

Leading Causes of Death

The tables and charts in this report present final 1949 mortality data on leading causes of death for the first time. Previous release of final death rates for 1949 was limited to a selected list of 32 causes of death.

Meaning of Rank Order

One of the more popular ways of presenting causes of death is by rank order. It is often useful to know the first seven or ten leading causes, or that a leading cause of a generation ago has now dropped to a minor position. Rank order often lends itself to dramatizing a particular disease: "Fifty years ago cancer ranked eighth among the causes of death; now it is second only to diseases of the heart."

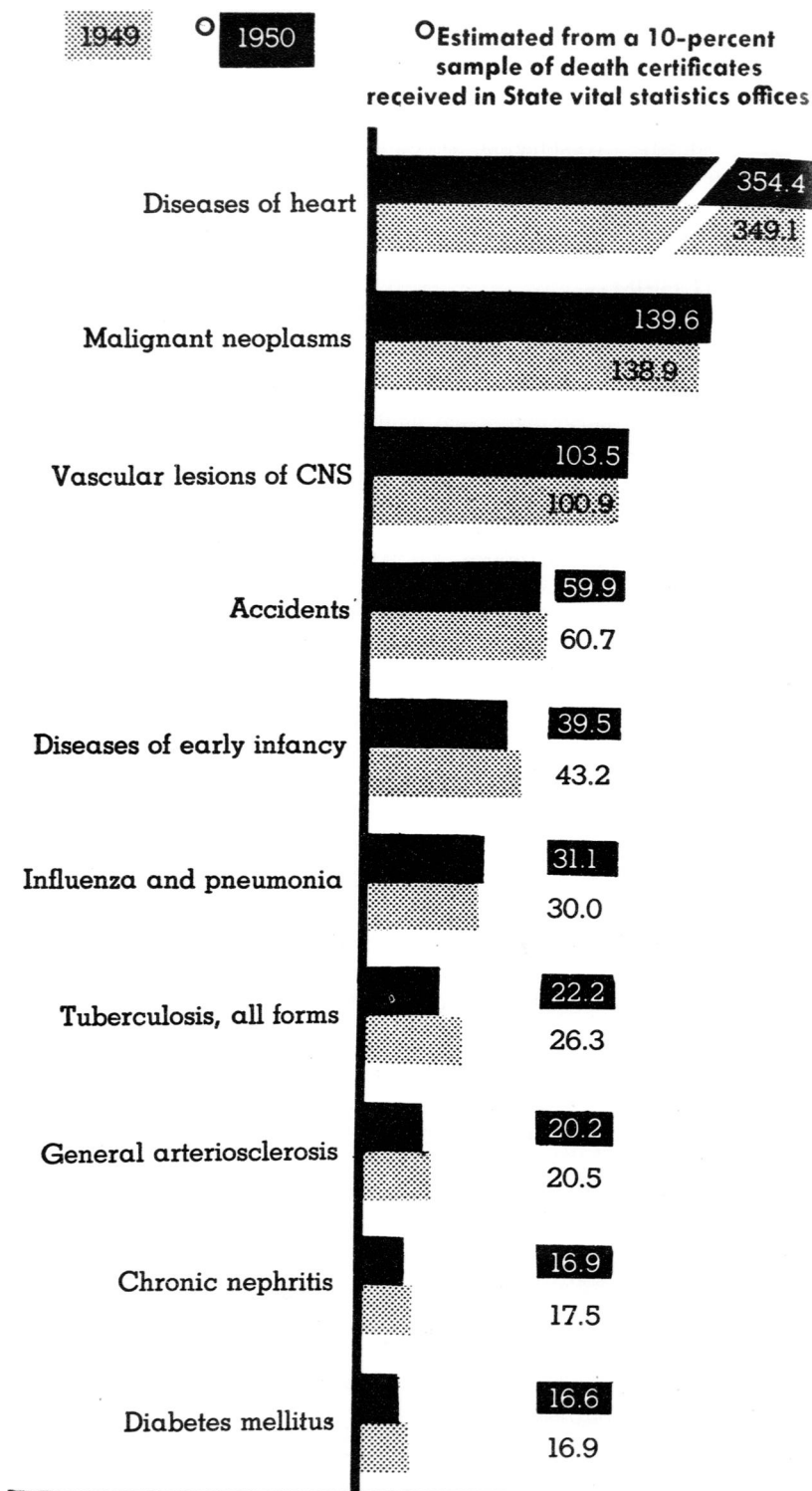
Those who use rank order should be aware of its pitfalls and limitations as well as its dramatic qualities. Rank ordering answers some questions but not others. For example, it does not adequately answer, "What are the most important public health problems?" There are of course many communicable diseases, now far down the list but potentially explosive, that have a public health importance far beyond their present low rank order.

The question that ranking answers best is, "What are the most frequent causes of death?" Even to this

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The National Office of Vital Statistics of the Public Health Service has prepared this section.

DEATH RATES: United States - per 100,000 population



(from preceding page)

White Male

Diseases of heart	426.4
Malignant neoplasms	146.0
Vascular lesions of CNS	97.6
Accidents	83.1
Diseases of early infancy	47.1
Influenza and pneumonia	30.8
Tuberculosis, all forms	28.6
General arteriosclerosis	21.8
Suicide	19.2
Chronic nephritis	17.0

White Female

Diseases of heart	283.5
Malignant neoplasms	140.2
Vascular lesions of CNS	100.0
Accidents	37.1
Diseases of early infancy	32.1
Influenza and pneumonia	23.0
Diabetes mellitus	21.2
General arteriosclerosis	20.9
Chronic nephritis	14.8
Tuberculosis, all forms	13.2

Nonwhite Male

Diseases of heart	327.6
Vascular lesions of CNS	113.4
Accidents	99.0
Malignant neoplasms	98.7
Tuberculosis, all forms	86.7
Diseases of early infancy	85.3
Influenza and pneumonia	64.0
Homicide	45.4
Chronic nephritis	31.6
Syphilis and sequelae	27.1

Nonwhite Female

Diseases of heart	273.6
Vascular lesions of CNS	122.6
Malignant neoplasms	105.3
Diseases of early infancy	62.9
Tuberculosis, all forms	58.8
Influenza and pneumonia	49.0
Accidents	35.2
Chronic nephritis	30.0
Diabetes mellitus	18.6
Hypertension (without mention of heart)	14.1

question the answers are not fool-proof but depend on the specific list of causes of death from which the selection was made. At best, choice of a list is arbitrary, and it will often determine the rank of a particular cause—or whether it appears at all, since much depends on the way in which the various causes may be combined into broader categories.

Because of the interest in causes of death by rank and to promote uniformity in presentations of this kind, the Public Health Conference on Records and Statistics has recommended a rank-ordering procedure based on the Sixth Revision of the International Lists of Diseases and Causes of Death. This presentation is based on the "64-cause list" (table 1), designed for use in the National Office of Vital Statistics, with certain categories not ranked. These are indicated in the rank-order column of table 1 by "..."

Effect of Aging

Fifty years ago the leading causes of death in the United States were influenza and pneumonia, tuberculosis, and the group including gastritis, duodenitis, enteritis, and colitis. In 1949, influenza and pneumonia were in sixth place, tuberculosis in seventh place, and the diseases in the gastritis group had dropped to fifteenth place (table 1). These changes of course reflect, among other factors, the progress that has been made in the control of contagious disease in general, through such means as improved environmental sanitation and, more recently, the use of antibiotics.

Half the deaths in the United States are now caused by the cardiovascular diseases, of which the major component is diseases of the heart, accounting for more than a third of all deaths. Diseases of the heart are the leading cause of death for the population as a whole (see chart). The other principal components, vascular lesions of the central nervous system (chiefly cerebral hemorrhage) and general arteriosclerosis, rank third and eighth, respectively.

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Table 1. Deaths, death rates, and rank order for 64 selected causes of death, United States, 1949

[Deaths exclusive of fetal deaths and of deaths among armed forces overseas. Rates per 100,000 estimated midyear population excluding armed forces overseas. Numbers after causes of death are category numbers of the Sixth Revision of the International Lists, 1948.]

Rank	Cause of death	Number	Rate
	All causes.....	1, 443, 607	971. 7
7	Tuberculosis, all forms.....001-019	39, 100	26. 3
...	Tuberculosis of respiratory system.....001-008	35, 988	24. 2
...	Tuberculosis, other forms.....010-019	3, 112	2. 1
17	Syphilis and its sequelae.....020-029	8, 581	5. 8
38	Typhoid fever.....040	161	0. 1
...	Cholera.....043	0	-----
32	Dysentery, all forms.....045-048	1, 440	1. 0
37	Scarlet fever and streptococcal sore throat.....050, 051	486	0. 3
36	Diphtheria.....055	574	0. 4
35	Whooping cough.....056	727	0. 5
34	Meningococcal infections.....057	917	0. 6
43	Plague.....058	1	0. 0
29	Acute poliomyelitis.....080	2, 720	1. 8
42	Smallpox.....084	2	0. 0
33	Measles.....085	949	0. 6
40	Typhus and other rickettsial diseases.....100-108	73	0. 0
39	Malaria.....110-117	118	0. 1
24	All other infective and parasitic diseases.....030-039, 041, 042, 044, 049, 052-054, 059-074, 081-083, 086-096, 120-138	3, 930	2. 6
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues.....140-205	206, 325	138. 9
...	Malignant neoplasm of buccal cavity and pharynx.....140-148	5, 074	3. 4
...	Malignant neoplasm of digestive organs and peritoneum.....150-156A, 157-159	82, 281	55. 4
...	Malignant neoplasm of respiratory system.....160-164	19, 518	13. 1
...	Malignant neoplasm of breast.....170	18, 553	12. 5
...	Malignant neoplasm of genital organs.....171-179	34, 545	23. 3
...	Malignant neoplasm of urinary organs.....180, 181	9, 859	6. 6
...	Malignant neoplasm of other and unspecified sites.....156B, 165, 190-199	21, 065	14. 2
...	Leukemia and aleukemia.....204	8, 102	5. 5
...	Lymphosarcoma and other neoplasms of lymphatic and hematopoietic tissues.....200-203, 205	7, 328	4. 9
22	Benign neoplasms and neoplasms of unspecified nature.....210-239	5, 861	3. 9
10	Diabetes mellitus.....260	25, 089	16. 9
23	Anemias.....290-293	4, 446	3. 0
31	Meningitis, except meningococcal and tuberculous.....340	2, 147	1. 4
...	Major cardiovascular-renal diseases.....330-334, 400-468, 592-594	746, 434	502. 5
...	Diseases of cardiovascular system.....330-334, 400-468	720, 499	485. 0
3	Vascular lesions affecting central nervous system.....330-334	149, 953	100. 9
30	Rheumatic fever.....400-402	2, 304	1. 6
1	Diseases of heart.....410-443	518, 568	349. 1
...	Chronic rheumatic heart disease.....410-416	20, 434	13. 8
...	Arteriosclerotic heart disease, including coronary disease.....420	299, 109	201. 3
...	Nonrheumatic chronic endocarditis and other myocardial degeneration.....421, 422	91, 401	61. 5
...	Other diseases of heart.....430-434	23, 816	16. 0
...	Hypertension with heart disease.....440-443	83, 808	56. 4
14	Hypertension without mention of heart.....444-447	12, 199	8. 2
8	General arteriosclerosis.....450	30, 426	20. 5
20	Other diseases of circulatory system.....451-468	7, 049	4. 7
9	Chronic and unspecified nephritis and other renal sclerosis.....592-594	25, 935	17. 5
6	Influenza and pneumonia, except pneumonia of newborn.....480-493	44, 640	30. 0
...	Influenza.....480-483	4, 602	3. 1
...	Pneumonia, except pneumonia of newborn.....490-493	40, 038	27. 0
27	Bronchitis.....500-502	3, 284	2. 2

**Table 1. Deaths, death rates, and rank order for 64 selected causes of death, United States, 1949—
Continued**

Rank	Cause of death	Number	Rate
19	Ulcer of stomach and duodenum.....540, 541	7, 809	5. 3
25	Appendicitis.....550-553	3, 744	2. 5
16	Hernia and intestinal obstruction.....560, 561, 570	9, 854	6. 6
15	Gastritis, duodenitis, enteritis, and colitis, except diarrhea of newborn...543, 571, 572	9, 970	6. 7
13	Cirrhosis of liver.....581	13, 694	9. 2
26	Acute nephritis and nephritis with edema, including nephrosis.....590, 591	3, 597	2. 4
21	Hyperplasia of prostate.....610	6, 860	4. 6
28	Deliveries and complications of pregnancy, childbirth, and the puerperium...640-689	3, 216	2. 2
...	Abortion.....650-652	394	0. 3
...	All other complications.....640-649, 660-689	2, 822	1. 9
11	Congenital malformations.....750-759	18, 864	12. 7
5	Certain diseases of early infancy.....760-776	64, 179	43. 2
...	Birth injuries, postnatal asphyxia, and atelectasis.....760-762	25, 553	17. 2
...	Infections of newborn.....763-768	4, 471	3. 0
...	Other diseases peculiar to early infancy, and immaturity unqualified...769-776	34, 155	23. 0
...	Symptoms, senility, and ill-defined conditions.....780-795	23, 520	15. 8
...	All other diseases.....Residual	65, 147	43. 9
4	Accidents.....E800-E962	90, 106	60. 7
...	Motor-vehicle accidents.....E810-E835	31, 701	21. 3
...	All other accidents.....E800-E802, E840-E962	58, 405	39. 3
12	Suicide.....E963, E970-E979	16, 993	11. 4
18	Homicide.....E964, E980-E985	8, 033	5. 4
41	Injury resulting from operations of war.....E965, E990-E999	16	0. 0

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For the most part, the leading causes of death have changed because fewer deaths from infectious diseases are occurring in the early and middle years. Consequently, a larger proportion of the population now survives to the older years in which cardiovascular diseases and cancer occur most frequently.

The chart also shows rank order and estimated death rates for the same 10 leading causes in 1950. A major change was in the tuberculosis death rate, which dropped 16 percent, for an estimated decrease of 5,470 deaths. According to estimates for the first 8 months of 1951, this decline has continued.

Death rates for influenza and pneumonia for 1950 and 1951 increased slightly over 1949, probably as a result of the influenza epidemic during the late winter and early spring months. Rates for diseases of the heart and malignant neo-

plasms also increased in 1951 over 1950, though probably by no more than would be expected with aging of the population.

The four sub-charts reveal significant differences in the leading causes of death for white and nonwhite males and females. For perspective in interpreting the figures, the totals for all causes may be helpful.

All causes, 1949

Group	Deaths	Death rates per 1,000
White male.....	726, 169	11. 0
White female.....	542, 679	8. 1
Nonwhite male..	95, 122	12. 4
Nonwhite female..	79, 637	9. 9

Death rates for tuberculosis and vascular lesions of the central nervous system are considerably higher for the nonwhite groups than for the white. The rates for malignant neoplasms appear to be considerably lower; at least part of this difference is probably due to inadequate diagnosis.

Syphilis and sequelae are among the ten leading causes of death only for nonwhite males. For all four groups the rank and death rate for this cause are as follows:

Syphilis and sequelae, 1949

Group	Death rate per 100,000	Rank
White male.....	6. 4	18
White female.....	2. 0	21
Nonwhite male....	27. 1	10
Nonwhite female..	11. 7	12

Diabetes mellitus is among the ten leading causes for females but not for males:

Diabetes mellitus, 1949

Group	Death rate	Rank
White male.....	13. 2	12
White female.....	21. 2	7
Nonwhite male.....	9. 3	16
Nonwhite female....	18. 6	9

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Table 2. Leading causes of death, by age, United States, 1949

[Deaths exclusive of fetal deaths and of deaths among armed forces overseas. Rates per 100,000 estimated mid-year population in each specified group, excluding armed forces overseas. For complete titles and category numbers of causes of death see table 1.]

Rank	Cause of death and age	Number	Rate
ALL AGES			
	All causes.....	1, 443, 607	971. 7
1	Diseases of heart.....	518, 568	349. 1
2	Malignant neoplasms.....	206, 325	138. 9
3	Vascular lesions of central nervous system.....	149, 953	100. 9
4	Accidents.....	90, 106	60. 7
5	Diseases of early infancy.....	64, 179	43. 2
6	Influenza and pneumonia.....	44, 640	30. 0
7	Tuberculosis, all forms.....	39, 100	26. 3
8	General arteriosclerosis.....	30, 426	20. 5
9	Chronic nephritis.....	25, 935	17. 5
10	Diabetes mellitus.....	25, 089	16. 9
	All other causes.....	249, 286	167. 8
1-4 YEARS			
	All causes.....	18, 687	149. 1
1	Accidents.....	4, 739	37. 8
2	Influenza and pneumonia.....	2, 457	19. 6
3	Congenital malformations.....	1, 513	12. 1
4	Malignant neoplasms.....	1, 368	10. 9
5	Tuberculosis, all forms.....	831	6. 6
6	Gastritis, duodenitis, enteritis, and colitis.....	810	6. 5
7	Meningitis.....	414	3. 3
8	Other infective and parasitic diseases.....	364	2. 9
9	Measles.....	356	2. 8
10	Acute poliomyelitis.....	341	2. 7
	All other causes.....	5, 494	43. 8

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Suicide is a leading cause of death only among white males and is rare for nonwhite females:

Suicide, 1949		
Group	Death rate	Rank
White male.....	19. 2	9
White female.....	5. 5	16
Nonwhite male.....	7. 0	19
Nonwhite female.....	1. 5	29

The data indicate that nonwhite males run a far greater risk of homicides:

Homicide, 1949		
Group	Death rate	Rank
White male.....	4. 1	21
White female.....	1. 4	28
Nonwhite male.....	45. 4	8
Nonwhite female.....	11. 3	15

In table 2 the causes of death are ranked for each age group. Among other things this table emphasizes a point frequently made by statisticians—that rank order of a cause of death should not be presented without the death rate, since even the most “important” causes of death in certain age groups are quite small in comparison with lesser causes in other age groups. Thus for the age group 5–14, the leading cause of death (accidents) is considerably less frequent than the 10th cause of death (tuberculosis) in the age group 65 years and over.

Infant Deaths

The age groups in table 2 exclude infants, because causes of infant deaths are quite different and must be drawn from a separate list. In the first 4 weeks of life, the neonatal period, the leading causes of death are immaturity, postnatal asphyxia

and atelectasis, birth injuries, and congenital malformations, in the order named. Neonatal deaths account for about two-thirds of all infant deaths. The neonatal death rate in 1949, per 1,000 live births, is 21.4 compared to a total infant death rate of 31.3.

After the first 4 weeks, until the end of the first year, congenital malformations continue as one of the leading causes of death, while influenza and pneumonia become the leading cause. The gastritis group becomes increasingly important after the neonatal period. Accidents also first appear as a major cause of death after the first 4 weeks and hold a leading place throughout childhood, youth, and young adulthood. Although the death rates for influenza and pneumonia and accidents increase with advancing age, their rank decreases as the rates for other causes increase at a faster pace.

Table 2. Leading causes of death by age, United States, 1949 —Continued

Rank	Cause of death and age	Number	Rate
5-14 YEARS			
	All causes.....	15,717	63.9
1	Accidents.....	5,539	22.5
2	Malignant neoplasms.....	1,494	6.1
3	Acute poliomyelitis.....	941	3.8
4	Influenza and pneumonia.....	766	3.1
5	Rheumatic fever.....	582	2.4
6	Congenital malformations.....	572	2.3
7	Diseases of heart.....	556	2.3
8	Tuberculosis, all forms.....	471	1.9
9	Appendicitis.....	359	1.5
10	Other infective and parasitic diseases.....	282	1.1
	All other causes.....	4,155	16.9
15-24 YEARS			
	All causes.....	29,483	132.1
1	Accidents.....	11,522	51.6
2	Tuberculosis, all forms.....	3,347	15.0
3	Malignant neoplasms.....	1,965	8.8
4	Diseases of heart.....	1,579	7.1
5	Homicide.....	1,482	6.6
6	Suicide.....	1,015	4.5
7	Complications of pregnancy.....	939	4.2
8	Influenza and pneumonia.....	722	3.2
9	Chronic nephritis.....	607	2.7
10	Acute poliomyelitis.....	585	2.6
	All other causes.....	5,720	25.6
25-44 YEARS			
	All causes.....	121,704	276.1
1	Diseases of heart.....	22,902	52.0
2	Accidents.....	19,432	44.1
3	Malignant neoplasms.....	18,005	40.8
4	Tuberculosis, all forms.....	12,483	28.3
5	Suicide.....	5,257	11.9
6	Vascular lesions of central nervous system.....	5,105	11.6
7	Homicide.....	4,154	9.4
8	Influenza and pneumonia.....	2,969	6.7
9	Chronic nephritis.....	2,706	6.1
10	Cirrhosis of liver.....	2,489	5.6
	All other causes.....	26,202	59.4
45-64 YEARS			
	All causes.....	403,604	1,318.0
1	Diseases of heart.....	158,771	518.5
2	Malignant neoplasms.....	81,619	266.5
3	Vascular lesions of central nervous system.....	37,606	122.8
4	Accidents.....	18,302	59.8
5	Tuberculosis, all forms.....	14,237	46.5
6	Diabetes mellitus.....	8,410	27.5
7	Influenza and pneumonia.....	8,147	26.6
8	Chronic nephritis.....	7,342	24.0
9	Suicide.....	7,179	23.4
10	Cirrhosis of liver.....	6,978	22.8
	All other causes.....	55,013	179.7
65 YEARS AND OVER			
	All causes.....	741,393	6,578.5
1	Diseases of heart.....	333,992	2,963.5
2	Vascular lesions of central nervous system.....	106,371	943.8
3	Malignant neoplasms.....	101,443	900.1
4	General arteriosclerosis.....	28,316	251.3
5	Accidents.....	26,651	236.5
6	Influenza and pneumonia.....	20,372	180.8
7	Diabetes mellitus.....	14,883	132.1
8	Chronic nephritis.....	14,835	131.6
9	Hypertension without mention of heart.....	7,873	69.9
10	Tuberculosis, all forms.....	7,420	65.8
	All other causes.....	79,237	703.1