseases of arteries, arterioles, and capillaries	441-448	24.0	27.7	20.5	25.2	29.3	21.3	16.6	17.7	15.6
Acute bronchitis and bronchiolitis	466	1.2	1.4	1.1	1.3	1.5	1.1	0.7	0.9	0.6
Influenza and pneumonia	470-474, 480-486	84.0	95.6	73.0	86.8	97.1	77.0	66.1	85.8	48.2
Influenza	470-474	2.6	2.2	3.0	2.8	2.3	3.3	1.2	1.2	1.2
Pneumonia	480-486	81.4	93.4	70.0	84.0	94.7	73.7	64.9	84.6	47.1
Bronchitis, emphysema, and asthma	490-493	24.5	35.9	13.8	26.6	38.8	15.0	11.6	17.0	6.6
Chronic and unqualified bronchitis	490, 491	4.7	5.9	3.5	5.1	6.4	3.9	2.0	2.5	1.5
Emphysema	492	19.1	30.3	8.4	20.9	33.0	9.4	7.3	12.5	2.5
Asthma	493	2.8	2.6	3.1	2.8	2.5	3.1	3.1	3.2	3.0
Peptic ulcer	531-533	6.9	8.6	5.4	7.2	8.9	5.7	4.9	6.7	3.4
Appendicitis	540-543	0.5	0.6	0.5	0.5	0.6	0.5	0.7	0.8	0.6
Hernia and intestinal obstruction	550-553, 560	8.9	7.6	10.2	9.2	7.6	10.7	7.3	7.6	7.0
Cirrhosis of liver	571	19.9	27.2	12.9	19.1	26.3	12.4	24.4	33.3	16.3
Cholelithiasis, cholecystitis, and cholangitis	574, 575	3.7	3.2	4.1	3.9	3.4	4.4	2.2	1.8	2.6
Nephritis and nephrosis	580-584	12.9	14.5	11.4	11.7	13.4	10.0	20.9	21.8	20.0
Acute nephritis and nephrotic syndrome	580, 581	5.4	6.1	4.6	5.2	6.0	4.4	6.3	6.9	5.9
Chronic and unqualified nephritis and renal sclerosis	582-584	8.0	8.9	7.2	6.9	7.9	5.9	15.3	15.6	14.9
Infections of kidney	590	4.0	3.6	4.3	4.0	3.5	4.5	3.7	3.9	3.6
Hyperplasia of prostate	600	2.0	4.1	...	2.1	4.3	...	1.5	3.2	...
Complications of pregnancy, childbirth, and the puerperium	630-678	0.2	...	0.3	0.1	...	0.2	0.6	...	1.1
Abortions	640-645	0.0	...	0.0	0.0	...	0.0	0.0	...	0.1
Other complications of pregnancy, childbirth, and the puerperium	630-639, 650-678	0.2	...	0.3	0.1	...	0.2	0.5	...	1.0
Congenital anomalies	740-759	8.0	8.9	7.2	7.8	8.6	7.0	9.9	11.1	8.7
Certain causes of mortality in early infancy	760-769.2, 769.4-772, 774-778	13.0	15.4	10.8	10.6	12.5	8.7	28.8	34.1	24.0
Birth injury, difficult labor, and other anoxic and hypoxic conditions	764-768, 772, 776	7.8	9.4	6.2	6.5	7.9	5.1	16.0	19.5	12.8
Other causes of mortality in early infancy	Remainder of 760-778	11.7	13.8	9.8	9.4	11.1	7.8	26.5	31.1	22.3
Symptoms and ill-defined conditions	780-796	181.4	198.2	165.5	182.6	197.9	167.9	174.0	200.3	150.2
All other diseases	Residual	229.3	253.8	206.1	233.9	257.0	211.9	200.0	232.7	170.3
Accidents	E800-E949	72.7	95.2	51.5	73.2	94.5	53.0	69.7	99.8	42.4
Motor vehicle accidents	E810-E823	24.1	36.1	12.8	24.5	36.4	13.1	21.8	34.2	10.6
All other accidents	E800-E807, E825-E949	48.9	59.4	38.8	49.0	58.5	40.0	48.1	66.0	31.9
Suicide	E950-E959	12.4	18.8	6.3	13.2	20.0	6.8	6.8	11.0	3.0
Homicide	E960-E978	9.3	14.8	4.1	5.9	9.1	2.9	30.9	52.1	11.6
Other external causes	E980-E999	2.0	2.8	1.2	1.8	2.5	1.1	3.3	5.0	1.8

Table 4. Ratios of reported causes of death to underlying causes for 69 selected causes, by race and sex: United States, 1978

[Refers only to resident deaths occurring within the United States. Excludes fetal deaths]

Cause of death and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965	All races			White			All other		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Bacillary dysentery and amebiasis 004, 006	1.6	1.6	1.5	1.8	1.9	1.7	1.2	1.1	1.3
Enteritis and other diarrheal diseases 008, 009	2.0	1.9	2.1	2.2	2.1	2.3	1.5	1.5	1.5
Tuberculosis, all forms 010-019	3.4	3.1	4.0	3.9	3.5	4.6	2.4	2.4	2.6
Tuberculosis of respiratory system 010-012	3.8	3.3	4.8	4.3	3.8	5.4	2.6	2.4	3.0
Tuberculosis, other forms 013-019	2.3	2.4	2.2	2.4	2.5	2.3	2.1	2.3	1.9
Whooping cough 033	2.0	1.3	2.7	2.0	2.0	2.0	2.0	1.0	4.0
Streptococcal sore throat and scarlet fever 034	2.4	1.5	6.0	2.4	1.5	6.0	-	-	-
Meningococcal infections 036	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Septicemia 038	6.6	6.6	6.6	6.9	6.9	6.9	5.5	5.6	5.4
Acute poliomyelitis 040-043	10.1	8.7	13.3	9.8	8.3	13.0	-	-	-
Measles 055	2.5	3.0	2.1	2.6	3.7	2.0	2.0	1.0	3.0
Syphilis and its sequelae 090-097	3.1	3.5	2.6	3.2	3.6	2.6	3.0	3.4	2.7
Other infective and parasitic diseases Remainder of 000-136	3.2	3.3	3.2	3.4	3.4	3.3	2.8	2.9	2.7
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	1.1	1.2	1.1	1.1	1.2	1.1	1.1	1.1	1.1
Malignant neoplasms of buccal cavity and pharynx 140-149	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Malignant neoplasms of digestive organs and peritoneum 150-159	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Malignant neoplasms of respiratory system 160-163	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Malignant neoplasm of breast 174	1.2	1.3	1.2	1.2	1.3	1.2	1.1	1.1	1.1
Malignant neoplasms of genital organs 180-187	1.3	1.4	1.1	1.3	1.4	1.1	1.2	1.3	1.1
Malignant neoplasms of urinary organs 188, 189	1.3	1.3	1.2	1.3	1.3	1.2	1.2	1.2	1.2
Malignant neoplasms of all other and unspecified sites 170-173, 190-199	4.1	4.1	4.2	4.1	4.1	4.2	3.8	3.9	3.7
Leukemia 204-207	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2
Other neoplasms of lymphatic and hematopoietic tissues 200-203, 208, 209	1.3	1.3	1.2	1.3	1.3	1.2	1.2	1.2	1.2
Benign neoplasms and neoplasms of unspecified nature 210-239	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.7	1.9
Diabetes mellitus 250	3.9	4.1	3.7	4.0	4.3	3.8	3.1	3.2	3.0
Avitaminoses and other nutritional deficiencies 260-269	11.1	13.1	9.7	11.5	13.7	10.0	9.1	10.4	7.8
Anemias 280-285	8.2	8.3	8.1	8.7	8.9	8.6	6.2	6.1	6.3
Meningitis 320	2.1	2.1	2.0	2.1	2.2	2.1	1.8	2.0	1.7
Major cardiovascular diseases 390-448	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.3
Diseases of heart 390-398, 402, 404, 410-429	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
Active rheumatic fever and chronic rheumatic heart disease 390-398	1.8	1.9	1.8	1.9	1.9	1.8	1.7	1.8	1.6
Hypertensive heart disease 402	1.9	2.0	1.9	1.9	1.9	1.9	2.1	2.0	2.1
Hypertensive heart and renal disease 404	1.3	1.3	1.3	1.3	1.3	1.2	1.3	1.3	1.3
Ischemic heart disease 410-413	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Acute myocardial infarction 410	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Other acute and subacute forms of ischemic heart disease 411	3.9	3.8	4.2	4.1	3.9	4.3	3.1	3.0	3.3
Chronic ischemic heart disease 412	1.8	1.9	1.7	1.8	1.9	1.7	1.6	1.6	1.6
Angina pectoris 413	16.2	17.4	14.8	17.3	19.0	15.4	8.4	7.4	10.0
Chronic disease of endocardium and other myocardial insufficiency 424, 428	3.5	3.8	3.2	3.6	4.0	3.3	2.8	3.0	2.6
All other forms of heart disease 420-423, 425-427, 429	8.2	8.0	8.4	8.7	8.5	9.0	5.6	5.5	5.6

Hypertension	400, 401, 403	2.4	2.4	2.4	2.4	2.4	2.5	2.3	2.3	2.4
Cerebrovascular diseases	430-438	1.6	1.7	1.6	1.7	1.7	1.6	1.6	1.6	1.6
Cerebral hemorrhage	431	1.4	1.5	1.4	1.4	1.5	1.4	1.4	1.4	1.5
Cerebral thrombosis	433	1.4	1.5	1.4	1.4	1.5	1.4	1.5	1.5	1.5
Cerebral embolism	434	4.4	4.3	4.5	4.4	4.3	4.5	4.3	4.0	4.7
All other cerebrovascular diseases	430, 432, 435-438	2.0	2.0	1.9	2.0	2.1	2.0	1.9	1.9	1.8
Arteriosclerosis	440	6.5	7.3	5.9	6.5	7.3	5.9	6.6	6.9	6.4
Other diseases of arteries, arterioles, and capillaries	441-448	2.0	1.9	2.2	2.0	1.9	2.2	2.1	2.1	2.2
Acute bronchitis and bronchiolitis	466	3.6	3.7	3.6	3.8	4.0	3.6	2.3	2.0	3.0
Influenza and pneumonia	470-474, 480-486	3.2	3.4	3.0	3.2	3.4	3.0	2.9	2.9	2.9
Influenza	470-474	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Pneumonia	480-486	3.3	3.5	3.2	3.4	3.5	3.2	2.9	3.0	2.9
Bronchitis, emphysema, and asthma	490-493	2.5	2.5	2.4	2.5	2.6	2.4	2.4	2.4	2.3
Chronic and unqualified bronchitis	490, 491	2.4	2.3	2.5	2.4	2.3	2.5	2.3	2.3	2.5
Emphysema	492	2.7	2.8	2.5	2.7	2.8	2.5	2.6	2.6	2.7
Asthma	493	3.4	3.8	3.1	3.6	4.2	3.2	2.4	2.5	2.4
Peptic ulcer	531-533	2.8	2.9	2.6	2.8	2.9	2.6	2.7	2.7	2.8
Appendicitis	540-543	1.7	1.6	1.7	1.7	1.7	1.8	1.5	1.6	1.4
Hernia and intestinal obstruction	550-553, 560	3.6	3.5	3.6	3.6	3.6	3.7	3.1	2.9	3.2
Cirrhosis of liver	571	1.5	1.5	1.4	1.5	1.5	1.4	1.4	1.5	1.4
Cholelithiasis, cholecystitis, and cholangitis	574, 575	2.8	2.6	2.9	2.8	2.6	2.9	2.8	2.6	2.9
Nephritis and nephrosis	580-584	3.2	3.3	3.2	3.4	3.5	3.3	2.7	2.7	2.7
Acute nephritis and nephrotic syndrome	580, 581	5.7	5.8	5.6	5.9	6.1	5.6	5.2	4.7	5.8
Chronic and unqualified nephritis and renal sclerosis	582-584	2.6	2.7	2.6	2.7	2.8	2.7	2.4	2.4	2.4
Infections of kidney	590	2.8	3.1	2.7	2.9	3.2	2.7	2.6	2.7	2.4
Hyperplasia of prostate	600	5.2	5.2	...	5.5	5.5	...	3.8	3.8	...
Complications of pregnancy, childbirth, and the puerperium	630-678	1.2	...	1.2	1.2	...	1.2	1.1	...	1.1
Abortions	640-645	1.4	...	1.4	2.0	...	2.0	1.2	...	1.2
Other complications of pregnancy, childbirth, and the puerperium	630-639, 650-678	1.2	...	1.2	1.2	...	1.2	1.1	...	1.1
Congenital anomalies	740-759	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3
Certain causes of mortality in early infancy	760-769.2, 769.4-772, 774-778	1.3	1.3	1.3	1.3	1.3	1.4	1.2	1.2	1.2
Birth injury, difficult labor, and other anoxic and hypoxic conditions	764-768, 772, 776	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4
Other causes of mortality in early infancy	Remainder of 760-778	2.5	2.6	2.4	2.7	2.8	2.6	2.2	2.3	2.1
Symptoms and ill-defined conditions	780-796	12.9	11.9	14.2	15.3	14.1	17.0	6.2	6.0	6.5
All other diseases	Residual	3.7	3.5	3.9	3.8	3.6	4.0	3.2	3.1	3.4
Accidents	E800-E949	1.5	1.4	1.9	1.6	1.4	1.9	1.4	1.3	1.6
Motor vehicle accidents	E810-E823	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All other accidents	E800-E807, E825-E949	2.0	1.8	2.5	2.1	1.9	2.6	1.7	1.5	2.0
Suicide	E950-E959	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Homicide	E960-E978	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Other external causes	E980-E999	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0

Table 5. 10 leading causes of death according to underlying causes and reported causes, number of deaths, percent of total, and rank order, by race and sex: United States, 1978

[Refers only to resident deaths occurring within the United States. Excludes fetal deaths]

Race, sex, cause of death, and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965	Underlying cause			Reported cause		
	Number of deaths	Percent of total	Rank order	Number of deaths	Percent of total	Rank order
All races, both sexes						
All causes	1,927,788	100.0	...	1,927,788	100.0	...
Diseases of heart 390-398,402,404,410-429	729,510	37.8	1	1,014,863	52.6	1
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	396,992	20.6	2	451,612	23.4	2
Cerebrovascular diseases 430-438	175,629	9.1	3	289,246	15.0	3
Accidents E800-E949	105,561	5.5	4	161,561	8.4	6
Motor vehicle accidents E810-E823	52,411	2.7	...	53,559	2.8	...
All other accidents E800-E807,E825-E949	53,150	2.8	...	108,516	5.6	...
Influenza and pneumonia 470-474,480-486	58,319	3.0	5	186,512	9.7	5
Diabetes mellitus 250	33,841	1.8	6	130,672	6.8	7
Cirrhosis of liver 571	30,066	1.6	7	44,089	2.3	10
Arteriosclerosis 440	28,940	1.5	8	187,126	9.7	4
Suicide E950-E959	27,294	1.4	9	27,459	1.4	...
Certain causes of mortality in early infancy 760-769,2,769,4-772,774-778	22,033	1.1	10	28,962	1.5	...
Bronchitis, emphysema, and asthma 490-493	21,875	1.1	...	54,508	2.8	8
Septicemia 038	7,800	0.4	...	51,265	2.7	9
White, male						
All causes	920,123	100.0	...	920,123	100.0	...
Diseases of heart 390-398,402,404,410-429	359,700	39.1	1	490,601	53.3	1
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	189,956	20.6	2	219,485	23.9	2
Cerebrovascular diseases 430-438	63,439	6.9	3	108,795	11.8	3
Accidents E800-E949	62,868	6.8	4	88,468	9.6	5
Motor vehicle accidents E810-E823	33,341	3.6	...	34,090	3.7	...
All other accidents E800-E807,E825-E949	29,527	3.2	...	54,729	5.9	...
Influenza and pneumonia 470-474,480-486	26,578	2.9	5	90,911	9.9	4
Suicide E950-E959	18,619	2.0	6	18,707	2.0	...
Cirrhosis of liver 571	16,413	1.8	7	24,586	2.7	9
Bronchitis, emphysema, and asthma 490-493	14,228	1.5	8	36,311	3.9	8
Diabetes mellitus 250	11,846	1.3	9	50,754	5.5	7
Arteriosclerosis 440	10,583	1.2	10	77,274	8.4	6
Septicemia 038	3,150	0.3	...	21,690	2.4	10
White, female						
All causes	769,599	100.0	...	769,599	100.0	...
Diseases of heart 390-398,402,404,410-429	298,002	38.7	1	416,051	54.1	1
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	162,083	21.1	2	182,302	23.7	2
Cerebrovascular diseases 430-438	90,361	11.7	3	145,460	18.9	3
Accidents E800-E949	27,524	3.6	4	52,090	6.8	7
Motor vehicle accidents E810-E823	12,633	1.6	...	12,897	1.7	...
All other accidents E800-E807,E825-E949	14,891	1.9	...	39,295	5.1	...
Influenza and pneumonia 470-474,480-486	24,854	3.2	5	75,690	9.8	5
Diabetes mellitus 250	16,453	2.1	6	62,984	8.2	6
Arteriosclerosis 440	16,230	2.1	7	95,804	12.4	4
Cirrhosis of liver 571	8,464	1.1	8	12,147	1.6	...
Suicide E950-E959	6,631	0.9	9	6,695	0.9	...
Certain causes of mortality in early infancy 760-769,2,769,4-772,774-778	6,297	0.8	10	8,559	1.1	...
Septicemia 038	2,921	0.4	...	20,085	2.6	8
Avitaminoses and other nutritional deficiencies 260-269	1,466	0.2	...	14,716	1.9	9
Bronchitis, emphysema, and asthma 490-493	6,173	0.8	...	14,705	1.9	10

Table 5. 10 leading causes of death according to underlying causes and reported causes, number of deaths, percent of total, and rank order, by race and sex: United States, 1978—Con.

[Refers only to resident deaths occurring within the United States. Excludes fetal deaths]

Race, sex, cause of death, and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965	Underlying cause			Reported cause		
	Number of deaths	Percent of total	Rank order	Number of deaths	Percent of total	Rank order
All other, male						
All causes	135,167	100.0	...	135,167	100.0	...
Diseases of heart 390-398,402,404,410-429	38,567	28.5	1	58,043	42.9	1
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	26,041	19.3	2	28,940	21.4	2
Accidents E800-E949	11,013	8.1	3	14,302	10.6	4
Motor vehicle accidents E810-E823	4,798	3.5	...	4,900	3.6	...
All other accidents E800-E807,E825-E949	6,215	4.6	...	9,452	7.0	...
Cerebrovascular diseases 430-438	10,209	7.6	4	16,420	12.1	3
Homicide E960-E978	7,409	5.5	5	7,460	5.5	6
Influenza and pneumonia 470-474,480-486	4,218	3.1	6	12,291	9.1	5
Certain causes of mortality in early infancy 760-769,2,769.4-772,774-778	3,960	2.9	7	4,880	3.6	10
Cirrhosis of liver 571	3,280	2.4	8	4,775	3.5	...
Diabetes mellitus 250	2,064	1.5	9	6,568	4.9	8
Suicide E950-E959	1,569	1.2	10	1,580	1.2	...
Arteriosclerosis 440	958	0.7	...	6,580	4.9	7
Septicemia 038	900	0.7	...	5,004	3.7	9
All other, female						
All causes	102,899	100.0	...	102,899	100.0	...
Diseases of heart 390-398,402,404,410-429	33,241	32.3	1	50,168	48.8	1
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	18,912	18.4	2	20,885	20.3	2
Cerebrovascular diseases 430-438	11,620	11.3	3	18,571	18.0	3
Accidents E800-E949	4,156	4.0	4	6,701	6.5	7
Motor vehicle accidents E810-E823	1,639	1.6	...	1,672	1.6	...
All other accidents E800-E807,E825-E949	2,517	2.4	...	5,040	4.9	...
Diabetes mellitus 250	3,478	3.4	5	10,366	10.1	4
Certain causes of mortality in early infancy 760-769,2,769.4-772,774-778	3,043	3.0	6	3,795	3.7	9
Influenza and pneumonia 470-474,480-486	2,669	2.6	7	7,620	7.4	5
Cirrhosis of liver 571	1,909	1.9	8	2,581	2.5	...
Homicide E960-E978	1,823	1.8	9	1,840	1.8	...
Arteriosclerosis 440	1,169	1.1	10	7,468	7.3	6
Septicemia 038	829	0.8	...	4,486	4.4	8
Nephritis and nephrosis 580-584	1,152	1.1	...	3,166	3.1	10

Table 6. 10 leading causes of death according to underlying causes and reported causes, number of deaths, percent of total, and rank order, by age: United States, 1978

[Refers only to resident deaths occurring within the United States. Excludes fetal deaths]

Age, cause of death, and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965	Underlying cause			Reported cause		
	Number of deaths	Percent of total	Rank order	Number of deaths	Percent of total	Rank order
1-4 years						
All causes	8,429	100.0	...	8,429	100.0	...
Accidents E800-E949	3,504	41.6	1	3,988	47.3	1
Motor vehicle accidents E810-E823	1,287	15.3	...	1,298	15.4	...
All other accidents E800-E807,E825-E949	2,217	26.3	...	2,698	32.0	...
Congenital anomalies 740-759	1,027	12.2	2	1,245	14.8	3
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	599	7.1	3	645	7.7	5
Influenza and pneumonia 470-474,480-486	354	4.2	4	839	10.0	4
Homicide E960-E978	313	3.7	5	317	3.8	8
Diseases of heart 390-398,402,404,410-429	279	3.3	6	1,647	19.5	2
Meningitis 320	220	2.6	7	284	3.4	9
Meningococcal infections 036	112	1.3	8	115	1.4	...
Cerebrovascular diseases 430-438	100	1.2	9	432	5.1	6
Anemias 280-285	78	0.9	10	166	2.0	10
Septicemia 038	65	0.3	...	332	3.9	7
5-14 years						
All causes	12,030	100.0	...	12,030	100.0	...
Accidents E800-E949	6,118	50.9	1	6,534	54.3	1
Motor vehicle accidents E810-E823	3,130	26.0	...	3,158	26.3	...
All other accidents E800-E807,E825-E949	2,988	24.8	...	3,395	28.2	...
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	1,500	12.5	2	1,584	13.2	3
Congenital anomalies 740-759	650	5.4	3	858	7.1	5
Homicide E960-E978	454	3.8	4	455	3.8	7
Diseases of heart 390-398,402,404,410-429	357	3.0	5	1,960	16.3	2
Influenza and pneumonia 470-474,480-486	304	2.5	6	928	7.7	4
Cerebrovascular diseases 430-438	199	1.7	7	608	5.1	6
Suicide E950-E959	153	1.3	8	154	1.3	10
Anemias 280-285	87	0.7	9	214	1.8	9
Benign neoplasms and neoplasms of unspecified nature 210-239	83	0.7	10	105	0.9	...
Septicemia 038	42	0.3	...	376	3.1	8
15-24 years						
All causes	48,500	100.0	...	48,500	100.0	...
Accidents E800-E949	26,622	54.9	1	27,613	56.9	1
Motor vehicle accidents E810-E823	19,164	39.5	...	19,341	39.9	...
All other accidents E800-E807,E825-E949	7,458	15.4	...	8,453	17.4	...
Homicide E960-E978	5,443	11.2	2	5,466	11.3	2
Suicide E950-E959	5,115	10.5	3	5,144	10.6	3
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	2,588	5.3	4	2,740	5.6	5
Diseases of heart 390-398,402,404,410-429	1,098	2.3	5	4,096	8.4	4
Congenital anomalies 740-759	648	1.3	6	925	1.9	8
Influenza and pneumonia 470-474,480-486	553	1.1	7	1,958	4.0	6
Cerebrovascular diseases 430-438	473	1.0	8	1,386	2.9	7
Diabetes mellitus 250	140	0.3	9	239	0.5	...
Benign neoplasms and neoplasms of unspecified nature 210-239	136	0.3	10	176	0.4	...
Septicemia 038	89	0.2	...	734	1.5	9
Anemias 280-285	122	0.3	...	301	0.6	10
25-44 years						
All causes	103,991	100.0	...	103,991	100.0	...
Accidents E800-E949	25,024	24.1	1	27,879	26.8	1
Motor vehicle accidents E810-E823	14,574	14.0	...	14,741	14.2	...
All other accidents E800-E807,E825-E949	10,450	10.0	...	13,282	12.8	...
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140-209	16,866	16.2	2	17,543	16.9	3
Diseases of heart 390-398,402,404,410-429	14,167	13.6	3	23,925	23.0	2
Suicide E950-E959	9,503	9.1	4	9,562	9.2	4
Homicide E960-E978	9,127	8.8	5	9,178	8.8	5
Cirrhosis of liver 571	4,686	4.5	6	5,996	5.8	6

Table 6. 10 leading causes of death according to underlying causes and reported causes, number of deaths, percent of total, and rank order, by age: United States, 1978—Con.

[Refers only to resident deaths occurring within the United States. Excludes fetal deaths]

Age, cause of death, and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965	Underlying cause			Reported cause		
	Number of deaths	Percent of total	Rank order	Number of deaths	Percent of total	Rank order
25–44 years—Con.						
Cerebrovascular diseases 430–438	3,286	3.2	7	5,367	5.2	8
Influenza and pneumonia 470–474,480–486	1,804	1.7	8	5,802	5.6	7
Diabetes mellitus 250	1,484	1.4	9	2,909	2.8	9
Congenital anomalies 740–759	709	0.7	10	1,193	1.1	...
Septicemia 038	344	0.3	...	2,720	2.6	10
45–64 years						
All causes	434,246	100.0	...	434,246	100.0	...
Diseases of heart 390–398,402,404,410–429	151,564	34.9	1	208,868	48.1	1
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140–209	134,115	30.9	2	143,281	33.0	2
Cerebrovascular diseases 430–438	21,670	5.0	3	35,468	8.2	3
Accidents E800–E949	18,774	4.3	4	30,696	7.1	4
Motor vehicle accidents E810–E823	8,048	1.9	...	8,332	1.9	...
All other accidents E800–E807,E825–E949	10,726	2.5	...	22,448	5.2	...
Cirrhosis of liver 571	16,449	3.8	5	22,815	5.3	7
Diabetes mellitus 250	7,790	1.8	6	27,905	6.4	6
Suicide E950–E959	7,724	1.8	7	7,766	1.8	...
Influenza and pneumonia 470–474,480–486	7,269	1.7	8	29,287	6.7	5
Bronchitis, emphysema, and asthma 490–493	5,243	1.2	9	11,774	2.7	10
Homicide E960–E978	3,696	0.9	10	3,737	0.9	...
Arteriosclerosis 440	1,212	0.3	...	15,115	3.5	8
Septicemia 038	1,470	0.3	...	11,875	2.7	9
65 years and over						
All causes	1,273,882	100.0	...	1,273,882	100.0	...
Diseases of heart 390–398,402,404,410–429	560,983	44.0	1	770,208	60.5	1
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues 140–209	241,142	18.9	2	285,621	22.4	2
Cerebrovascular diseases 430–438	149,695	11.8	3	245,430	19.3	3
Influenza and pneumonia 470–474,480–486	46,487	3.6	4	145,050	11.4	5
Arteriosclerosis 440	27,670	2.2	5	171,279	13.4	4
Diabetes mellitus 250	24,372	1.9	6	99,518	7.8	6
Accidents E800–E949	24,135	1.9	7	62,766	4.9	7
Motor vehicle accidents E810–E823	5,905	0.5	...	6,383	0.5	...
All other accidents E800–E807,E825–E949	18,230	1.4	...	56,459	4.4	...
Bronchitis, emphysema, and asthma 490–493	15,912	1.2	8	41,462	3.3	8
Cirrhosis of liver 571	8,738	0.7	9	14,910	1.2	...
Nephritis and nephrosis 580–584	6,158	0.5	10	20,021	1.6	...
Septicemia 038	4,687	0.4	...	32,709	2.6	9
Avitaminoses and other nutritional deficiencies 260–269	2,366	0.2	...	24,011	1.9	10

Table 7. Nature of injuries reported for deaths from accidents, poisonings, and violence, by age and sex: United States, 1978

[Refers only to resident deaths occurring within the United States. Excludes fetal deaths]

Sex, nature of injury, and category number of the Eighth Revision International Classification of Diseases, Adapted, 1965			Age											Not stated
			All ages	Under 1 year	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over
Both sexes														
Accidents, poisonings, and violence (Nature of Injury)	N800-N999	210,942	2,168	4,349	7,153	38,510	28,723	18,700	19,737	22,812	25,176	25,333	18,035	246
Fractures, dislocations, and sprains and strains of joints and adjacent muscles	N800-N848	49,420	201	600	1,448	7,933	4,452	2,575	2,604	3,081	4,835	10,089	11,577	25
Intracranial injury (excluding those with skull fracture)	N850-N854	49,797	396	1,123	2,261	13,733	8,743	5,321	5,029	4,756	4,076	3,049	1,246	64
Internal injury of chest, abdomen, and pelvis	N860-N869	31,385	85	482	1,165	9,400	6,473	3,784	3,302	2,813	2,138	1,338	379	26
Laceration and open wound	N870-N907	31,370	22	147	713	7,841	7,767	4,790	3,776	2,939	1,979	1,020	344	32
Superficial injury and contusion	N910-N929	2,145	20	64	106	430	265	164	168	175	217	318	217	1
Effects of foreign body, entering through orifice	N930-N939	12,172	494	322	275	696	643	746	1,200	1,772	2,280	2,360	1,381	3
Burn	N940-N949	6,550	137	510	398	901	808	614	699	732	766	661	314	10
Injury to nerves and spinal cord	N950-N959	2,700	5	33	115	647	500	281	269	312	261	201	73	3
Adverse effects of chemical substances and other adverse effects	N960-N999	95,619	1,170	2,461	3,672	16,368	12,719	8,453	9,820	12,439	13,683	10,286	4,407	141
Male														
Accidents, poisonings, and violence (Nature of Injury)	N800-N999	139,891	1,207	2,579	4,816	30,156	22,487	13,811	13,961	15,583	15,747	12,615	6,730	199
Fractures, dislocations, and sprains and strains of joints and adjacent muscles	N800-N848	26,997	99	346	1,001	6,053	3,506	1,981	1,929	2,049	2,604	3,877	3,532	20
Intracranial injury (excluding those with skull fracture)	N850-N854	37,654	215	657	1,506	10,811	7,039	4,108	3,916	3,653	2,981	1,999	714	55
Internal injury of chest, abdomen, and pelvis	N860-N869	24,005	45	286	786	7,473	5,229	2,979	2,543	2,085	1,470	854	233	22
Laceration and open wound	N870-N907	25,434	13	94	513	6,496	6,436	3,783	3,040	2,383	1,609	803	239	25
Superficial injury and contusion	N910-N929	1,344	12	33	63	321	191	117	118	126	119	154	89	1
Effects of foreign body, entering through orifice	N930-N939	7,473	281	192	154	497	452	498	808	1,195	1,450	1,279	665	2
Burn	N940-N949	4,323	76	289	239	654	607	465	519	498	462	352	154	8
Injury to nerves and spinal cord	N950-N959	2,042	3	17	81	491	398	217	213	249	197	126	47	3
Adverse effects of chemical substances and other adverse effects	N960-N999	63,162	657	1,495	2,501	12,667	9,592	5,912	6,393	7,984	8,361	5,498	1,990	112
Female														
Accidents, poisonings, and violence (Nature of Injury)	N800-N999	71,051	961	1,770	2,337	8,354	6,236	4,889	5,776	7,229	9,429	12,718	11,305	47
Fractures, dislocations, and sprains and strains of joints and adjacent muscles	N800-N848	22,423	102	254	447	1,880	946	594	675	1,032	2,231	6,212	8,045	5
Intracranial injury (excluding those with skull fracture)	N850-N854	12,143	181	466	755	2,922	1,704	1,213	1,113	1,103	1,095	1,050	532	9
Internal injury of chest, abdomen, and pelvis	N860-N869	7,380	40	196	379	1,927	1,244	805	759	728	668	484	146	4
Laceration and open wound	N870-N907	5,936	9	53	200	1,345	1,331	1,007	736	556	370	217	105	7
Superficial injury and contusion	N910-N929	801	8	31	43	109	74	47	50	49	98	164	128	-
Effects of foreign body, entering through orifice	N930-N939	4,699	213	130	121	199	191	248	392	577	830	1,081	716	1
Burn	N940-N949	2,227	61	221	159	247	201	149	180	234	304	309	160	2
Injury to nerves and spinal cord	N950-N959	658	2	16	34	156	102	64	56	63	64	75	26	-
Adverse effects of chemical substances and other adverse effects	N960-N999	32,457	513	966	1,171	3,701	3,127	2,541	3,427	4,455	5,322	4,788	2,417	29

Technical notes

Nature and sources of data

Data shown in this publication are based on information from all death certificates from the 50 States and the District of Columbia. Mortality statistics are based on information obtained directly from copies of the original certificates received from the State registration offices and from precoded data provided to the National Center for Health Statistics (NCHS) by States through the Vital Statistics Cooperative Program.

Thirty-six States participated in the cooperative program in 1978. Seven of the participating States submitted all mortality data, including cause of death, precoded on computer tape. The remaining 29 States in the program submitted computer tapes with precoded demographic data, along with copies of the original certificates from which NCHS coded the cause of death. For the balance of States, which were not participants in the cooperative system in 1978, NCHS coded both the demographic and the medical data directly from copies of the original death certificates.

Data for the United States as a whole refer to events occurring to residents within the United States.

Cause-of-death classification

The mortality statistics presented here are compiled in accordance with the World Health Organization regulations, which specify that member nations classify causes of death in accordance with the current revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death. An adaptation of the Eighth Revision of the classification—*Eighth Revision International Classification of Diseases, Adapted for Use in the United States*—was used for the years 1968-78. Besides specifying the classification, the World Health Organization regulations outline the form of medical certification and the coding procedures to be used. Underlying cause-of-death data and reported cause-of-death data presented in this publication were coded by procedures outlined in *Vital Statistics Instruction Manuals* issued by NCHS, Part 2a, "Classifying the Underlying Cause of Death" and Part 2b, "Medical Classification of Death Records for Automated Classification of Medical Entities."

National coding of more than a single cause of death has been undertaken previously by NCHS and its predecessor agencies. The underlying cause and one associated cause were coded in 1917, 1925, 1936, and 1940. In 1955 up to five additional causes were coded. The multiple cause-of-death statistics in this publication are the first national multiple cause data to be published by the United States since publication of the 1955 data. These data are now being prepared routinely, using automated procedures, and are being made available annually.

Multiple cause-of-death data allow for the maximum use of medical information reported on the death certificate. The medical information reported on the death certificate depends on the certifying physician's evaluation of the part each condition played in the death and on the physician's desire and ability to report that evaluation on the death certificate. It is reasonable to assume that not all conditions present at death are reported on the death certificate and that the variation in reporting depends on a number of factors, including the nature of the conditions that brought about death. For example, if a person with diabetes dies in a motor vehicle accident, the certifying physician may not report Diabetes mellitus on the death certificate.

Population bases for computing rates

The population for computing rates shown in this publication represents the population residing in the specified area, as published by the U.S. Bureau of the Census in *Current Population Reports*, "Population Estimates and Projections," Series P-25, No. 917. These populations are revised estimates based on the 1980 Census enumeration.

Cause-of-death ranking

The cause-of-death rankings shown in this report are based on the List of 69 Selected Causes of Death. This list is adapted from one of the special lists for mortality tabulations recommended by the World Health Organization for use with the Eighth Revision International Classification of Diseases.

The cause-of-death categories introduced by NCHS during the period of the Eighth Revision are not included in the List of 69 Selected Causes and therefore are not ranked among the leading causes of death. These categories include Chronic obstructive lung disease without mention of asthma, bronchitis, or emphysema (ICDA No. *519.3²).

The group titles Major cardiovascular diseases and Symptoms and ill-defined conditions are not ranked from the List of 69 Selected Causes. Also, category titles that begin with the words "Other" or "All other" are not ranked to determine the leading causes of death. When one of the titles is ranked (for example, Tuberculosis, all forms), its components (in this case, Tuberculosis of respiratory system and Tuberculosis, other forms) are not ranked.

Nature of injury titles are not included in the List of 69 Selected Causes and are therefore not included in the leading causes based on reported causes.

²The asterisk before category number 519.3 indicates that the title to which this number corresponds was not included in ICDA but was introduced by the National Center for Health Statistics.

Symbols

- - - Data not available
 - . . . Category not applicable
 - Quantity zero
 - 0.0 Quantity more than zero but less than 0.05
 - Z Quantity more than zero but less than 500 where numbers are rounded to thousands
 - * Figure does not meet standards of reliability or precision
-

Suggested Citation

National Center for Health Statistics: Multiple causes of death in the United States. *Monthly Vital Statistics Report*. Vol. 32-No. 10, Supp. (2) DHHS Pub No. (PHS) 84-1120. Public Health Service, Hyattsville, Md., Feb. 17, 1984.

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HUMAN SERVICES
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