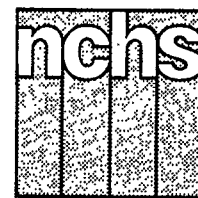


Monthly Vital Statistics Report



Provisional Data From the National Center for Health Statistics

Births, Marriages, Divorces, and Deaths for October 1991

Mortality Surveillance System

pages 5-7

Suicide:

25-44 years of age by sex
45-74 years of age by sex

Births

According to provisional reports, an estimated 355,000 births occurred in the United States during October 1991. This was a decrease of 2 percent from the provisional number of births reported for October 1990 (361,000). The birth rate, 16.4 live births per 1,000 population, was 3 percent lower than the rate for October 1990 (16.9). The fertility rate, 70.8 live births per 1,000 women 15-44 years, and the seasonally adjusted fertility rate (71.0) were both 2 percent lower than the comparable rates for October 1990 (72.2 and 72.1, respectively).

During the first 10 months of 1991, an estimated 3,444,000 births occurred, a decline of 1 percent from the 3,496,000 reported for the first 10 months of 1990. The January-October birth rate declined by 3 percent from 16.8 in 1990 to 16.3 in 1991. The fertility rate for this period (70.1) also was 2 percent lower than the comparable rate for January-October 1990 (71.5).

An estimated 4,127,000 live births occurred in the 12-month period ending with October 1991. This was a decrease of 1 percent compared with the 4,159,000 births reported for the

Provisional Vital Statistics for the United States

[Rates for infant deaths are infant mortality rates per 1,000 live births; all other rates per 1,000 population. Data are subject to monthly reporting variation; see Technical notes]

Item	October				January-October				12 months ending with October			
	Number		Rate		Number		Rate		Number		Rate	
	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990	1991	1990
Live births	355,000	361,000	16.4	16.9	3,444,000	3,496,000	16.3	16.8	4,127,000	4,159,000	16.3	16.6
Deaths	180,000	178,000	8.3	8.3	1,797,000	1,808,000	8.5	8.7	2,153,000	2,174,000	8.5	8.7
Natural increase	175,000	183,000	8.1	8.6	1,647,000	1,688,000	7.8	8.1	1,974,000	1,985,000	7.8	7.9
Marriages	220,000	219,000	10.2	10.3	2,008,000	2,066,000	9.5	9.9	2,390,000	2,462,000	9.4	9.8
Divorces	98,000	92,000	4.6	4.3	995,000	981,000	4.7	4.7	1,189,000	1,185,000	4.7	4.7
Infant deaths	3,000	3,100	8.3	8.6	30,600	31,900	8.9	9.2	36,800	38,400	8.9	9.2

NOTE: Figures include all revisions received from the States. Cumulative figures for the current year reflect revisions received for previous months, and figures for earlier years may differ from those previously published.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Centers for Disease Control

National Center for Health Statistics

Manning Feinleib, M.D., Dr. P.H., Director

CDC
CENTERS FOR DISEASE CONTROL

12 months ending with October 1990. The birth rate of 16.3 was 2 percent lower than the rate of 16.6 for the preceding 12-month period. The fertility rate for the most recent 12-month period was 70.0, a decline of 1 percent from the rate for the comparable period a year earlier (70.9). The 12-month rates, which had been increasing since mid-1987, have been generally decreasing since early 1991.

Natural increase

As a result of natural increase, the excess of births over deaths, an estimated 175,000 people, or 8.1 people per 1,000 population, were added to the population during October 1991.

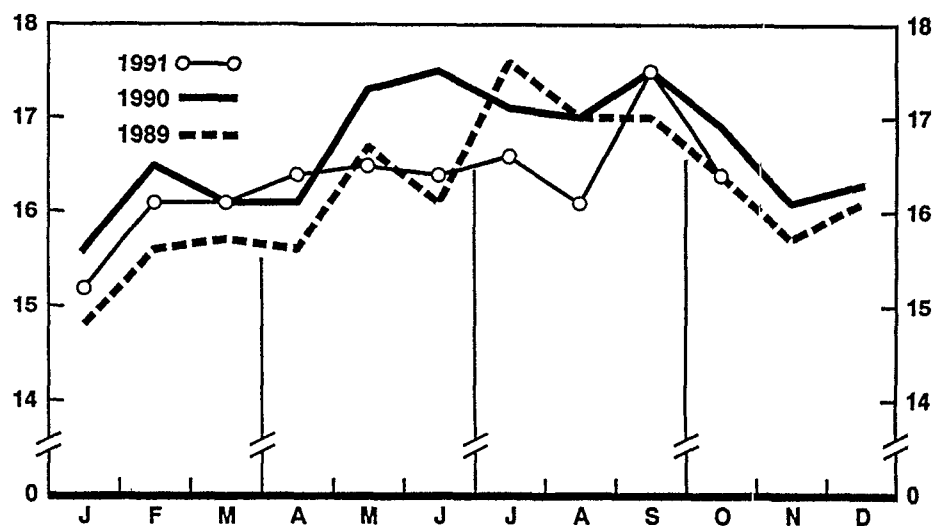
For the 12-month period ending with October 1991, 1,974,000 persons were added to the population. This represents a rate of natural increase of 7.8, 1 percent lower than the rate of 7.9 for the preceding 12-month period. Although both the 12-month birth and death rates declined by 2 percent, the decrease in the rate of natural increase is due to a larger absolute decrease in the birth rate than in the death rate.

Marriages

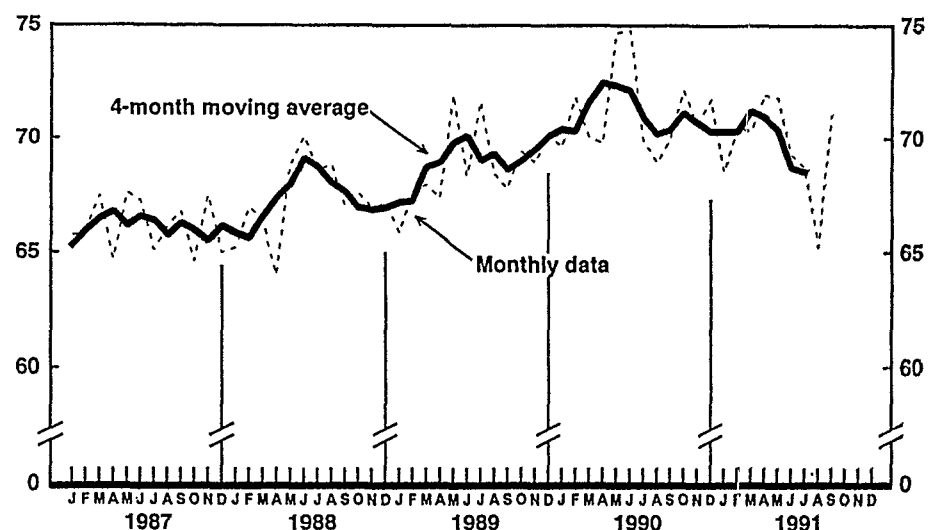
Marriages performed in October 1991 numbered 220,000, a slight increase over the number for October of the previous year (219,000). However, the marriage rate (per 1,000 population) for October was slightly lower in 1991 (10.2) than in 1990 (10.3).

For the first 10 months of 1991, the number of marriages totaled 2,008,000, a 3-percent decline from the comparable period in 1990 (2,066,000). The marriage rate for the 10-month period dropped 4 percent from 9.9 in 1990 to 9.5 in 1991.

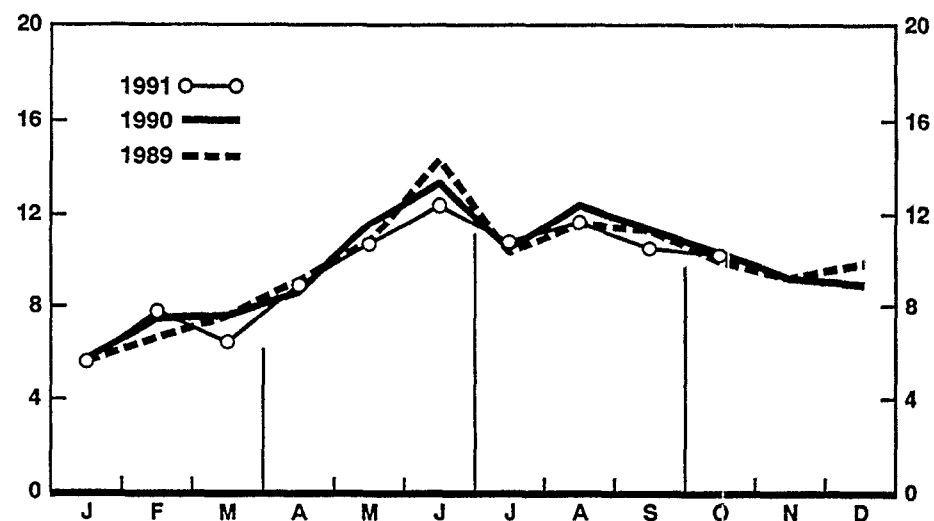
For the 12-month period ending with October 1991, the number of marriages (2,390,000) was 3 percent lower than for the same period in 1990 (2,462,000). The marriage rate was 9.4, a 4-percent decline from the rate for the 12 months ending with October 1990 (9.8).



Provisional birth rates per 1,000 population by month: United States, 1989-91



Provisional seasonally adjusted fertility rates per 1,000 women aged 15-44: United States, 1987-91



Provisional marriage rates per 1,000 population by month: United States, 1989-91

Divorces

Provisionally, divorces granted in October 1991 numbered 98,000, which was 6,000 more than in October 1990 (92,000). Likewise, the divorce rate (per 1,000 population) for October increased, from 4.3 in 1990 to 4.6 in 1991.

For the first 10 months of 1991, the number of divorces (995,000) increased slightly from the same period of the previous year (981,000) but the divorce rate remained steady at 4.7.

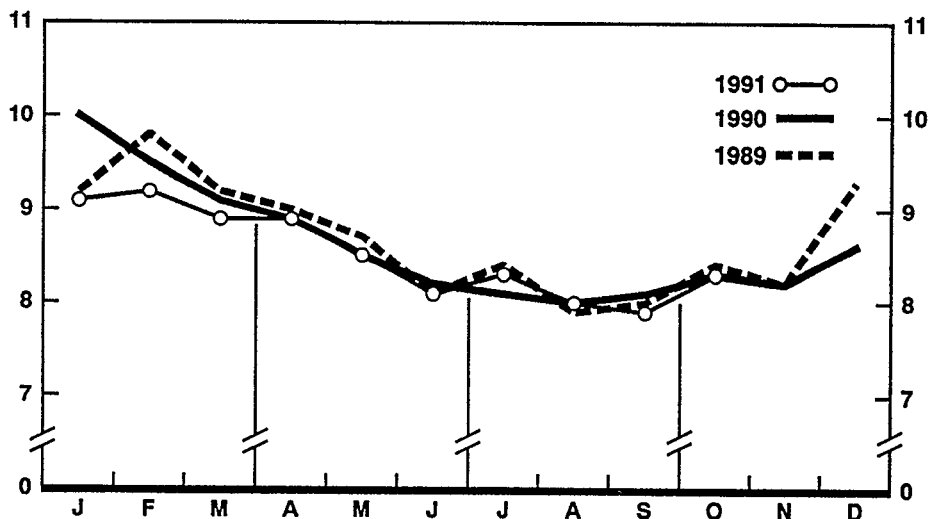
For the 12 months ending with October 1991, both the number of divorces and the divorce rate were virtually unchanged from the same period in 1990. The number of divorces increased by less than 1 percent, from 1,185,000 in 1990 to 1,189,000 in 1991, and the divorce rate was 4.7 for both years.

Deaths

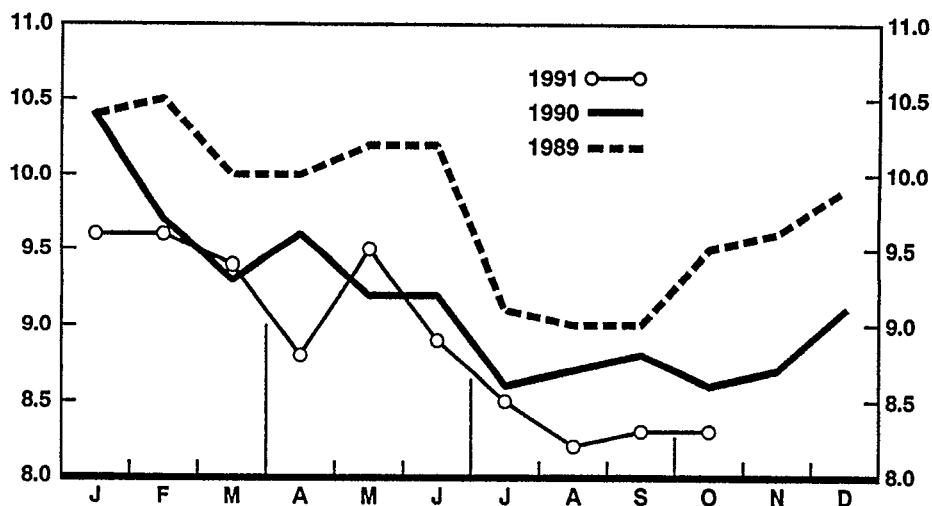
For October 1991 there were an estimated 180,000 deaths in the United States. The death rate was 8.3 deaths per 1,000 population, the same as the rate for October a year earlier. Among the 180,000 deaths for October 1991 were 3,000 deaths at ages under 1 year.

According to provisional statistics there were 1,797,000 deaths during the first 10 months of 1991, 1 percent less than estimated for January–October 1990 (1,808,000). The death rate, 8.5 per 1,000 population, was 2 percent lower than the January–October 1990 rate of 8.7. Among the 1,797,000 deaths for the first 10 months of 1991 were 30,600 deaths at ages under 1 year, yielding an infant mortality rate of 8.9 per 1,000 live births. This rate was 3 percent lower than the rate of 9.2 for the first 10 months of 1990.

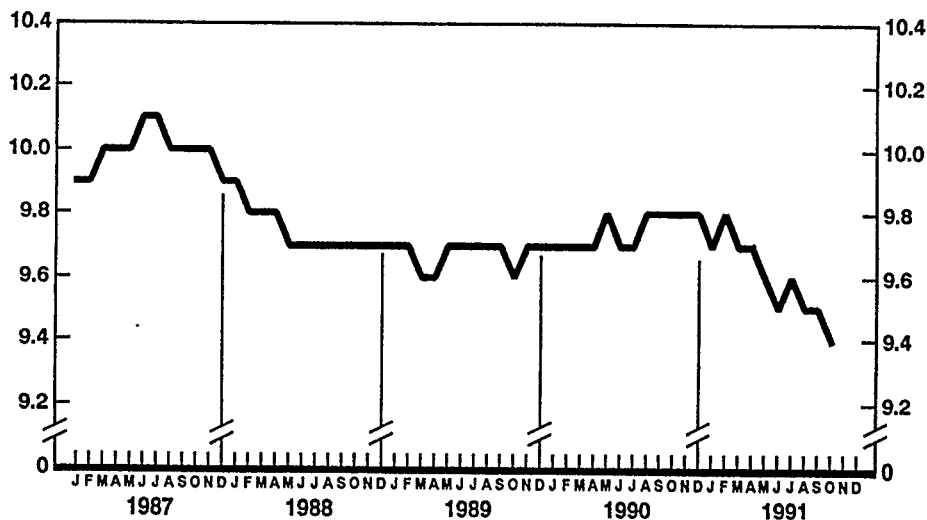
The death rate for the 12 months ending with October 1991 was 8.5 deaths per 1,000 population, 2 percent lower than the rate of 8.7 for the comparable 12-month period a year earlier. The infant mortality rate was 8.9 per 1,000 live births, 3 percent lower than the rate of 9.2 for the 12 months ending with October 1990.



Provisional death rates per 1,000 population by month: United States, 1989–91



Provisional infant mortality rates per 1,000 live births by month: United States, 1989–91

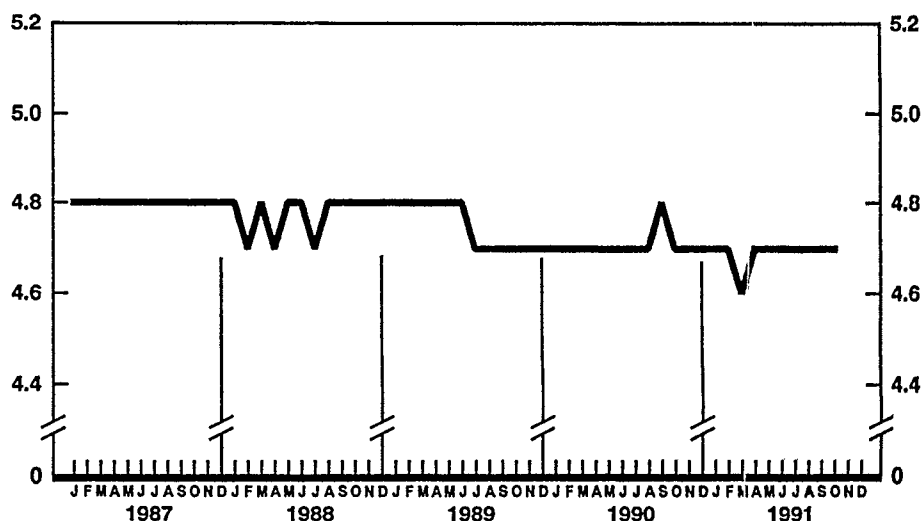


Provisional marriage rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1987–91

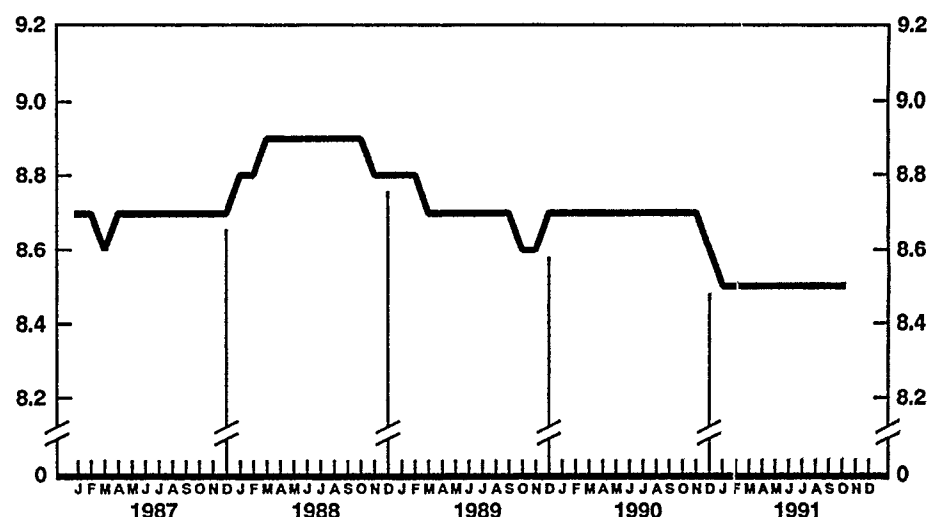
Current Mortality Sample, 12 months ending with September 1991—The provisional death rate for the 12 months ending with September 1991 was 850.3 deaths per 100,000 population, 2 percent lower than the rate of 868.9 for the 12-month period ending September 1990. Age-adjusted death rates control for changes and variations in the age composition of the population; therefore, they are better indicators than crude rates for showing changes in mortality risk over time and for showing differences between race-sex groups within the population. The provisional age-adjusted death rate for the 12-month period ending with September 1991 was 506.1 deaths per 100,000 population, 3 percent lower than the rate of 520.3 for the 12-month period ending with September 1990. Among the race-sex groups the estimated age-adjusted death rates decreased for white males, white females, and black females. By age, the death rate for the total population decreased for the following age groups: under 1 year, 45–54 years, 55–64 years, 65–74 years, 75–84 years, and 85 years and over.

Among the major causes of death, the estimated death rate increased between the two successive 12-month periods for Human immunodeficiency virus infection. The death rate decreased between the two successive 12-month periods for Diseases of heart, Cerebrovascular diseases, Accidents and adverse effects, Chronic obstructive pulmonary diseases and allied conditions, Pneumonia and influenza, Suicide, and Atherosclerosis.

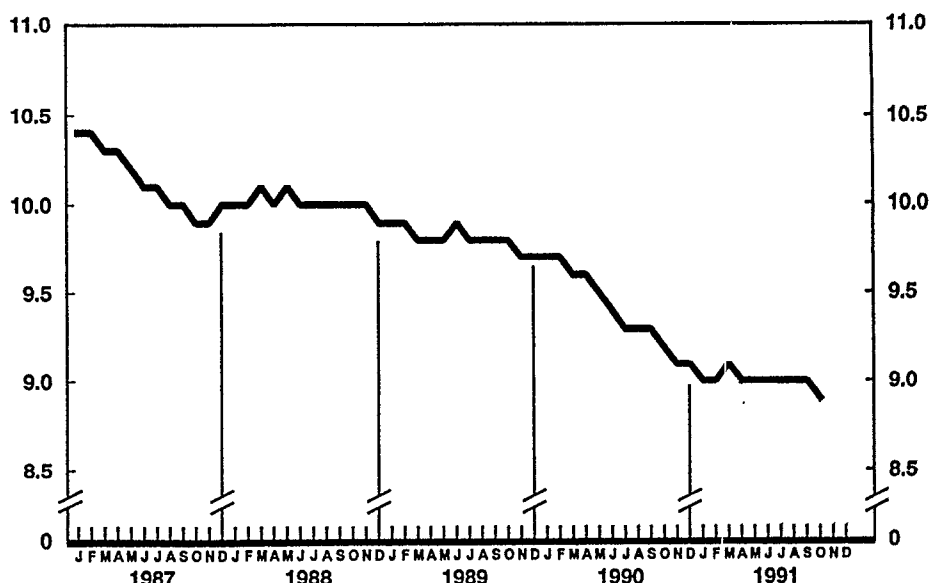
The infant mortality rate for the 12 months ending with September 1991 was 897.0 per 100,000 live births, 3 percent lower than the rate of 929.4 for the same 12-month period a year earlier. For infants under 28 days the 12-month rate ending September 1991 was 564.6 compared with a rate of 580.0 for the 12-month period a year earlier. The infant mortality rate for infants 28 days to 11 months was 332.3 compared with a rate of 350.6 for the 12-month period a year earlier. The changes in the mortality rates for infants under 28 days and for those 28 days to 11 months were not statistically significant. Among causes of infant



Provisional divorce rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1987–91



Provisional death rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1987–91



Provisional infant mortality rates per 1,000 live births for successive 12-month periods ending with month indicated: United States, 1987–91

death the infant mortality rate increased between the two successive 12-month periods for Disorders relating to short gestation and unspecified low birthweight. The infant mortality rate decreased for Sudden infant death syndrome.

Mortality Surveillance System

Discussed this month are recent trends in death rates for Suicide for men and women aged 25–44 and 45–74 years. In this issue, final mortality data are analyzed for data year 1989 and

provisional data from January 1982–May 1991.

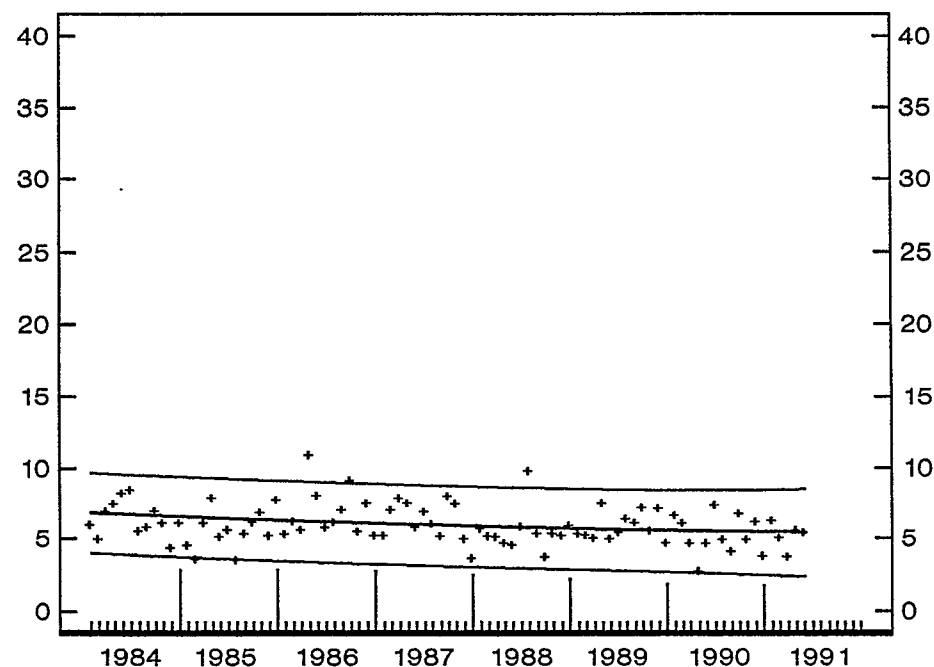
In 1989, the latest year for which final mortality data are available, Suicide accounted for 22,155 deaths, or 2 percent of deaths from all causes for persons aged 25–74 years. For males and females combined, for ages 25–44 and 45–74 years, Suicide was the fifth and the ninth leading cause of death, respectively.

Based on 1989 final data, the death rate for Suicide for men in the older age group, 45–74 years, was 1.1 times the rate for the younger men

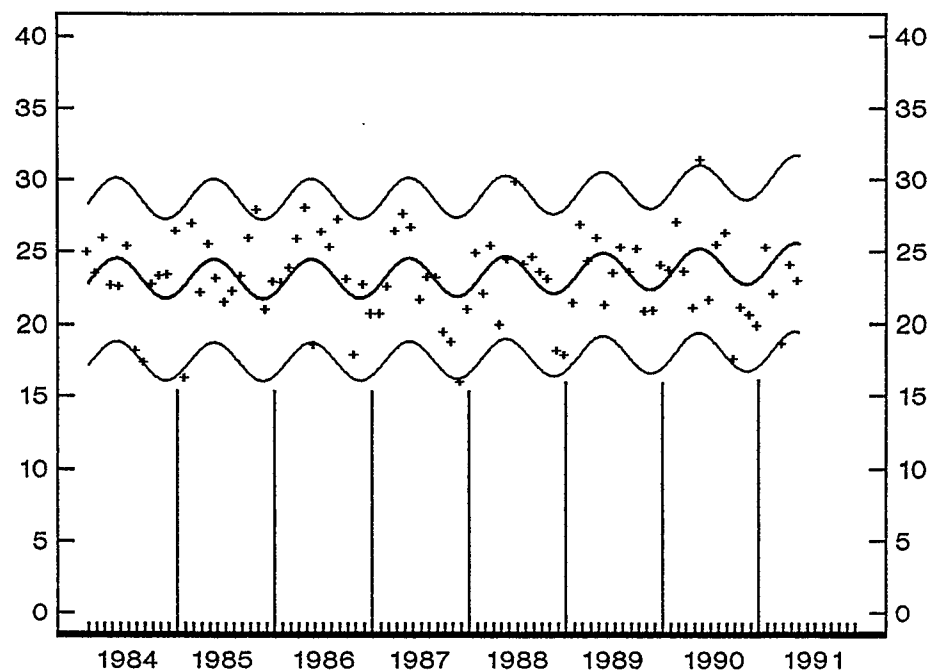
aged 25–44 years; similarly, the rate for women in the older age group was also 1.1 times the rate for the younger women. By contrast, the percent of all deaths from Suicide was substantially less for both men and women in the older age group compared with men and women in the younger age group. For both age groups the death rate for men was almost four times that for women. Trends in Suicide for these demographic groups based on provisional data are presented in the Mortality Surveillance System charts and accompanying text that follow.

Mortality Surveillance System Charts

[Observed and fitted provisional monthly death rates and 95-percent prediction intervals. Models fitted to provisional data for January 1982–May 1990; see Technical notes]



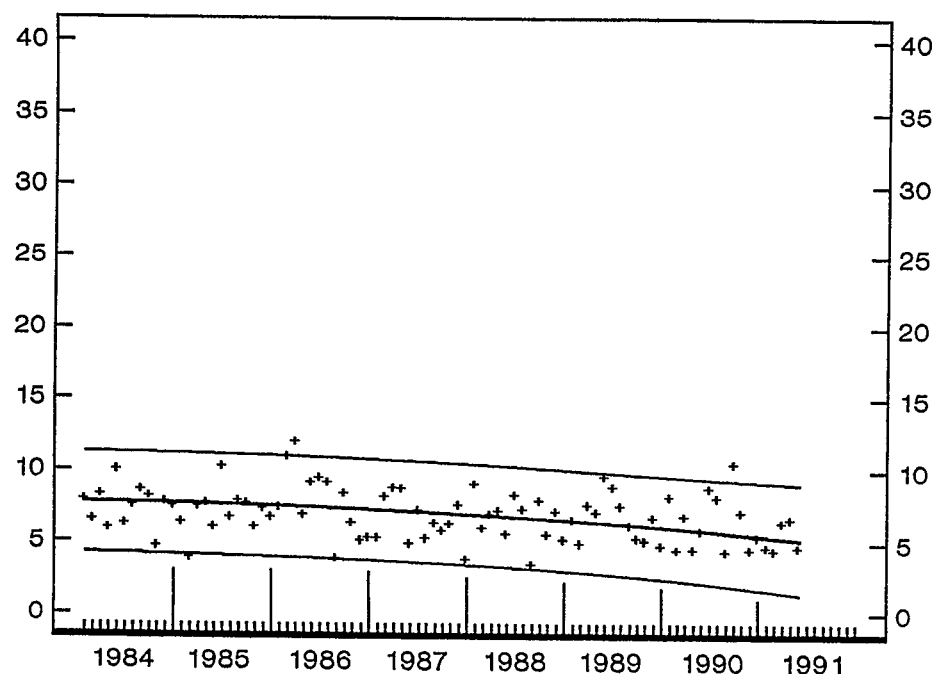
Provisional death rates per 100,000 females 25-44 years of age for Suicide, by month: United States, 1984-91



Provisional death rates per 100,000 males 25-44 years of age for Suicide, by month: United States, 1984-91

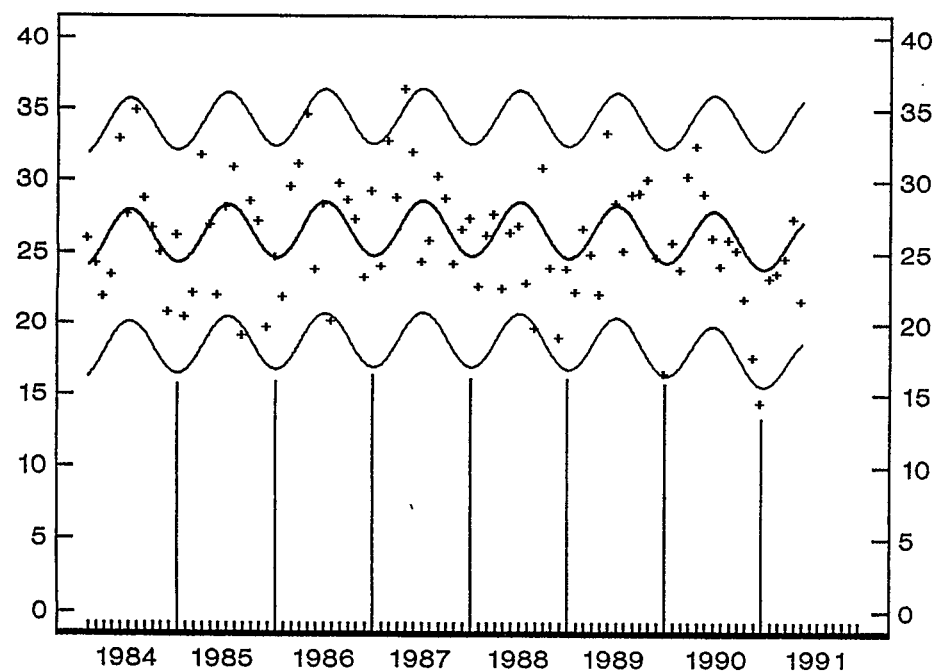
In 1989, the latest year for which final mortality data are available, Suicide was the fourth leading cause of death for women aged 25-44 years—after Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues (cancer), Accidents and adverse effects, and Diseases of heart—and accounted for 2,454 deaths, or 6 percent of all deaths. For the period shown in the chart through May 1990, provisional death rates for Suicide decreased for women aged 25-44 years. For the most recent 12-month period, June 1990–May 1991, the observed monthly rates fell within the 95-percent prediction intervals of a model estimated on the basis of provisional monthly death rates for January 1982–May 1990.

According to 1989 final data, Suicide was the fifth leading cause of death for men aged 25-44 years—after Accidents and adverse effects, Human immunodeficiency virus infection, Diseases of heart, and cancer—and accounted for 9,442 deaths, or 9 percent of all deaths for this age-sex group. For the period shown in the chart through May 1990, provisional death rates for this cause of death showed no discernible upward or downward trend for men in this age group. For the most recent 12-month period, June 1990–May 1991, the observed monthly rates, except for 1 month, were within the 95-percent prediction intervals of a model estimated on the basis of provisional monthly death rates for January 1982–May 1990. Provisional death rates for men in this age group showed a seasonal pattern of mortality with a tendency for rates to be higher in the spring.



Provisional death rates per 100,000 females 45-74 years of age for Suicide, by month: United States, 1984-91

In 1989, the latest year for which final data are available, Suicide was the 11th leading cause of death for women aged 45-74 years and accounted for 2,363 deaths, or 1 percent of all deaths for this age-sex group. Provisional death rates for this cause for women aged 45-74 years were stable from January 1982 to the mid-1980's and then decreased through May 1990. For the most recent 12-month period, June 1990-May 1991, the observed monthly rates, except for 1 month, were within the 95-percent prediction intervals of a model estimated on the basis of provisional monthly death rates for January 1982-May 1990.



Provisional death rates per 100,000 males 45-74 years of age for Suicide, by month: United States, 1984-91

According to 1989 final data, Suicide was the ninth leading cause of death for men aged 45-74 years and accounted for 7,896 deaths, or 2 percent of all deaths for this age-sex group. For these men, provisional death rates for Suicide increased from January 1982 to the late 1980's and, as shown in the chart, have decreased since then through May 1990. For the most recent 12-month period, June 1990-May 1991, 11 of the 12 observed monthly rates were below the predicted line, including 1 below the 95-percent prediction band of a model estimated on the basis of provisional monthly death rates for January 1982-May 1990. This suggests that the downward trend for the most recent 12-month period may be greater than expected. Provisional death rates for the older men also showed a seasonal pattern of mortality with a tendency for rates to be higher in the summer.

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 (see Technical notes)
-

Table 1. Provisional number of live births, marriages, deaths, infant deaths, and rates, by month: United States, January 1990–October 1991

[Data are provisional and are subject to monthly reporting variation; see Technical notes]

Period	Live births				Marriages		Deaths		Infant deaths	
	Number	Rate per 1,000 population	Rate per 1,000 women 15–44		Number	Rate per 1,000 population	Number	Rate per 1,000 population	Number	Rate per 1,000 live births
			Unadjusted	Seasonally adjusted ¹						
1990:										
January	330,000	15.6	66.4	69.6	121,000	5.7	213,000	10.0	3,500	10.4
February	316,000	16.5	70.2	71.8	143,000	7.5	182,000	9.5	3,100	9.7
March	342,000	16.1	68.7	70.1	161,000	7.6	193,000	9.1	3,200	9.3
April	330,000	16.1	68.5	69.8	177,000	8.6	182,000	8.9	3,200	9.6
May	368,000	17.3	73.9	74.7	247,000	11.6	180,000	8.5	3,300	9.2
June	361,000	17.5	74.7	74.8	274,000	13.3	169,000	8.2	3,200	9.2
July	364,000	17.1	72.9	69.9	224,000	10.5	173,000	8.1	3,100	8.6
August	362,000	17.0	72.6	68.9	264,000	12.4	170,000	8.0	3,100	8.7
September	362,000	17.5	74.8	70.0	236,000	11.4	168,000	8.1	3,100	8.8
October	361,000	16.9	72.2	72.1	219,000	10.3	178,000	8.3	3,100	8.6
November	333,000	16.1	68.8	70.6	190,000	9.2	169,000	8.2	3,000	8.7
December	350,000	16.3	70.0	71.7	191,000	8.9	185,000	8.6	3,200	9.1
1991:										
January	325,000	15.2	65.0	68.5	120,000	5.6	195,000	9.1	3,300	9.6
February	312,000	16.1	68.9	70.5	151,000	7.8	179,000	9.2	3,100	9.6
March	346,000	16.1	69.0	70.3	140,000	6.5	191,000	8.9	3,200	9.4
April	340,000	16.4	70.2	71.9	186,000	8.9	185,000	8.9	3,000	8.8
May	355,000	16.5	70.9	71.8	230,000	10.7	183,000	8.5	3,300	9.5
June	342,000	16.4	70.4	69.3	257,000	12.4	168,000	8.1	3,000	8.9
July	358,000	16.6	71.4	68.7	232,000	10.8	178,000	8.3	3,000	8.5
August	346,000	16.1	69.1	65.3	253,000	11.7	172,000	8.0	2,800	8.2
September	366,000	17.5	75.4	70.6	220,000	10.5	165,000	7.9	2,900	8.3
October	355,000	16.4	70.8	71.0	220,000	10.2	180,000	8.3	3,000	8.3

¹The method of seasonal adjustment, developed by the U.S. Bureau of the Census, is described in *The X-11 Variant of the Census Method II Seasonal Adjustment Program*, Technical Paper No. 15 (1967 revision).

NOTE: Figures include all revisions received from the States and, therefore, may differ from those previously published.

Table 4. Provisional number of deaths under 1 year and infant mortality rates: each division and State, 12 months ending with October 1990 and 1991

[Data are estimates by State of residence; see Technical notes. Infant mortality rates are deaths under 1 year per 1,000 live births in specified area]

Area	12 months ending with October			
	1991		1990	
	Number	Rate	Number	Rate
New England	1,986	16.9	1,531	7.4
Maine	102	6.3	114	6.4
New Hampshire	101	6.2	127	7.3
Vermont	47	6.0	55	6.6
Massachusetts	641	7.3	713	7.3
Rhode Island	95	6.5	109	7.3
Connecticut	---	---	413	8.1
Middle Atlantic	12,620	19.1	5,706	9.7
New York	---	---	2,856	9.6
New Jersey	1,042	8.9	1,113	9.1
Pennsylvania	1,578	9.3	1,737	10.2
East North Central	14,388	19.3	6,777	10.0
Ohio	1,516	9.5	1,577	9.5
Indiana	755	8.9	843	10.0
Illinois	---	---	2,057	10.5
Michigan	1,541	9.9	1,662	10.5
Wisconsin	576	8.0	638	8.7
West North Central	2,264	8.6	2,221	8.2
Minnesota	496	7.4	516	7.5
Iowa	278	7.7	349	9.2
Missouri	785	10.0	682	8.5
North Dakota	81	8.8	70	7.3
South Dakota	97	8.9	113	10.2
Nebraska	187	7.8	174	7.2
Kansas	340	8.9	317	8.0
South Atlantic	16,432	110.6	7,373	10.5
Delaware	138	12.1	115	10.2
Maryland	---	---	741	9.2
District of Columbia	177	16.9	202	18.3
Virginia	972	10.0	1,035	10.4
West Virginia	205	9.1	212	9.5
North Carolina	1,121	11.0	1,168	11.2
South Carolina	605	10.4	727	12.2
Georgia	1,387	12.5	1,250	11.2
Florida	1,827	9.4	1,923	9.5
East South Central	2,362	10.0	2,434	10.2
Kentucky	470	8.6	486	8.5
Tennessee	711	9.9	758	10.4
Alabama	679	10.5	651	10.1
Mississippi	502	11.5	539	12.3
West South Central	4,070	8.4	4,174	8.7
Arkansas	366	10.5	357	10.0
Louisiana	735	10.2	759	10.4
Oklahoma	474	9.9	470	10.0
Texas ²	2,495	7.6	2,588	8.0
Mountain	1,934	7.9	2,085	8.5
Montana	90	7.7	104	9.0
Idaho	152	8.8	142	8.6
Wyoming	52	7.5	56	8.2
Colorado	441	8.1	436	8.0
New Mexico	252	9.1	233	8.4
Arizona	562	8.2	643	9.2
Utah	222	6.2	285	7.9
Nevada	163	7.1	186	8.9
Pacific	11,118	17.5	6,070	8.0
Washington	567	7.7	631	7.7
Oregon	326	7.6	332	7.4
California ³	---	---	4,835	8.0
Alaska	97	8.5	124	10.7
Hawaii	128	6.4	148	7.3

¹Excludes figures for State shown below as not available.²Beginning with data for February 1991, figures include adjustments for varying length of reporting period, see Technical notes.³Figures for all years include adjustments for varying length of reporting period, see Technical notes.

Data for all years are provisional estimates by State of residence rather than by State of occurrence and, therefore, differ from those published previously.

NOTE: Figures include all revisions received from the States. Figures for the current year reflect revisions received for previous months, and figures for earlier years may differ from those previously published.

Table 5. Provisional number of deaths and death rates, by age, race, and sex, and age-adjusted death rates by race and sex: United States, September 1990 and 1991, cumulative figures 1990 and 1991, and 12 months ending with September 1990 and 1991—Con.

[Data are provisional, estimated from a 10-percent sample of deaths. Rates on an annual basis per 100,000 estimated population in specified group. Due to rounding of estimates, figures may not add to totals. For method of computation and information on standard errors of the estimates see Technical notes]

Age, race, and sex	September				January–September				12 months ending with September			
	1991		1990		1991		1990		1991		1990	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Black female												
All ages	9,580	698.3	8,890	658.5	90,080	725.8	88,410	723.8	118,140	712.8	118,580	727.2
Under 1 year					3,740	² 1,516.1	3,770	² 1,572.6	4,910	² 1,478.9	5,330	² 1,681.4
1–4 years	610	171.5	580	166.7	760	85.1	550	64.5	920	78.2	740	65.1
5–14 years					550	26.4	520	25.4	660	23.7	720	26.4
15–24 years	230	104.5	150	67.6	1,490	73.8	1,410	69.6	1,880	70.1	1,900	70.1
25–34 years	340	139.6	320	131.5	3,320	150.2	3,310	149.7	4,530	152.9	4,650	157.3
35–44 years	540	273.3	460	244.2	5,250	296.3	5,070	300.0	6,780	287.4	6,740	300.0
45–54 years	760	606.7	630	514.4	6,510	578.7	6,230	561.9	8,450	561.5	8,470	574.2
55–64 years	1,330	1,356.4	1,180	1,213.6	11,900	1,337.7	12,620	1,430.9	16,070	1,352.7	16,540	1,402.9
65–74 years	1,950	2,534.7	2,070	2,740.5	19,500	2,802.6	18,850	2,758.0	25,150	2,707.2	24,870	2,727.0
75–84 years	1,950	4,901.9	1,950	4,994.7	20,890	5,799.6	20,490	5,802.5	27,720	5,763.0	27,640	5,868.4
85 years and over	1,880	12,567.8	1,540	10,830.4	16,150	12,048.5	15,480	12,105.7	21,040	11,754.2	20,840	12,258.8
Not stated	10	...	20	...	20	...	120	...	30	...	160	...
Age-adjusted rate	...	538.2	...	509.0	...	557.3	...	559.9	...	547.5	...	562.3

¹ Includes races other than white and black.

² Death rates under 1 year (based on population estimates) differ from infant mortality rates (based on live births); see table 8 for infant mortality rates.

NOTE: Figures include all revisions received from the States. Cumulative and 12-month figures for the current year reflect revisions received for previous months, and figures for earlier years may differ from those previously published.

Table 6. Provisional number of deaths and death rates for 72 selected causes and Human immunodeficiency virus infection: United States, September 1990 and 1991, cumulative figures 1990 and 1991, and 12 months ending with September 1990 and 1991

[Data are provisional, estimated from a 10-percent sample of deaths. Rates on an annual basis per 100,000 estimated population. Due to rounding of estimates, figures may not add to totals. For method of computation and information on standard errors of the estimates see Technical notes. For explanation of the asterisk preceding cause-of-death codes see Technical notes]

Cause of death (Ninth Revision International Classification of Diseases, 1975)	September				January–September				12 months ending with September			
	1991		1990		1991		1990		1991		1990	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All causes	165,000	791.8	168,000	811.6	1,617,000	854.4	1,630,000	870.4	2,149,000	850.3	2,174,000	868.9
Shigellosis and amebiasis	—	*	—	*	20	*	—	*	20	*	—	*
Certain other intestinal infections	30	*	30	*	500	0.3	330	0.2	600	0.2	440	0.2
Tuberculosis	110	0.5	150	0.7	1,250	0.7	1,310	0.7	1,600	0.6	1,760	0.7
Tuberculosis of respiratory system	70	*	130	0.6	920	0.5	1,010	0.5	1,190	0.5	1,380	0.6
Other tuberculosis	40	*	20	*	320	0.2	300	0.2	410	0.2	380	0.2
Whooping cough	—	*	—	*	—	*	20	*	—	*	30	*
Streptococcal sore throat, scarlatina, and erysipelas	—	*	—	*	10	*	10	*	10	*	10	*
Meningococcal infection	10	*	20	*	210	0.1	100	*	290	0.1	160	0.1
Septicemia	1,310	6.3	1,630	7.9	14,240	7.5	14,950	8.0	19,020	7.5	19,930	8.0
Acute poliomyelitis	—	*	—	*	10	*	—	*	10	*	—	*
Measles	—	*	—	*	20	*	70	*	20	*	80	*
Viral hepatitis	160	0.8	120	0.6	1,480	0.8	1,270	0.7	1,870	0.7	1,740	0.7
Syphilis	20	*	—	*	100	*	70	*	140	0.1	130	0.1
All other infectious and parasitic diseases ¹	2,550	12.2	2,470	11.9	25,650	13.5	23,450	12.5	33,390	13.2	30,960	12.4
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues.	41,740	199.9	43,430	210.2	385,770	203.9	380,190	203.0	512,680	202.9	505,980	202.3
Malignant neoplasms of lip, oral cavity, and pharynx	570	2.7	700	3.4	5,650	3.0	6,030	3.2	7,480	3.0	8,050	3.2
Malignant neoplasms of digestive organs and peritoneum	9,650	46.2	10,640	51.5	89,830	47.5	90,180	48.1	120,880	47.8	120,970	48.4
Malignant neoplasms of respiratory and intrathoracic organs	12,140	58.1	11,990	58.0	110,170	58.2	107,880	57.6	145,960	57.8	142,780	57.1
Malignant neoplasm of breast	3,360	16.1	3,550	17.2	33,570	17.7	33,610	17.9	45,000	17.8	44,490	17.8
Malignant neoplasms of genital organs	4,870	23.3	4,860	23.5	44,460	23.5	43,440	23.2	58,980	23.3	57,030	22.8
Malignant neoplasms of urinary organs	1,620	7.8	1,660	8.0	15,870	8.4	15,170	8.1	21,040	8.3	20,340	8.1
Malignant neoplasms of all other and unspecified sites	5,380	25.8	5,270	25.5	48,250	25.5	47,310	25.2	63,300	25.0	63,840	25.5
Leukemia	1,520	7.3	1,850	9.0	14,620	7.7	14,060	7.5	19,220	7.6	18,670	7.5
Other malignant neoplasms of lymphatic and hematopoietic tissues	2,630	12.6	2,910	14.1	23,340	12.3	22,520	12.0	30,810	12.2	29,820	11.9
Benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior and of unspecified nature	660	3.2	620	3.0	5,900	3.1	6,020	3.2	7,710	3.1	7,900	3.2
Diabetes mellitus	3,760	18.0	3,400	16.4	37,060	19.6	35,310	18.9	49,520	19.6	47,220	18.9
Nutritional deficiencies	260	1.2	200	1.0	2,300	1.2	2,320	1.2	3,050	1.2	3,130	1.3
Anemias	340	1.6	340	1.6	2,960	1.6	3,150	1.7	4,020	1.6	4,200	1.7
Meningitis	20	*	60	*	530	0.3	900	0.5	780	0.3	1,110	0.4
Major cardiovascular diseases	67,890	325.2	68,990	334.0	678,710	358.7	691,240	369.1	906,230	358.6	926,260	370.3
Diseases of heart	52,970	253.7	54,120	262.0	534,480	282.5	545,360	291.2	713,010	282.2	729,810	291.7
Rheumatic fever and rheumatic heart disease	460	2.2	410	2.0	4,690	2.5	4,690	2.5	6,290	2.5	6,240	2.5
Hypertensive heart disease	1,590	7.6	1,560	7.5	16,100	8.5	16,070	8.6	21,170	8.4	21,210	8.5
Hypertensive heart and renal disease	110	0.5	180	0.9	1,570	0.8	1,340	0.7	2,070	0.8	2,020	0.8
Ischemic heart disease	35,230	168.8	36,690	177.6	356,820	188.6	368,430	196.7	477,360	188.9	494,860	197.8
Acute myocardial infarction	17,860	85.6	18,380	89.0	173,900	91.9	182,780	97.6	233,070	92.2	246,310	98.5
Other acute and subacute forms of ischemic heart disease	250	1.2	210	1.0	2,230	1.2	2,490	1.3	3,060	1.2	3,390	1.4
Angina pectoris	70	*	80	*	690	0.4	600	0.3	830	0.3	740	0.3
Old myocardial infarction and other forms of chronic ischemic heart disease	17,050	81.7	18,020	87.2	180,000	95.1	182,550	97.5	240,400	95.1	244,420	97.7
Other diseases of endocardium	810	3.9	980	4.7	10,140	5.4	9,190	4.9	13,220	5.2	12,190	4.9
All other forms of heart disease	14,770	70.7	14,310	69.3	145,170	76.7	145,650	77.8	192,900	76.3	193,300	77.3
Hypertension with or without renal disease	510	2.4	660	3.2	6,300	3.3	6,220	3.3	8,690	3.4	8,280	3.3
Cerebrovascular diseases	11,030	52.8	10,880	52.7	106,720	56.4	108,440	57.9	142,470	56.4	145,640	58.2
Intracerebral and other intracranial hemorrhage	1,810	8.7	1,420	6.9	14,980	7.9	15,360	8.2	20,010	7.9	20,760	8.3
Cerebral thrombosis and unspecified occlusion of cerebral arteries	1,280	6.1	1,270	6.1	13,330	7.0	13,660	7.3	17,540	6.9	18,420	7.4
Cerebral embolism	40	*	60	*	530	0.3	450	0.2	740	0.3	680	0.3
All other and late effects of cerebrovascular diseases	7,900	37.8	8,130	39.3	77,880	41.1	78,980	42.2	104,180	41.2	105,780	42.3

Atherosclerosis	.440	1,330	6.4	1,280	6.2	12,750	6.7	13,530	7.2	16,910	6.7	18,230	7.3
Other diseases of arteries, arterioles, and capillaries	.441-448	2,060	9.9	2,050	9.9	18,450	9.7	17,690	9.4	25,150	10.0	24,290	9.7
Acute bronchitis and bronchiolitis	.466	30	*	30	*	430	0.2	480	0.2	500	0.2	590	0.2
Pneumonia and influenza	.480-487	4,910	23.5	4,740	22.9	56,450	29.8	60,670	32.4	74,480	29.5	79,180	31.7
Pneumonia	.480-486	4,890	23.4	4,730	22.9	55,910	29.5	58,830	31.4	73,830	29.2	77,120	30.8
Influenza	.487	20	*	10	*	550	0.3	1,840	1.0	640	0.3	2,060	0.8
Chronic obstructive pulmonary disease and allied conditions	.490-496	6,240	29.9	5,500	26.6	67,550	35.7	69,250	37.0	87,090	34.5	89,400	35.7
Bronchitis, chronic and unspecified	.490-491	310	1.5	170	0.8	2,880	1.5	2,400	1.3	3,590	1.4	3,290	1.3
Emphysema	.492	1,130	5.4	1,170	5.7	12,300	6.5	13,250	7.1	15,550	6.2	16,880	6.7
Asthma	.493	360	1.7	280	1.4	3,420	1.8	3,720	2.0	4,300	1.7	5,080	2.0
Other chronic obstructive pulmonary diseases and allied conditions	.494-496	4,440	21.3	3,890	18.8	48,960	25.9	49,890	26.6	63,640	25.2	64,150	25.6
Ulcer of stomach and duodenum	.531-533	490	2.3	460	2.2	4,670	2.5	4,470	2.4	6,040	2.4	6,230	2.5
Appendicitis	.540-543	10	*	50	*	380	0.2	310	0.2	500	0.2	440	0.2
Hernia of abdominal cavity and intestinal obstruction without mention of hernia	.550-553,560	560	2.7	510	2.5	4,370	2.3	4,220	2.2	5,730	2.3	5,480	2.2
Chronic liver disease and cirrhosis	.571	1,910	9.1	2,120	10.3	18,430	9.7	19,240	10.3	24,750	9.8	26,230	10.5
Cholelithiasis and other disorders of gallbladder	.574-575	250	1.2	240	1.2	2,340	1.2	2,170	1.2	3,190	1.3	2,860	1.1
Nephritis and nephrotic syndrome, and nephrosis	.580-589	1,620	7.8	1,710	8.3	16,630	8.8	16,000	8.5	22,060	8.7	21,870	8.7
Acute glomerulonephritis and nephrotic syndrome	.580-581	20	*	80	*	230	0.1	250	0.1	310	0.1	340	0.1
Chronic glomerulonephritis, nephritis and nephropathy, not specified as acute or chronic, and renal sclerosis, unspecified	.582-583,587	70	*	160	0.8	1,030	0.5	1,040	0.6	1,370	0.5	1,440	0.6
Renal failure, disorders resulting from impaired renal function, and small kidney of unknown cause	.584-586,588-589	1,530	7.3	1,470	7.1	15,370	8.1	14,720	7.8	20,370	8.1	20,080	8.0
Infections of kidney	.590	50	*	60	*	960	0.5	890	0.5	1,170	0.5	1,190	0.5
Hyperplasia of prostate	.600	-	*	30	*	280	0.1	240	0.1	340	0.1	350	0.1
Complications of pregnancy, childbirth, and the puerperium	.630-676	30	*	30	*	200	0.1	240	0.1	290	0.1	300	0.1
Pregnancy with abortive outcome	.630-638	10	*	20	*	60	*	70	*	70	*	70	*
Other complications of pregnancy, childbirth, and the puerperium	.640-676	20	*	10	*	140	0.1	170	0.1	220	0.1	230	0.1
Congenital anomalies	.740-759	900	4.3	1,050	5.1	8,990	4.8	9,970	5.3	12,310	4.9	12,890	5.2
Certain conditions originating in the perinatal period	.760-779	1,500	7.2	1,590	7.7	12,760	6.7	12,990	6.9	17,090	6.8	17,400	7.0
Birth trauma, intrauterine hypoxia, birth asphyxia, and respiratory distress syndrome	.767-769	240	1.1	300	1.4	2,610	1.4	2,540	1.4	3,570	1.4	3,520	1.4
Other conditions originating in the perinatal period	.760-766,770-779	1,260	6.0	1,290	6.2	10,150	5.4	10,450	5.6	13,520	5.4	13,880	5.5
Symptoms, signs, and ill-defined conditions	.780-799	2,880	13.8	2,650	12.8	25,420	13.4	27,310	14.6	33,960	13.4	37,830	15.1
All other diseases	.Residual	13,070	62.6	12,890	62.4	130,310	68.9	128,170	68.4	173,740	68.8	170,950	68.3
Accidents and adverse effects	.E800-E949	7,520	36.0	7,510	36.4	66,850	35.3	69,230	36.9	89,070	35.2	92,590	37.0
Motor vehicle accidents	.E810-E825	3,820	18.3	4,220	20.4	32,940	17.4	34,740	18.5	44,820	17.7	46,680	18.7
All other accidents and adverse effects	.E800-E807,E826-E949	3,700	17.7	3,290	15.9	33,900	17.9	34,490	18.4	44,250	17.5	45,910	18.4
Suicide	.E950-E959	2,150	10.3	2,490	12.0	22,130	11.7	23,240	12.4	28,540	11.3	30,290	12.1
Homicide and legal intervention	.E960-E978	2,240	10.7	2,460	11.9	19,520	10.3	18,890	10.1	25,180	10.0	24,570	9.8
All other external causes	.E980-E999	140	0.7	70	*	1,420	0.7	1,350	0.7	1,980	0.8	1,970	0.8
Human immunodeficiency virus infection ²	.*042-044	2,150	10.3	1,920	9.3	21,100	11.1	17,740	9.5	27,410	10.8	23,630	9.4

¹Includes data for deaths due to Human immunodeficiency virus infection (category numbers *042-044) shown separately below; see Technical notes.

²Included in All other infectious and parasitic diseases shown above.

NOTE: Figures include all revisions received from the States. Cumulative and 12-month figures for the current year reflect revisions received for previous months, and figures for earlier years may differ from those previously published.

Table 7. Provisional number of deaths and death rates for 16 selected subcategories of Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues: United States, September 1990 and 1991, cumulative figures 1990 and 1991, and 12 months ending with September 1990 and 1991

[Data are provisional, estimated from a 10-percent sample of deaths. Rates on an annual basis per 100,000 estimated population. Due to rounding of estimates, figures may not add to totals. For method of computation and information on standard errors of the estimates see Technical notes]

Cause of death (Ninth Revision International Classification of Diseases, 1975)	September				January–September				12 months ending with September			
	1991		1990		1991		1990		1991		1990	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues ¹140–208	41,740	199.9	43,430	210.2	385,770	203.9	380,190	203.0	512,680	202.9	505,980	202.3
Malignant neoplasm of esophagus150	780	3.7	960	4.6	7,670	4.0	7,400	3.9	9,960	3.9	9,710	3.9
Malignant neoplasm of stomach151	1,290	6.2	1,110	5.4	10,820	5.7	10,780	5.8	14,530	5.7	14,790	5.9
Malignant neoplasms of colon, rectum, rectosigmoid junction, and anus153,154	4,490	21.5	4,930	23.9	41,220	21.8	42,810	22.9	55,510	22.0	57,440	23.0
Malignant neoplasm of pancreas157	1,890	9.1	2,320	11.2	19,260	10.2	17,880	9.5	25,950	10.3	24,140	9.6
Malignant neoplasms of trachea, bronchus, and lung162	11,690	56.0	11,550	55.9	106,320	56.2	104,060	55.6	140,890	55.8	137,640	55.0
Malignant melanoma of skin172	490	2.3	580	2.8	5,370	2.8	4,810	2.6	6,770	2.7	6,430	2.6
Malignant neoplasm of cervix uteri180	360	1.7	410	2.0	3,550	1.9	3,780	2.0	4,800	1.9	4,790	1.9
Malignant neoplasms of body of uterus and of uterus, part unspecified179,182	410	2.0	490	2.4	4,340	2.3	4,420	2.3	5,790	2.3	5,820	2.3
Malignant neoplasm of ovary183.0	1,180	5.6	1,000	4.8	9,870	5.2	9,230	4.9	12,830	5.1	12,140	4.9
Malignant neoplasm of prostate185	2,760	13.2	2,780	13.5	25,280	13.3	24,530	13.1	33,870	13.4	32,400	13.0
Malignant neoplasm of bladder188	790	3.8	780	3.8	7,770	4.1	7,460	4.0	10,470	4.1	9,990	4.0
Malignant neoplasms of kidney and other and unspecified urinary organs189	820	3.9	880	4.3	8,090	4.3	7,710	4.1	10,560	4.2	10,350	4.1
Malignant neoplasms of brain and other and unspecified parts of nervous system191,192	970	4.6	930	4.5	8,410	4.4	8,660	4.6	11,000	4.4	11,400	4.6
Hodgkin's disease201	170	0.8	190	0.9	1,230	0.6	1,250	0.7	1,620	0.6	1,700	0.7
Malignant lymphoma other than Hodgkin's disease200,202	1,660	7.9	1,740	8.4	15,150	8.0	14,160	7.6	20,020	7.9	18,940	7.6
Multiple myeloma and other immunoproliferative neoplasms203	800	3.8	980	4.7	6,960	3.7	7,110	3.8	9,170	3.6	9,180	3.7

¹Includes figures for subcategories not shown below.

NOTE: Figures include all revisions received from the States. Cumulative and 12-month figures for the current year reflect revisions received for previous months, and figures for earlier years may differ from those previously published.

Table 8. Provisional number of deaths under 1 year and infant mortality rates, by age and for 10 selected causes: United States, September 1990 and 1991, cumulative figures 1990 and 1991, and 12 months ending with September 1990 and 1991

[Data are provisional, estimated from a 10-percent sample of deaths. Rates on an annual basis per 100,000 live births. Due to rounding of estimates, figures may not add to totals. For method of computation and information on standard errors of the estimates see Technical notes]

Age and cause of death (Ninth Revision International Classification of Diseases, 1975)	September				January–September				12 months ending with September			
	1991		1990		1991		1990		1991		1990	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Total, under 1 year.	2,900	834.6	3,100	875.7	27,600	897.9	28,800	927.2	37,000	897.0	38,500	929.4
Under 28 days	1,940	555.3	2,150	610.5	17,380	564.8	18,030	581.1	23,260	564.6	24,050	580.0
28 days to 11 months.	970	277.6	940	266.9	10,250	333.1	10,800	348.1	13,690	332.3	14,540	350.6
Certain gastrointestinal diseases008–009,535,555–558	30	*	—	—	260	8.4	150	4.8	310	7.5	220	5.3
Pneumonia and influenza480–487	30	*	40	*	510	16.6	440	14.2	650	15.8	550	13.3
Congenital anomalies740–759	540	154.6	620	176.0	5,870	190.7	6,300	203.1	8,080	196.1	8,210	198.0
Disorders relating to short gestation and unspecified low birthweight765	450	128.8	400	113.6	3,520	114.4	2,870	92.5	4,570	110.9	3,910	94.3
Birth trauma767	50	*	30	*	110	3.6	110	3.5	170	4.1	140	3.4
Intrauterine hypoxia and birth asphyxia.768	60	*	50	*	590	19.2	600	19.3	770	18.7	810	19.5
Respiratory distress syndrome769	130	37.2	200	56.8	1,870	60.8	1,760	56.7	2,570	62.4	2,510	60.5
Other conditions originating in the perinatal period.760–764,766,770–779	810	231.8	880	249.9	6,550	212.8	7,450	240.1	8,720	211.7	9,830	237.1
Sudden infant death syndrome798.0	320	91.6	350	99.4	3,100	100.7	3,720	119.9	4,360	105.8	5,060	122.0
All other causesResidual	490	140.2	510	144.8	5,240	170.3	5,410	174.4	6,740	163.6	7,370	177.7

NOTE: Figures include all revisions received from the States. Cumulative and 12-month figures for the current year reflect revisions received for previous months, and figures for earlier years may differ from those previously published.

Technical notes

Nature and sources of data

Data in this report are provisional and include only events occurring within the United States. Mortality data exclude fetal deaths.

Beginning with the January 1991 issue birth, death, and infant death figures for all years shown in tables 2 and 4 for each State are estimates by State of residence. These estimates are derived by applying adjustment ratios to the actual counts of certificates for all events occurring in the State and received in registration offices during a 1-month period regardless of date of the event. The adjustment ratios for each data year represent the observed relationship between final State occurrence and residence figures for the 3 most recent years for which final data were available, expressed as a single ratio for each State. As in previous years, monthly State marriage and divorce figures represent the actual count of all events occurring in the State (State of occurrence) that were received in the registration offices during the 1-month period. Prior to the January 1991 issue, provisional data for all events were by State of occurrence. Delay in the receipt of certificates in a registration office may result in a low State figure for a given month followed by a high figure for the month(s) in which the delayed records are received. Data for previous months and cumulative data include revised figures received from the States.

Figures for births, deaths, and infant deaths for all years for California shown in tables 2 and 4 contain adjustments for varying length of State reporting periods. Beginning with data for February 1991, figures for Texas for all events shown in tables 2-4 are also adjusted for varying length of State reporting periods. Prior to February 1991 data for Texas were reported for monthly periods. The figures for both States are adjusted by the ratio between the number of days in the data month and the number of days in the State reporting period. The adjusted figures for California and Texas shown in tables 2-4 are included in the U.S. totals.

Beginning with data for January 1991, U.S. totals for births, deaths, and infant deaths are based on the State estimates by State of residence (described above) and, therefore, in effect, exclude events to nonresidents of the United States. Events to nonresidents of the United States are included in all marriage and divorce figures for all years and in the U.S. birth, death, and infant death figures for 1990 and previous years. The effect of excluding events to nonresidents from the U.S. totals is small.

Provisional totals for the United States include estimates for State data shown as not available. Provisional totals for births and marriages for the entire United States include adjustments for observed differences between provisional and final monthly figures.

Divorce figures include reported annulments. The monthly national divorce estimate is obtained by multiplying the total for the reporting areas by the ratio observed between the most recent final annual divorce total for the United States and the provisional total for the reporting areas combined.

Random variation—Although the counts in this report are not subject to sampling variability (except the Current Mortality Sample, see below), they may be affected by random variation. When the number of events is small and the probability of such an event is small, considerable caution must be observed in interpreting the data. Such infrequent events may be assumed to follow a Poisson probability distribution. For this distribution a simple approximation may be used to estimate the random variation, as follows:

If N is the number of events in the population and R is the corresponding rate, the chances are 19 in 20 that

$$1. N-2\sqrt{N} \text{ and } N+2\sqrt{N}$$

covers the "true" number of events.

$$2. R-2\frac{R}{\sqrt{N}} \text{ and } R+2\frac{R}{\sqrt{N}}$$

covers the "true" rate.

If the rate R_1 corresponding to N_1 events is compared with the rate R_2 corresponding to N_2 events, the difference between the two rates may be regarded as statistically significant at the 0.05 level if it exceeds

$$2\sqrt{\frac{R_1^2}{N_1} + \frac{R_2^2}{N_2}}$$

Additional information on random variation in numbers of events, rates, and ratios may be found in the technical appendixes of *Vital Statistics of the United States, 1988*, Volumes I and II.

Rates

Rates are on an annual basis and, except for infant mortality rates, are per 1,000 or 100,000 estimated population residing in the United States. The populations used for computing these rates are furnished by the U.S. Bureau of the Census. The population estimates are based on the 1980 Census of Population and do not reflect the results of the 1990 census enumeration. Monthly rates are based on populations estimated for the specific month. Year-to-date rates are averages of the monthly rates weighted by the number of days in each respective month. Rates for 12-month periods are the sum of events for the period per population estimated at the midpoint of the period.

Infant mortality rates are infant deaths for the specified period (monthly, year-to-date, 12-month period) per 1,000 or 100,000 live births. Births used for computing monthly and year-to-date infant mortality rates are adjusted for monthly variation in the number of births; births used to compute 12-month rates do not contain this adjustment. Births used for computing infant mortality rates are not corrected for observed differences between provisional and final monthly figures as described in section on Nature and sources of data. Because monthly infant mortality rates are based on relatively few events, they are highly variable. Therefore, comparisons between monthly infant

mortality rates should be interpreted cautiously; see section on Random variation.

The age-adjusted rates presented in this report are computed by the direct method, that is, by applying the age-specific death rates for age groups shown in the specific table to the standard population distributed by age. The total population as enumerated in 1940 was selected as the standard. It is important not to compare age-adjusted death rates with crude rates.

Current Mortality Sample

The Current Mortality Sample (CMS) is a 10-percent systematic sample of death certificates drawn each month after the certificates are counted in the State registration offices. Deaths and death rates by age, race, sex, and cause are based on the sample. Because of the additional time required to select and process the certificates, data based on the CMS are published 1 month after publication of the U.S. and State counts. Complete information concerning the underlying cause of death is sometimes not available when the sample is drawn. As a result, estimates based on sample counts for certain causes are biased. Correction for bias is shown in the annual summary (issue No. 13 in this series) for each year.

Estimated numbers of deaths and death rates based on the sample were proportionately adjusted to be consistent with estimates based on the count of death certificates received in State registration offices.

HIV infection—Beginning with data for 1987, NCHS introduced category numbers *042–*044 for classifying and coding human immunodeficiency virus infection (HIV infection), formerly referred to as human T-cell lymphotropic virus-III/lymphadenopathy-associated virus (HTLV-III/LAV) infection. The asterisk before the category numbers indicates that these codes are not part of the Ninth Revision of the International Classification of Diseases (ICD-9). Deaths classified to these categories are included in All other infectious and parasitic diseases

in the List of 72 Selected Causes of Death as well as shown separately at the bottom of table 6. For 1986 and earlier years these deaths were classified to a number of other causes. Therefore, beginning with 1987, cause-of-death data are not strictly comparable with data for earlier years.

Sampling variability—Because the estimates of deaths and death rates presented in this report (with the exception of total deaths and deaths under 1 year) are based on a sample of death certificates, they are subject to sampling variability. The estimated relative standard error shown in the table is a measure of the sampling error of the estimated number of deaths (or of the estimated death rate) expressed as a percent of the estimate. The first column refers to monthly estimates; the second to annual; cumulative year-to-date totals will be between the two.

The chances are about 2 out of 3 that the percent difference between an estimate and the result of a complete count is less than the percent shown. The chances are about 19 out of 20 that the percent difference is less than twice the percent shown. Figures based on 100 or fewer estimated deaths have relative standard errors of 30 percent or more and are, therefore, considered unreliable. Rates based on 100 or fewer estimated deaths are indicated by an “*”.

Relative standard errors for estimated numbers of deaths from the Current Mortality Sample expressed as a percent of the estimate

Estimated number of deaths	Relative standard error of estimate (as percent)	
	170,000 estimated deaths each month	2,000,000 estimated deaths each year
10	94.9	94.9
20	67.1	67.1
50	42.4	42.4
100	30.0	30.0
200	21.2	21.2
500	13.4	13.4
1,000	9.5	9.5
2,000	6.7	6.7
5,000	4.2	4.2
10,000	2.9	3.0
20,000	2.0	2.1
50,000	1.1	1.3
100,000	0.6	0.9
200,000	...	0.6
500,000	...	0.4
1,000,000	...	0.2

Unless otherwise specified, comparisons made in the text between death rates based on the CMS were statistically significant at the 0.05 level of significance. Lack of comment in the text about any two rates does not mean that the difference was tested and found not to be significant at this level.

Mortality Surveillance System—The Mortality Surveillance System charts are based entirely on monthly provisional data from the Current Mortality Sample (CMS). Where sample size permits, age-race-sex comparisons are made for the causes of death. Where sample size is too small, only age-sex comparisons are made. A time series regression model of the following form was used:

$$Y(t) = A_0 + A_1 t + A_2 t^2 + C \cos(2\pi t/12) + S \sin(2\pi t/12) + \epsilon_t$$

where

$Y(t)$ = monthly death rate at time t
 t = month number

A_0 = coefficient, which, together with C determines the Y -intercept

A_1 = coefficient of t

A_2 = coefficient of t^2

C, S = coefficients of the harmonic terms

ϵ_t = error terms, assumed to be independent and normally distributed with means 0 and constant variances,

and $\cos(2\pi t/12)$ and $\sin(2\pi t/12)$ are 12-month period harmonic functions.

The coefficients of this model were estimated using provisional monthly death rates from January 1982 through the month that is 12 months prior to the latest month shown in the chart. The graph of the estimated equation and 95-percent prediction intervals is shown from January 1984 through the month that is 12 months prior to the latest month shown in the chart; the graph for the subsequent 12 months is projected (1). Symbols in each chart represent actual monthly death rates based on the CMS. In some cases the data are transformed by the natural logarithm before fitting

the model. For graphical purposes the data are transformed back to rates by the inverse of the natural logarithm. This procedure has the advantage of avoiding negative prediction intervals for the model. The models, parameter estimates, and statistical tests for lack of fit are available upon request for the charts published in the Mortality Surveillance System. Time series

regression models have previously been used to describe trends in mortality data (2-4). A list of cause-of-death topics is presented in the table on the back of this report.

1. Ostle B. Statistics in research. Second edition. The Iowa State University Press. Ames, Iowa, 159-221. 1963.

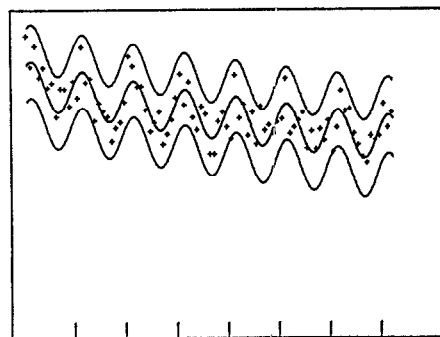
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4. Shumway RH. Applied statistical time series analysis. Prentice-Hall Press. Englewood Cliffs, New Jersey. 1988.

Mortality Surveillance System chart topics

<i>MVSR issue</i>	<i>Cause-of-death chart topics</i>
Vol. 39 No. 11	Motor vehicle accidents
Vol. 39 No. 12	Motor vehicle accidents, Homicide and legal intervention, and Suicide
Vol. 40 No. 1	Human immunodeficiency virus infection; Symptoms, signs, and ill-defined conditions; and Septicemia
Vol. 40 No. 2	Cerebrovascular diseases
Vol. 40 No. 3	Chronic obstructive pulmonary diseases and allied conditions
Vol. 40 No. 4	Diabetes mellitus
Vol. 40 No. 5	Diseases of heart
Vol. 40 No. 6	Malignant neoplasms including neoplasms of lymphatic and hematopoietic tissues
Vol. 40 No. 7	Malignant neoplasms of trachea, bronchus, and lung
Vol. 40 No. 8	Malignant neoplasm of prostate, Malignant neoplasm of breast
Vol. 40 No. 9	Malignant neoplasms of digestive organs and peritoneum
Vol. 40 No. 10	Suicide

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