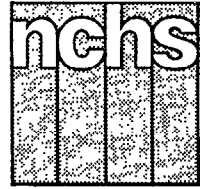


Monthly Vital Statistics Report



Provisional Data From the CENTERS FOR DISEASE CONTROL AND PREVENTION/National Center for Health Statistics

Revised May 10, 1993

Births, Marriages, Divorces, and Deaths for November 1992

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Accidents and adverse effects and Homicide and legal intervention: Males 25-44 years of age by race
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Accidents and adverse effects and Homicide and legal intervention: Males

Births

According to provisional reports, an estimated 331,000 births occurred in the United States during November 1992. This was an increase of 2 percent from the provisional number of births reported for November 1991 (324,000). The birth rate, 15.7 live births per 1,000 population, was 1 percent higher than the rate of 15.5 for November 1991. The fertility rate, 68.5 live births per 1,000 women aged 15-44 years, was 3 percent higher than the comparable rate for November 1991 (66.8). The seasonally adjusted fertility rate (70.6) also was 3 percent higher than the comparable rate for November a year earlier (68.7).

During the first 11 months of 1992, an estimated 3,754,000 births occurred, a slight decline from the 3,769,000 reported for the first 11 months of 1991. The birth rate for this period declined by 2 percent from 16.3 in 1991 to 16.0 in 1992.

An estimated 4,096,000 live births occurred in the 12-month period ending with November 1992, a decline of 1 percent from the 4,119,000 births reported for the same period a year earlier. The birth rate of 16.0 was 2 percent lower than the rate of 16.3 for the preceding 12 months. The fertility rate for the most recent 12-month period was 69.5, slightly lower than the rate for the 12 months ending with

Provisional Vital Statistics for the United States

[Rates for infant deaths are infant deaths per 1,000 live births; fertility rates per 1,000 women aged 15-44 years; all other rates per 1,000 population. Data are subject to monthly reporting variation; see Technical notes]

Item	November				January-November				12 months ending with November					
	Number		Rate		Number		Rate		Number		Rate			
	1992	1991	1992	1991	1992	1991	1992	1991	1992	1991	1992	1991	1990	1989
Live births	331,000	324,000	15.7	15.5	3,754,000	3,769,000	16.0	16.3	4,096,000	4,119,000	16.0	16.3	16.6	16.1
Fertility rate			68.5	66.8			69.6	69.8			69.5	69.8	71.0	68.5
Deaths	182,000	176,000	8.6	8.4	1,998,000	1,973,000	8.5	8.5	2,189,000	2,161,000	8.5	8.5	8.7	8.6
Infant deaths	2,700	3,000	8.1	9.0	31,500	33,500	8.4	8.9	34,400	36,700	8.5	9.0	9.1	9.7
Natural Increase	149,000	148,000	7.1	7.1	1,756,000	1,796,000	7.5	7.8	1,907,000	1,958,000	7.5	7.8	7.9	7.5
Marriages	173,000	177,000	8.2	8.4	2,174,000	2,191,000	9.3	9.5	2,354,000	2,383,000	9.2	9.4	9.8	9.7
Divorces	96,000	93,000	4.5	4.4	1,095,000	1,088,000	4.7	4.7	1,194,000	1,186,000	4.7	4.7	4.7	4.7

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 and Prevention
National Center for Health Statistics



November 1991 (69.8). These lower rates continue the generally downward trend observed since early 1991.

Natural increase

As a result of natural increase, the excess of births over deaths, an estimated 149,000 people, or 7.1 persons per 1,000 population, were added to the population during November 1992.

For the 12-month period ending with November 1992, 1,907,000 persons were added to the population. This represents a rate of natural increase of 7.5, 4 percent lower than the rate of 7.8 for the preceding 12-month period. The decline in the rate of natural increase is due entirely to a decrease in the birth rate.

Marriages

For November 1992, the number of marriages and the marriage rate per 1,000 population were 2 percent lower than for November 1991. The number of marriages dropped from 177,000 to 173,000, while the marriage rate declined from 8.4 to 8.2.

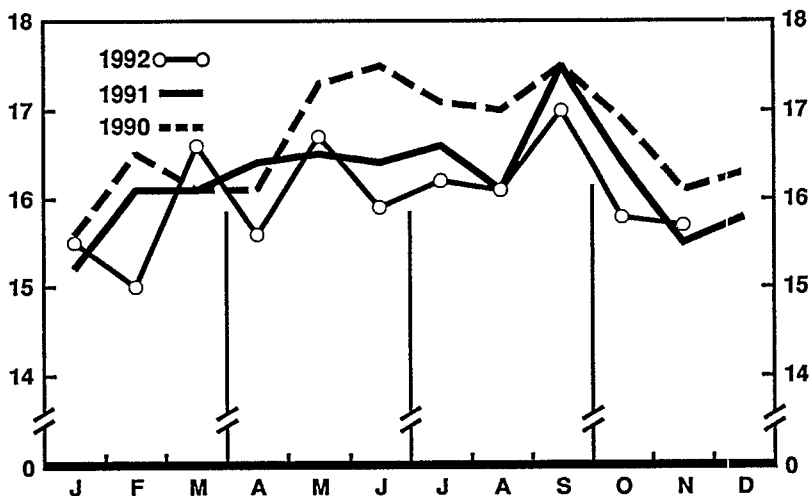
For January–November 1992, the number of marriages totaled 2,174,000, a 1-percent decline from the first 11 months of 1991 (2,191,000). The marriage rate for this period declined 2 percent, from 9.5 in 1991 to 9.3 in 1992.

The number of marriages performed during the 12 months ending with November 1992 (2,354,000) was 1 percent lower than for the comparable period a year earlier (2,383,000). The 12-month marriage rate dropped 2 percent, from 9.4 in 1991 to 9.2 in 1992.

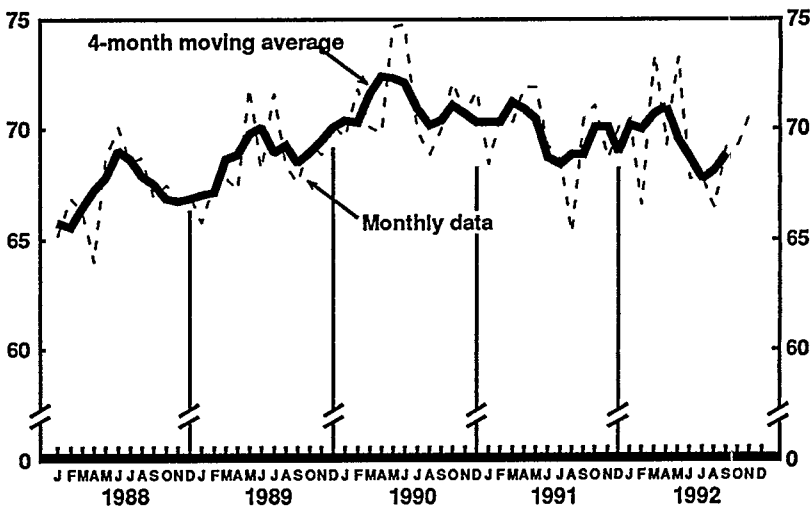
Divorces

The estimated number of divorces granted in November 1992 was 96,000, a 3-percent increase from November 1991 (93,000). The divorce rate for November 1992 was 4.5 per 1,000 population, 2 percent higher than a year earlier (4.4).

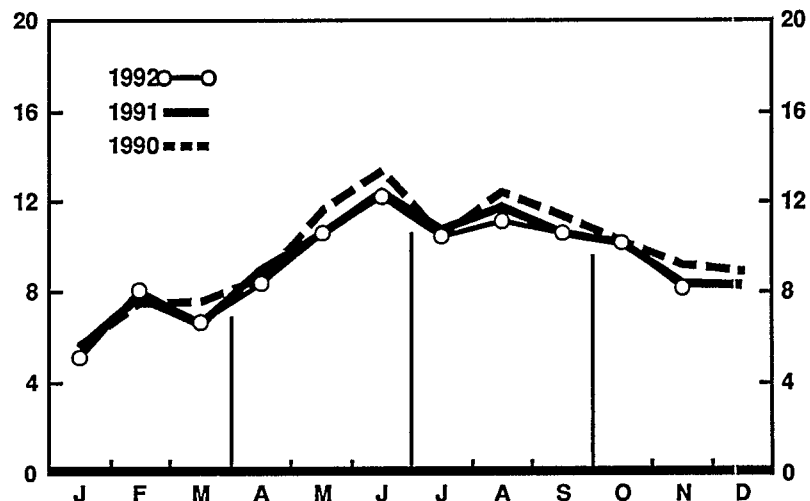
During January–November 1992, there were approximately 1,095,000 divorces, a 1-percent increase from the estimated number for the first 11 months of 1991 (1,088,000). However, the divorce rate remained steady at 4.7.



Provisional birth rates per 1,000 population by month: United States, 1990-92



Provisional seasonally adjusted fertility rates per 1,000 women aged 15-44: United States, 1988-92



Provisional marriage rates per 1,000 population by month: United States, 1990-92

Divorces granted during the 12-month period ending with November 1992 totaled 1,194,000, a 1-percent increase from the number for the comparable period a year earlier (1,186,000). Despite the slight increase in the number, the divorce rate for this period was 4.7 for both years.

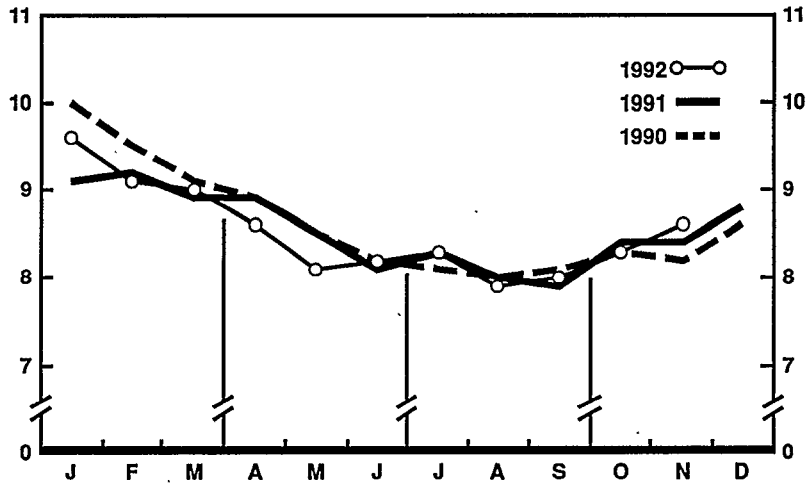
Deaths

During November 1992, an estimated 182,000 deaths occurred in the United States. The death rate was 8.6 deaths per 1,000 population, 2 percent higher than the rate for November a year earlier. Among the 182,000 deaths for November 1992 were 2,700 deaths at ages under 1 year.

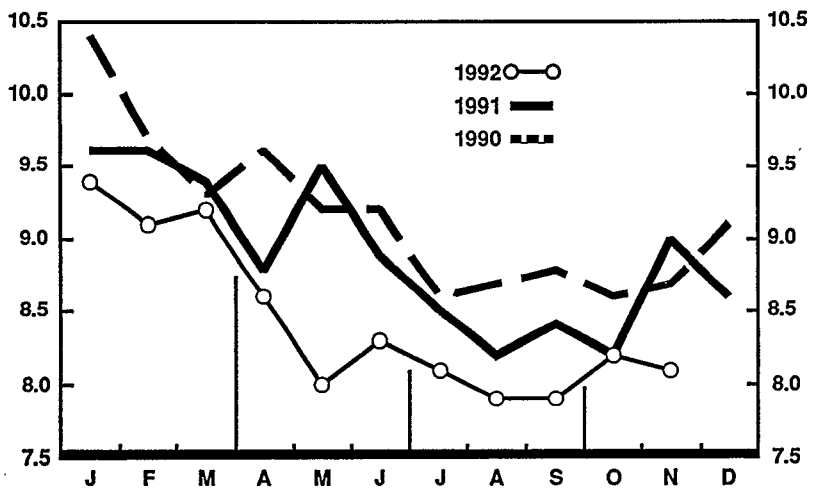
According to provisional statistics, 1,998,000 deaths occurred during the first 11 months of 1992, 1 percent higher than the number estimated for January–November 1991 (1,973,000). The death rate, 8.5 per 1,000 population, was the same as the rate for January–November 1991. Among the 1,998,000 deaths for the first 11 months of 1992 were 31,500 deaths at ages under 1 year, yielding an infant mortality rate of 8.4 per 1,000 live births. This rate was 6 percent lower than the rate of 8.9 for the first 11 months of 1991.

The death rate for the 12 months ending with November 1992 was 8.5 deaths per 1,000 population, the same as the rate for the comparable 12-month period a year earlier. The infant mortality rate was 8.5 per 1,000 live births, 6 percent lower than the rate of 9.0 for the 12 months ending with November 1991.

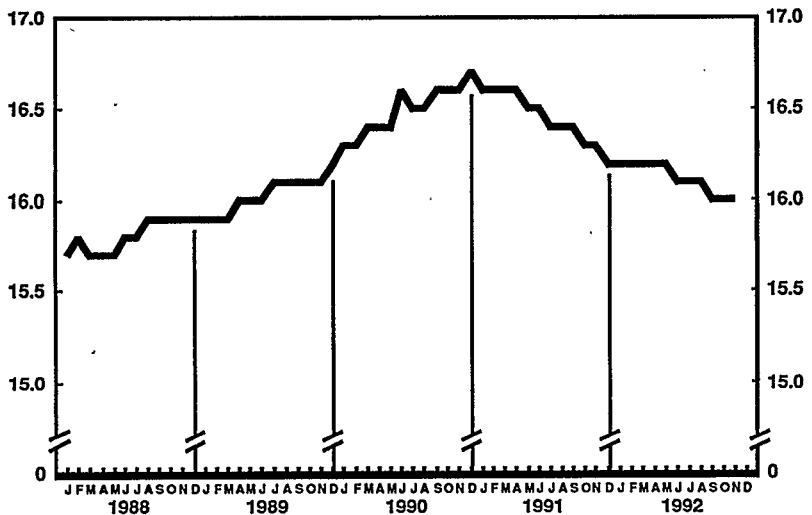
Current Mortality Sample, 12 months ending with October 1992—The provisional death rate for the 12 months ending with October 1992 was 853.3 deaths per 100,000 population, slightly higher than the rate of 851.3 for the 12-month period ending with October 1991. The provisional age-adjusted death rate for the 12-month period ending with October 1992 was 502.7 deaths per 100,000 population, 1 percent lower than the rate of 506.3 for the 12-month period ending with October 1991. Age-adjusted death



Provisional death rates per 1,000 population by month: United States, 1990-92



Provisional infant mortality rates per 1,000 live births by month: United States, 1990-92



Provisional birth rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1988-92

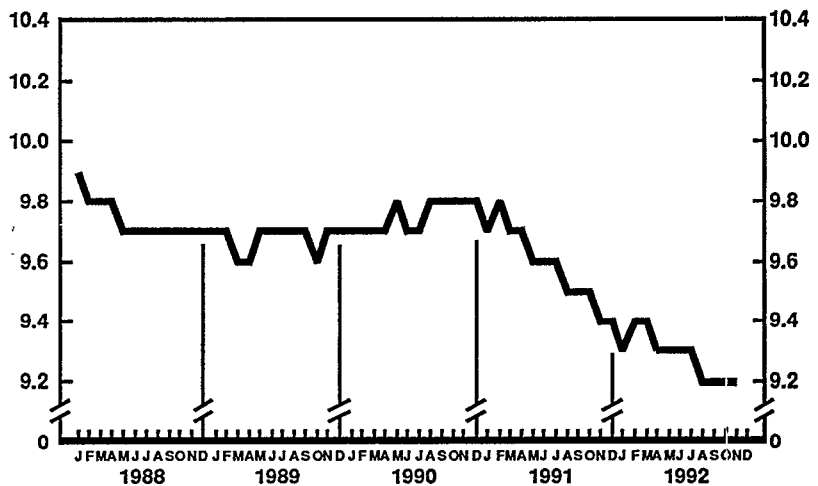
rates control for changes and variations in the age composition of the population; therefore, they are better indicators than crude rates for showing changes in mortality risk over time and for showing differences between race-sex groups within the population. Among the race-sex groups, the estimated age-adjusted death rates decreased for white males and white females. By age, the death rate for the total population decreased for the age groups under 1 year and 85 years and over but increased for the age group 35-44 years.

Among the major causes of death, the estimated death rate increased between the two successive 12-month periods for Malignant neoplasms of respiratory and intrathoracic organs, Chronic obstructive pulmonary diseases, and Human immunodeficiency virus (HIV) infection. The death rate decreased between the two successive 12-month periods for Motor vehicle accidents.

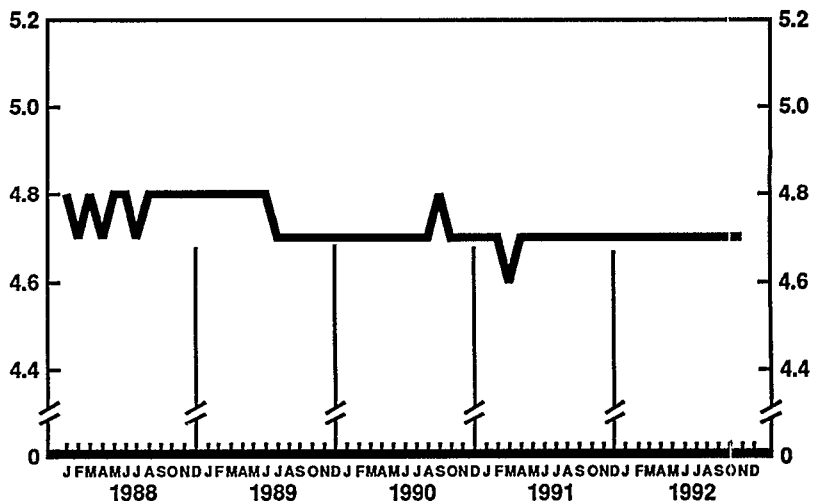
The infant mortality rate for the 12 months ending with October 1992 was 854.7 per 100,000 live births, 4 percent lower than the rate of 894.0 for the comparable period a year earlier. For infants under 28 days, the 12-month rate ending with October 1992 was 537.8 compared with a rate of 564.2 for the 12-month period a year earlier. The infant mortality rate for infants 28 days to 11 months was 317.0 compared with a rate of 330.0 for the same 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 death, the infant mortality rate decreased between the two successive 12-month periods for Disorders relating to short gestation and unspecified low birthweight and Respiratory distress syndrome.

Mortality Surveillance System

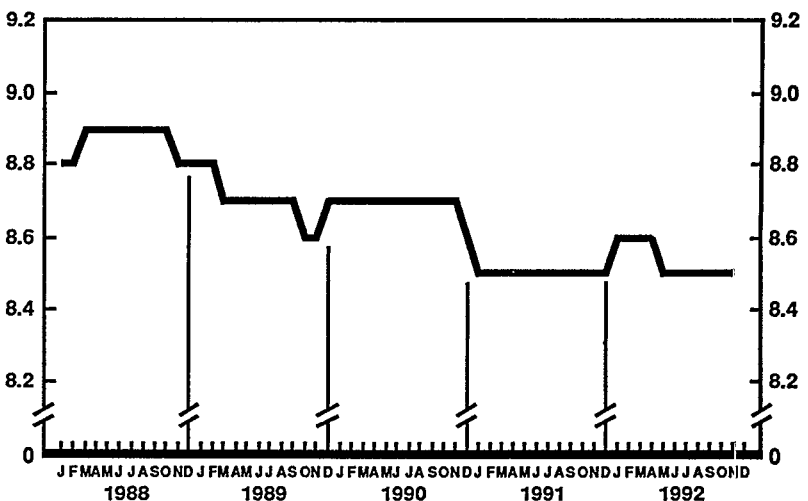
Discussed this month are recent trends in death rates for Accidents and adverse effects (accidents) and Homicide and legal intervention (homicide) for black and white men aged 25-44 years. In this issue, final mortality data



Provisional marriage rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1988-92



Provisional divorce rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1988-92



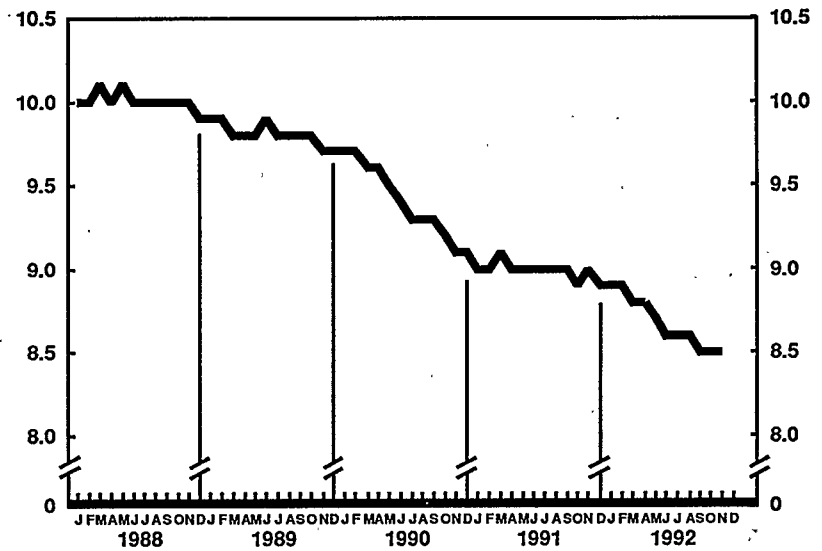
Provisional death rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1988-92

are analyzed for data year 1989 and provisional data from January 1982–April 1992.

In 1989, accidents was the third leading cause of death for black men aged 25–44 years (after homicide and HIV infection). It accounted for 3,476 deaths, or 14 percent of deaths from all causes for men in this age group. For white males aged 25–44 years, accidents was the leading cause of death, accounting for 17,792 deaths, or 24 percent of deaths from all causes for men in this age group.

In 1989, homicide was the leading cause of death for black men aged 25–44 years, accounting for 4,392 deaths, or 18 percent of deaths from all causes for men in this age group. For white males aged 25–44 years, homicide was the sixth leading cause of death accounting for 4,174 deaths, or 6 percent of deaths from all causes for men in this age group.

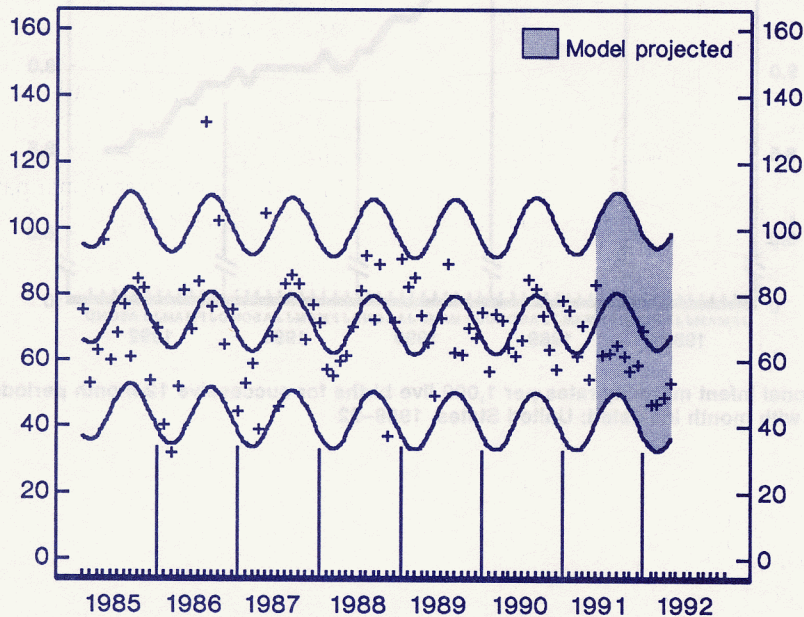
Based on 1989 final data, the death rate for accidents for black men aged 25–44 years was 1.5 times the rate for white men aged 25–44 years, and the rate for homicide for black men aged 25–44 years was 8.1 times the rate for white men in the same age group. Trends based on provisional data for these causes and demographic groups are presented in the Mortality Surveillance System charts and accompanying text that follow.



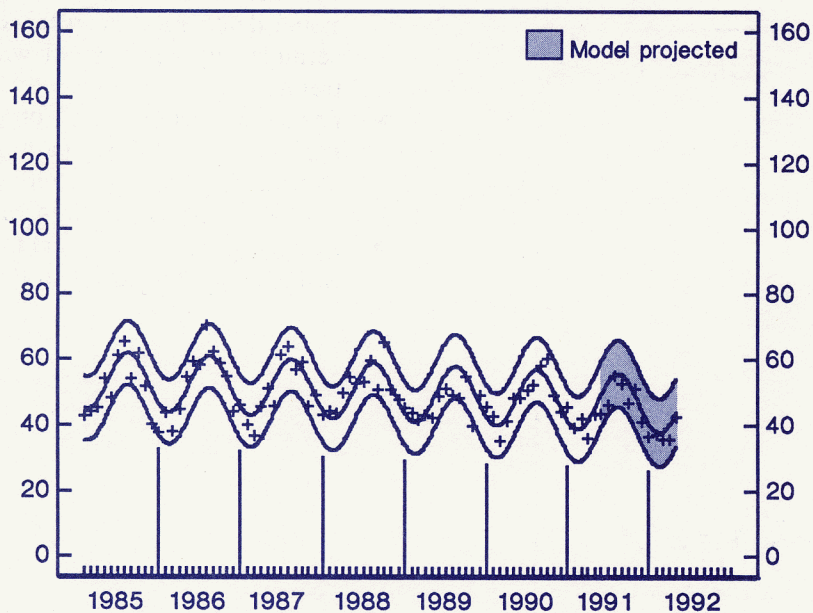
Provisional infant mortality rates per 1,000 live births for successive 12-month periods ending with month indicated: United States, 1988–92

Mortality Surveillance System Charts

[Observed and fitted provisional monthly death rates and 95-percent prediction intervals. Model fitted using death rates for January 1982–April 1991; projected for May 1991–April 1992. See Technical notes]



Provisional death rates per 100,000 black males 25–44 years of age for Accidents and adverse effects, by month: United States, 1985–92



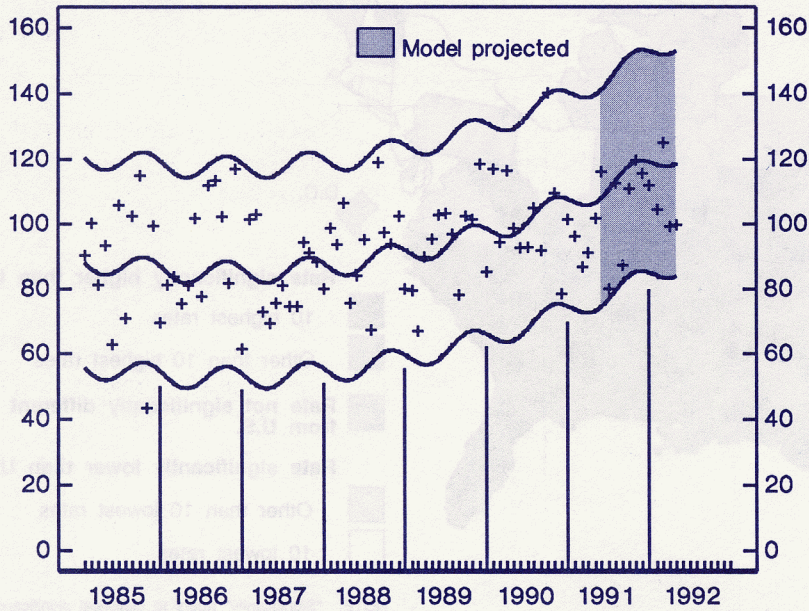
Provisional death rates per 100,000 white males 25–44 years of age for Accidents and adverse effects, by month: United States, 1985–92

- For the modeled period, provisional death rates showed no discernible upward or downward trend.
- For the projection period, observed provisional monthly death rates fell within 95-percent prediction intervals.
- For the projection period, 10 of the 12 observed provisional monthly death rates were below the predicted line.
- Mortality shows a seasonal pattern with death rates higher in the late summer.

- For the modeled period, provisional death rates decreased slightly.
- For the projection period, observed provisional monthly death rates fell within 95-percent prediction intervals.
- Mortality shows a seasonal pattern with death rates higher in the late summer.

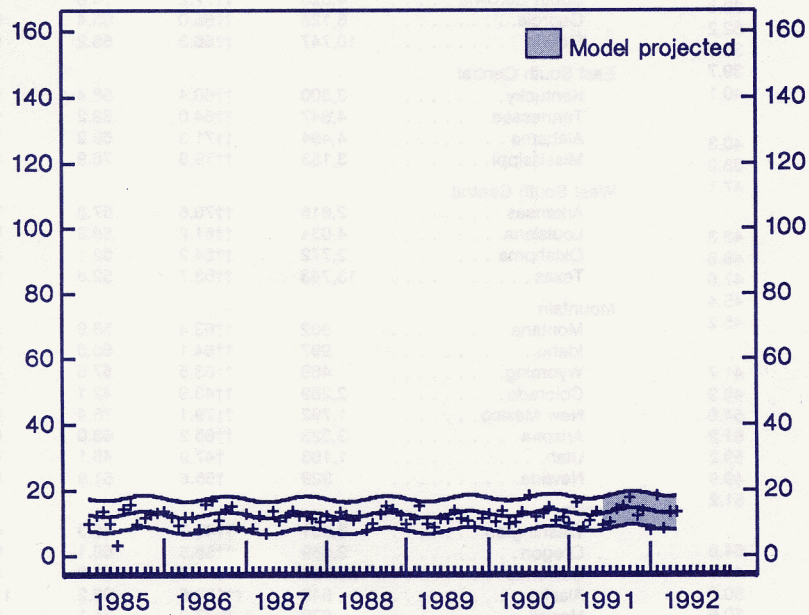
Mortality Surveillance System Charts – Con.

[Observed and fitted provisional monthly death rates and 95-percent prediction intervals. Model fitted using death rates for January 1982–April 1991; projected for May 1991–April 1992. See Technical notes]



- For the modeled period, provisional death rates have increased since the mid-1980's.
- For the projection period, observed provisional monthly death rates fell within 95-percent prediction intervals.
- Mortality shows a seasonal pattern with death rates higher in the fall.

Provisional death rates per 100,000 black males 25–44 years of age for Homicide and legal intervention, by month: United States, 1985–92

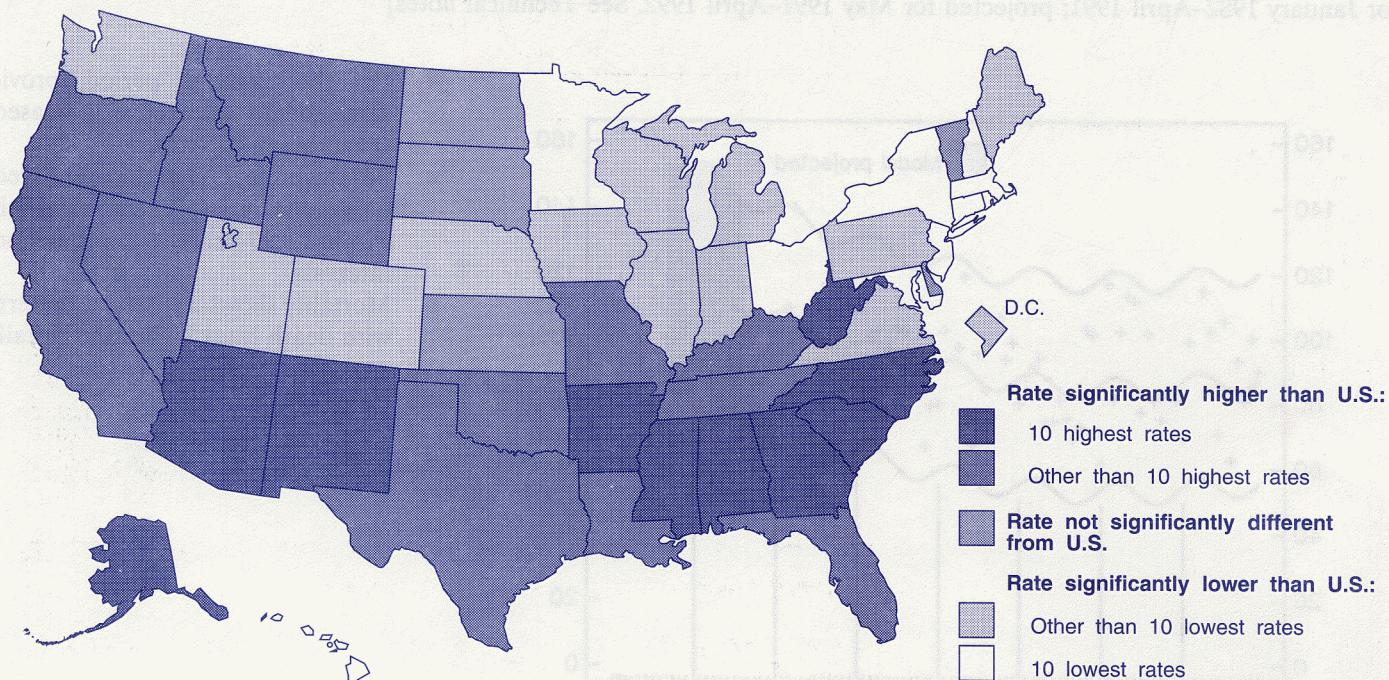


- For the modeled period, provisional death rates showed no discernible upward or downward trend.
- For the projection period, observed provisional monthly death rates, except for 1 month, fell within 95-percent prediction intervals.
- Mortality shows a seasonal pattern with death rates higher in the fall.

Provisional death rates per 100,000 white males 25–44 years of age for Homicide and legal intervention, by month: United States, 1985–92

Final 3-year total number of deaths and average annual age-adjusted death rates and 95-percent confidence limits for Accidents and adverse effects for males: United States and each State, 1987-89

[Data are final by State of residence]



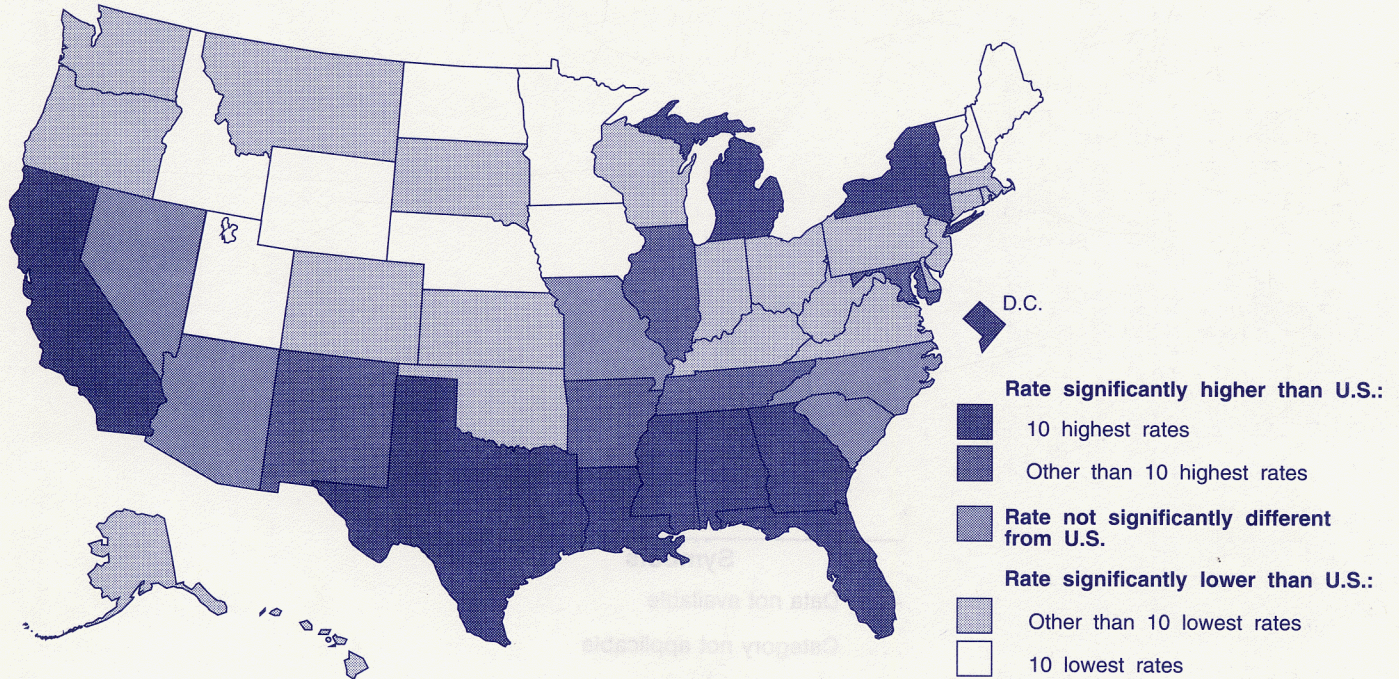
NOTE: "Significantly" refers to statistical significance at the 0.05 level.

Area	Deaths, 3-year total (final)	Age-adjusted rate (final)	95-percent confidence limits		Area	Deaths, 3-year total (final)	Age-adjusted rate (final)	95-percent confidence limits	
			Lower	Upper				Lower	Upper
United States	194,549	50.8	50.6	51.0	South Atlantic—Con.				
New England					West Virginia	1,901	††65.3	62.3	68.3
Maine	863	††44.2	41.1	47.3	North Carolina	6,449	††64.3	62.7	65.9
New Hampshire	612	††36.8	33.8	39.8	South Carolina	4,023	††77.2	74.8	79.6
Vermont	434	47.6	43.0	52.2	Georgia	6,128	††65.0	63.4	66.6
Massachusetts	3,310	††34.6	33.4	35.8	Florida	10,747	††56.3	55.2	57.4
Rhode Island	591	††36.6	33.5	39.7	East South Central				
Connecticut	1,960	††38.3	36.5	40.1	Kentucky	3,500	††60.4	58.4	62.4
Middle Atlantic					Tennessee	4,847	††64.0	62.2	65.8
New York	11,141	††39.5	38.7	40.3	Alabama	4,494	††71.3	69.2	73.4
New Jersey	4,472	††36.9	35.8	38.0	Mississippi	3,153	††79.8	76.9	82.7
Pennsylvania	8,819	††46.1	45.1	47.1	West South Central				
East North Central					Arkansas	2,616	††70.6	67.8	73.4
Ohio	7,121	††42.3	41.3	43.3	Louisiana	4,034	††61.2	59.3	63.1
Indiana	4,089	††47.3	45.8	48.8	Oklahoma	2,772	††54.2	52.1	56.3
Illinois	8,383	††46.6	45.6	47.6	Texas	13,743	††53.7	52.8	54.6
Michigan	6,373	††44.3	43.2	45.4	Mountain				
Wisconsin	3,428	††43.7	42.2	45.2	Montana	802	††63.4	58.9	67.9
West North Central					Idaho	997	††64.1	60.0	68.2
Minnesota	2,848	††40.2	38.7	41.7	Wyoming	463	††63.5	57.5	69.5
Iowa	2,193	††46.8	44.7	48.9	Colorado	2,269	††43.9	42.1	45.7
Missouri	4,301	†52.9	51.3	54.5	New Mexico	1,792	††79.1	75.4	82.8
North Dakota	504	46.9	42.6	51.2	Arizona	3,523	††65.2	63.0	67.4
South Dakota	623	54.7	50.2	59.2	Utah	1,163	†47.9	45.1	50.7
Nebraska	1,220	††47.1	44.3	49.9	Nevada	929	†55.6	51.9	59.3
Kansas	1,946	48.9	46.6	51.2	Pacific				
South Atlantic					Washington	3,551	††47.9	46.3	49.5
Delaware	523	50.2	45.8	54.6	Oregon	2,559	††58.5	56.1	60.9
Maryland	2,976	††41.3	39.8	42.8	California	22,735	†51.7	51.0	52.4
District of Columbia	447	†45.6	41.2	50.0	Alaska	848	††103.5	96.2	110.8
Virginia	4,655	†49.2	47.8	50.6	Hawaii	679	††37.0	34.1	39.9

NOTE: Data are final. Rates per 100,000 population in specified group. The symbols † and †† denote statistical significance of the difference between the U.S. and State rates at the 0.05 and 0.01 levels, respectively. For method of computation of rates, confidence limits, and tests of statistical significance, see Technical notes.

Final 3-year total number of deaths and average annual age-adjusted death rates and 95-percent confidence limits for Homicide and legal intervention for males: United States and each State, 1987–89

[Data are final by State of residence]



NOTE: "Significantly" refers to statistical significance at the 0.05 level.

Area	Deaths, 3-year total (final)	Age-adjusted rate (final)	95-percent confidence limits		Area	Deaths, 3-year total (final)	Age-adjusted rate (final)	95-percent confidence limits	
			Lower	Upper				Lower	Upper
United States	50,253	13.9	13.8	14.0	South Atlantic—Con.				
New England					West Virginia	250	††9.1	8.0	10.2
Maine	63	††3.5	2.6	4.4	North Carolina	1,390	14.2	13.4	15.0
New Hampshire	49	††3.0	2.2	4.0	South Carolina	740	14.4	13.4	15.4
Vermont	28	††3.3	2.2	4.8	Georgia	1,927	††20.6	19.7	21.5
Massachusetts	465	††5.4	4.9	5.9	Florida	3,695	††22.0	21.3	22.7
Rhode Island	102	††7.2	5.8	8.6	East South Central				
Connecticut	405	††8.7	7.8	9.6	Kentucky	525	††9.5	8.7	10.3
Middle Atlantic					Tennessee	1,120	††15.6	14.7	16.5
New York	5,426	††21.7	21.1	22.3	Alabama	1,098	††18.5	17.4	19.6
New Jersey	904	††8.2	7.7	8.7	Mississippi	700	††19.1	17.7	20.5
Pennsylvania	1,552	††9.1	8.6	9.6	West South Central				
East North Central					Arkansas	539	††15.9	14.5	17.3
Ohio	1,210	††7.6	7.2	8.0	Louisiana	1,438	††22.4	21.2	23.6
Indiana	636	††7.8	7.2	8.4	Oklahoma	571	††11.8	10.8	12.8
Illinois	2,635	††15.7	15.1	16.3	Texas	4,795	††19.1	18.6	19.6
Michigan	2,556	††18.7	18.0	19.4	Mountain				
Wisconsin	365	††5.1	4.6	5.6	Montana	64	††5.4	4.1	6.7
West North Central					Idaho	64	††4.3	3.2	5.4
Minnesota	232	††3.5	3.0	4.0	Wyoming	30	††4.3	2.9	6.1
Iowa	104	††2.5	2.0	3.0	Colorado	369	††7.2	6.5	7.9
Missouri	1,007	13.7	12.8	14.6	New Mexico	366	††16.3	14.6	18.0
North Dakota	22	††2.3	1.4	3.5	Arizona	686	13.3	12.3	14.3
South Dakota	54	††5.1	3.7	6.5	Utah	111	††4.7	3.8	5.6
Nebraska	108	††4.6	3.7	5.5	Nevada	219	13.6	11.8	15.4
Kansas	237	††6.3	5.5	7.1	Pacific				
South Atlantic					Washington	521	††7.2	6.6	7.8
Delaware	64	††6.5	4.9	8.1	Oregon	305	††7.3	6.5	8.1
Maryland	1,166	††17.1	16.1	18.1	California	7,337	††17.3	16.9	17.7
District of Columbia	746	††86.8	80.4	93.2	Alaska	79	††9.3	7.2	11.4
Virginia	1,086	††11.6	10.9	12.3	Hawaii	92	††5.3	4.2	6.4

NOTE: Data are final. Rates per 100,000 population in specified group. The symbols † and †† denote statistical significance of the difference between the U.S. and State rates at the 0.05 and 0.01 levels, respectively. For method of computation of rates, confidence limits, and tests of statistical significance, see Technical notes.

Symbols

- Data not available
 - ... Category not applicable
 - Quantity zero
 - 0.0 Quantity more than zero but less than 0.05
 - * 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 1991–November 1992

[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 years		Number	Rate per 1,000 population	Number	Rate per 1,000 population	Number	Rate per 1,000 live births
			Unadjusted	Seasonally adjusted 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	6.6	191,000	8.9	3,200	9.4
April	340,000	16.4	70.2	71.9	186,000	9.0	185,000	8.9	3,000	8.8
May	355,000	16.5	70.9	71.9	230,000	10.7	183,000	8.5	3,300	9.5
June	342,000	16.4	70.4	69.3	258,000	12.4	168,000	8.1	3,000	8.9
July	358,000	16.6	71.4	68.7	233,000	10.8	178,000	8.3	3,000	8.5
August	346,000	16.1	69.1	65.3	253,000	11.8	172,000	8.0	2,800	8.2
September	365,000	17.5	75.3	70.5	223,000	10.7	165,000	7.9	2,900	8.4
October	355,000	16.4	70.9	71.1	221,000	10.2	180,000	8.4	2,900	8.2
November	324,000	15.5	66.8	68.7	177,000	8.4	176,000	8.4	3,000	9.0
December	342,000	15.8	68.3	70.1	180,000	8.3	191,000	8.8	2,900	8.6
1992:										
January	335,000	15.5	67.0	70.5	112,000	5.2	207,000	9.6	3,200	9.4
February	304,000	15.0	65.1	66.6	165,000	8.1	185,000	9.1	2,900	9.1
March	360,000	16.6	72.0	73.4	145,000	6.7	195,000	9.0	3,200	9.2
April	327,000	15.6	67.7	69.3	175,000	8.4	181,000	8.6	2,800	8.6
May	361,000	16.7	72.3	73.3	231,000	10.7	175,000	8.1	2,800	8.0
June	333,000	15.9	68.9	67.8	256,000	12.2	172,000	8.2	2,700	8.3
July	352,000	16.2	70.5	67.8	228,000	10.5	180,000	8.3	2,800	8.1
August	351,000	16.1	70.3	66.5	242,000	11.2	172,000	7.9	2,700	7.9
September	357,000	17.0	74.0	69.3	226,000	10.7	169,000	8.0	2,700	7.9
October	345,000	15.8	69.1	69.3	221,000	10.2	181,000	8.3	2,900	8.2
November	331,000	15.7	68.5	70.6	173,000	8.2	182,000	8.6	2,700	8.1

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 (1987 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 November 1991 and 1992

[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 November			
	1992		1991	
	Number	Rate	Number	Rate
New England	1,930	16.6	1,343	7.0
Maine	91	6.1	104	6.4
New Hampshire	92	5.9	99	6.1
Vermont	49	6.6	46	5.8
Massachusetts	568	6.4	634	7.2
Rhode Island	130	8.9	97	6.6
Connecticut	---	---	363	7.5
Middle Atlantic	4,804	8.4	5,353	9.2
New York	2,371	8.3	2,762	9.4
New Jersey	1,005	8.4	1,022	8.5
Pennsylvania	1,428	8.7	1,569	9.3
East North Central	6,155	9.4	6,426	9.7
Ohio	1,466	8.7	1,507	9.5
Indiana	779	9.3	804	9.5
Illinois	1,953	10.1	1,990	10.3
Michigan	1,447	10.4	1,549	10.0
Wisconsin	510	7.2	576	8.0
West North Central	2,117	8.0	2,277	8.7
Minnesota	459	7.0	491	7.4
Iowa	290	7.5	281	7.7
Missouri	699	9.0	806	10.4
North Dakota	73	8.2	82	9.0
South Dakota	115	10.3	93	8.5
Nebraska	165	7.2	183	7.6
Kansas	316	8.3	341	9.2
South Atlantic	6,580	9.6	7,051	10.3
Delaware	102	9.4	145	13.1
Maryland	708	8.9	693	8.4
District of Columbia	193	19.5	204	20.0
Virginia	843	8.5	953	9.8
West Virginia	203	9.2	204	9.1
North Carolina	1,032	10.1	1,138	11.1
South Carolina	622	10.8	592	10.3
Georgia	1,171	10.4	1,331	12.1
Florida	1,706	8.9	1,791	9.3
East South Central	2,355	10.1	2,380	10.1
Kentucky	453	8.4	465	8.4
Tennessee	718	9.7	721	10.0
Alabama	678	10.8	695	10.8
Mississippi	506	11.8	499	11.5
West South Central	3,952	8.2	4,105	8.5
Arkansas	334	9.5	369	10.6
Louisiana	687	9.5	744	10.1
Oklahoma	427	9.0	470	9.9
Texas ²	2,504	7.6	2,522	7.8
Mountain	1,864	7.6	1,937	8.0
Montana	102	8.8	91	7.8
Idaho	128	7.4	153	8.9
Wyoming	59	8.6	49	7.2
Colorado	389	7.2	456	8.3
New Mexico	246	8.7	242	8.6
Arizona	582	8.7	571	8.5
Utah	228	6.1	214	6.1
Nevada	130	5.8	161	7.5
Pacific	14,715	16.9	5,938	7.8
Washington	---	---	562	7.5
Oregon	310	7.3	317	7.4
California ³	4,166	6.9	4,835	7.9
Alaska	103	8.8	93	8.2
Hawaii	136	6.7	131	6.6

¹Excludes figures for State(s) 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.

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, October 1991 and 1992, cumulative figures 1991 and 1992, and 12 months ending with October 1991 and 1992—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	October				January–October				12 months ending with October			
	1992		1991		1992		1991		1992		1991	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Black female												
All ages	10,410	722.8	9,670	681.0	102,430	727.7	99,760	721.2	122,940	728.5	118,180	712.2
Under 1 year					4,180	² 1,481.3	4,180	² 1,516.6	5,060	² 1,510.4	4,960	² 1,507.6
1–4 years	620	165.0	600	162.9	730	70.8	870	87.5	840	68.9	980	83.1
5–14 years					580	24.5	600	25.8	770	27.2	700	25.1
15–24 years	170	74.8	190	83.5	1,670	74.8	1,690	74.8	2,050	76.5	1,950	72.8
25–34 years	390	156.4	440	174.8	3,750	152.9	3,750	152.7	4,400	149.1	4,520	152.5
35–44 years	640	302.6	650	317.4	6,660	324.2	5,900	298.4	7,940	322.5	6,850	289.0
45–54 years	890	658.0	920	708.0	7,840	597.9	7,430	591.1	9,290	592.5	8,640	572.9
55–64 years	1,440	1,410.9	1,210	1,194.2	13,780	1,376.9	13,120	1,323.1	16,510	1,377.0	15,860	1,332.8
65–74 years	2,100	2,596.2	1,880	2,359.9	20,720	2,617.8	21,380	2,756.2	25,010	2,638.2	25,100	2,698.9
75–84 years	2,290	5,484.1	2,180	5,281.4	23,400	5,728.0	23,070	5,746.8	28,190	5,753.1	27,640	5,746.4
85 years and over	1,860	11,437.5	1,600	10,294.4	19,070	12,157.6	17,750	11,869.7	22,800	12,127.7	20,960	11,709.5
Not stated	10	...	—	...	60	...	20	...	80	...	20	...
Age-adjusted rate ³ . . . . .	...	558.3	...	535.1	...	555.5	...	554.9	...	556.5	...	548.0

¹Includes races other than white and black.

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

³For method of computation, see Technical notes.

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. Data include adjustments for Maryland, which is not included in the sample for July–October 1992.

Atherosclerosis . . . . .	.440	1,470	6.7	1,480	6.9	13,440	6.3	14,230	6.8	16,250	6.4	17,080	6.8
Other diseases of arteries, arterioles, and capillaries . . . . .	.441-448	2,110	9.7	2,060	9.5	20,080	9.4	20,510	9.7	24,420	9.5	25,010	9.9
Acute bronchitis and bronchiolitis . . . . .	.466	50	*	70	*	410	0.2	500	0.2	490	0.2	530	0.2
Pneumonia and influenza . . . . .	.480-487	5,730	26.3	5,530	25.6	64,300	30.2	61,980	29.4	77,240	30.2	74,310	29.4
Pneumonia . . . . .	.480-486	5,720	26.3	5,520	25.6	63,180	29.6	61,420	29.1	75,690	29.6	73,660	29.1
Influenza . . . . .	.487	10	*	10	*	1,120	0.5	560	0.3	1,550	0.6	640	0.3
Chronic obstructive pulmonary diseases and allied conditions . . . . .	.490-496	6,840	31.4	6,450	29.9	76,210	35.7	74,000	35.1	90,970	35.6	87,560	34.6
Bronchitis, chronic and unspecified . . . . .	.490-491	270	1.2	200	0.9	3,250	1.5	3,080	1.5	3,910	1.5	3,590	1.4
Emphysema . . . . .	.492	1,350	6.2	1,090	5.0	13,930	6.5	13,390	6.3	17,060	6.7	15,730	6.2
Asthma . . . . .	.493	300	1.4	290	1.3	3,950	1.9	3,700	1.8	4,760	1.9	4,350	1.7
Other chronic obstructive pulmonary diseases and allied conditions . . . . .	.494-496	4,930	22.6	4,870	22.5	55,080	25.8	53,820	25.5	65,250	25.5	63,880	25.3
Ulcer of stomach and duodenum . . . . .	.531-533	420	1.9	450	2.1	4,890	2.3	5,120	2.4	5,890	2.3	6,040	2.4
Appendicitis . . . . .	.540-543	-	*	40	*	270	0.1	420	0.2	320	0.1	460	0.2
Hernia of abdominal cavity and intestinal obstruction without mention of hernia . . . . .	.550-553,560	560	2.6	470	2.2	4,840	2.3	4,840	2.3	5,790	2.3	5,720	2.3
Chronic liver disease and cirrhosis . . . . .	.571	2,010	9.2	2,060	9.5	20,700	9.7	20,490	9.7	24,900	9.7	24,870	9.8
Cholelithiasis and other disorders of gallbladder . . . . .	.574-575	250	1.1	250	1.2	2,590	1.2	2,590	1.2	3,020	1.2	3,130	1.2
Nephritis and nephrotic syndrome, and nephrosis . . . . .	.580-589	1,930	8.9	1,950	9.0	19,030	8.9	18,580	8.8	23,330	9.1	22,090	8.7
Acute glomerulonephritis and nephrotic syndrome . . . . .	.580-581	20	*	-	*	250	0.1	230	0.1	320	0.1	260	0.1
Chronic glomerulonephritis, nephritis and nephropathy, not specified as acute or chronic, and renal sclerosis, unspecified . . . . .	.582-583,587	130	0.6	100	*	1,220	0.6	1,130	0.5	1,550	0.6	1,380	0.5
Renal failure, disorders resulting from impaired renal function, and small kidney of unknown cause . . . . .	.584-586,588-589	1,780	8.2	1,850	8.6	17,560	8.2	17,210	8.2	21,460	8.4	20,450	8.1
Infections of kidney . . . . .	.590	80	*	70	*	920	0.4	1,030	0.5	1,140	0.4	1,160	0.5
Hyperplasia of prostate . . . . .	.600	40	*	20	*	300	0.1	300	0.1	340	0.1	340	0.1
Complications of pregnancy, childbirth, and the puerperium . . . . .	.630-676	30	*	30	*	200	0.1	230	0.1	270	0.1	290	0.1
Pregnancy with abortive outcome . . . . .	.630-638	10	*	-	*	30	*	60	*	30	*	60	*
Other complications of pregnancy, childbirth, and the puerperium . . . . .	.640-676	20	*	30	*	170	0.1	170	0.1	240	0.1	230	0.1
Congenital anomalies . . . . .	.740-759	960	4.4	940	4.3	10,440	4.9	9,930	4.7	12,290	4.8	12,050	4.8
Certain conditions originating in the perinatal period . . . . .	.760-779	1,480	6.8	1,360	6.3	13,150	6.2	14,130	6.7	15,560	6.1	17,030	6.7
Birth trauma, intrauterine hypoxia, birth asphyxia, and respiratory distress syndrome . . . . .	.767-769	340	1.6	300	1.4	2,720	1.3	2,910	1.4	3,060	1.2	3,540	1.4
Other conditions originating in the perinatal period . . . . .	.760-766,770-779	1,140	5.2	1,060	4.9	10,430	4.9	11,210	5.3	12,510	4.9	13,490	5.3
Symptoms, signs, and ill-defined conditions . . . . .	.780-799	3,070	14.1	3,110	14.4	29,750	13.9	28,530	13.5	36,310	14.2	34,350	13.6
All other diseases . . . . .	.Residual	14,690	67.5	14,520	67.2	148,280	69.5	144,830	68.7	179,640	70.2	174,020	68.8
Accidents and adverse effects . . . . .	.E800-E949	7,610	34.9	7,980	36.9	71,270	33.4	74,830	35.5	85,330	33.4	89,530	35.4
Motor vehicle accidents . . . . .	.E810-E825	3,930	18.0	4,180	19.3	34,490	16.2	37,120	17.6	41,350	16.2	44,900	17.8
All other accidents and adverse effects . . . . .	.E800-E807,E826-E949	3,680	16.9	3,800	17.6	36,780	17.2	37,710	17.9	43,980	17.2	44,630	17.6
Suicide . . . . .	.E950-E959	2,210	10.1	2,260	10.5	24,200	11.3	24,390	11.6	28,900	11.3	28,500	11.3
Homicide and legal intervention . . . . .	.E960-E978	2,020	9.3	2,270	10.5	21,680	10.2	21,800	10.3	26,090	10.2	25,490	10.1
All other external causes . . . . .	.E980-E999	170	0.8	200	0.9	1,750	0.8	1,620	0.8	2,040	0.8	1,990	0.8
Human immunodeficiency virus infection ²	*042-*044	2,720	12.5	2,990	13.8	26,470	12.4	24,090	11.4	31,210	12.2	28,290	11.2

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. Data include adjustments for Maryland, which is not included in the sample for July-October 1992.

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, October 1991 and 1992, cumulative figures 1991 and 1992, and 12 months ending with October 1991 and 1992

[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)	October		January–October				12 months ending with October						
	1992		1991		1992		1991		1992		1991		
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues ¹	140–208	44,350	203.7	44,170	204.5	434,150	203.5	429,930	203.9	520,470	203.5	512,620	202.7
Malignant neoplasm of esophagus. . . . .	.150	850	3.9	650	3.0	8,920	4.2	8,330	3.9	10,440	4.1	9,800	3.9
Malignant neoplasm of stomach . . . . .	.151	1,070	4.9	1,190	5.5	11,030	5.2	12,020	5.7	13,410	5.2	14,240	5.6
Malignant neoplasms of colon, rectum, rectosigmoid junction, and anus . . . . .	.153,154	4,570	21.0	4,950	22.9	47,530	22.3	46,160	21.9	57,010	22.3	55,730	22.0
Malignant neoplasm of pancreas. . . . .	.157	2,220	10.2	1,990	9.2	21,430	10.0	21,250	10.1	25,640	10.0	25,560	10.1
Malignant neoplasms of trachea, bronchus, and lung . . . . .	.162	12,560	57.7	12,310	57.0	122,020	57.2	118,620	56.3	146,680	57.3	141,370	55.9
Malignant melanoma of skin. . . . .	.172	690	3.2	610	2.8	5,890	2.8	5,990	2.8	6,960	2.7	6,850	2.7
Malignant neoplasm of cervix uteri. . . . .	.180	350	1.6	390	1.8	3,590	1.7	3,930	1.9	4,310	1.7	4,680	1.9
Malignant neoplasms of body of uterus and of uterus, part unspecified . . . . .	.179,182	510	2.3	510	2.4	5,470	2.6	4,850	2.3	6,320	2.5	5,710	2.3
Malignant neoplasm of ovary . . . . .	.183.0	1,050	4.8	1,190	5.5	10,360	4.9	11,060	5.2	12,390	4.8	12,930	5.1
Malignant neoplasm of prostate . . . . .	.185	3,280	15.1	3,000	13.9	28,360	13.3	28,280	13.4	34,000	13.3	33,710	13.3
Malignant neoplasm of bladder . . . . .	.188	750	3.4	820	3.8	9,180	4.3	8,590	4.1	10,900	4.3	10,260	4.1
Malignant neoplasms of kidney and other and unspecified urinary organs . . . . .	.189	970	4.5	820	3.8	9,430	4.4	8,910	4.2	11,130	4.4	10,600	4.2
Malignant neoplasms of brain and other and unspecified parts of nervous system . . . . .	.191,192	900	4.1	940	4.3	8,640	4.0	9,340	4.4	10,790	4.2	11,050	4.4
Hodgkin's disease. . . . .	.201	150	0.7	170	0.8	1,370	0.6	1,410	0.7	1,710	0.7	1,680	0.7
Malignant lymphoma other than Hodgkin's disease . . . . .	.200,202	1,910	8.8	1,640	7.6	17,390	8.1	16,790	8.0	20,970	8.2	20,090	7.9
Multiple myeloma and other immunoproliferative neoplasms. . . . .	.203	840	3.8	740	3.4	7,970	3.7	7,700	3.6	9,680	3.8	9,170	3.6

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. Data include adjustments for Maryland, which is not included in the sample for July–October 1992.

Table 8. Provisional number of deaths under 1 year and infant mortality rates, by age and for 10 selected causes: United States, October 1991 and 1992, cumulative figures 1991 and 1992, and 12 months ending with October 1991 and 1992

[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)	October		January–October				12 months ending with October						
	1992		1991		1992		1991		1992		1991		
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	
Total, under 1 year	2,900	822.3	2,900	818.7	28,800	847.5	30,600	889.9	34,700	854.7	36,800	894.0	
Under 28 days	1,880	538.3	1,860	519.9	18,420	541.6	19,250	560.5	21,850	537.8	23,200	564.2	
28 days to 11 months	990	283.4	1,070	299.1	10,400	305.8	11,320	329.6	12,880	317.0	13,570	330.0	
Certain gastrointestinal diseases. . . . .	.008–009,535,555–558	10	*	10	*	300	8.8	270	7.9	360	8.9	300	7.3
Pneumonia and influenza. . . . .	.480–487	70	*	10	*	550	16.2	520	15.1	650	16.0	640	15.6
Congenital anomalies . . . . .	.740–759	600	171.8	580	162.1	6,320	185.8	6,460	188.1	7,450	183.4	7,830	190.4
Disorders relating to short gestation and unspecified low birthweight. . . . .	.765	380	108.8	400	111.8	3,170	93.2	3,910	113.8	3,740	92.0	4,610	112.1
Birth trauma . . . . .	.767	20	*	10	*	160	4.7	120	3.5	200	4.9	150	3.6
Intrauterine hypoxia and birth asphyxia . . . . .	.768	90	*	70	*	560	16.5	660	19.2	630	15.5	740	18.0
Respiratory distress syndrome. . . . .	.769	220	63.0	210	58.7	1,940	57.0	2,090	60.8	2,160	53.2	2,600	63.2
Other conditions originating in the perinatal period . . . . .	.760–764,766,770–779	750	214.7	660	184.5	7,110	209.0	7,220	210.2	8,570	210.9	8,680	211.1
Sudden infant death syndrome . . . . .	.798.0	360	103.1	420	117.4	3,320	97.6	3,520	102.5	4,220	103.9	4,410	107.2
All other causes. . . . .	.Residual	370	105.9	560	156.5	5,380	158.2	5,800	168.9	6,750	166.1	6,820	165.9

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. Data include adjustments for Maryland, which is not included in the sample for July–October 1992.

Technical notes

Nature and sources of data

Data in this report are provisional unless otherwise specified 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. Before 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. Before 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 to the standard population distributed by age. Age groups shown in table 5 were used to compute the age-adjusted rates shown in that table. The age-adjusted rates upon which the State maps are based were computed from age-specific rates in 10-year age groups. In both instances 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. 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.

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 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 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 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:

$$Y(t) = A_0 + A_1t + A_2t^2 + C \cos (2\pi t / 12) + S \sin (2\pi t / 12) + \epsilon_t$$

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 before the latest month shown in the chart. The graph of the estimated equation and 95-percent prediction intervals is shown from January 1985 through the month that is 12 months before 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.

State Maps

Unlike other data presented in this report, the State maps are based on final instead of provisional data. The age-adjusted death rates used to produce the State maps were computed by using a 3-year total number of deaths for 1987-89 and the 1988 population estimated as of July 1, 1988 (5). The assignment of the States into the given shadings on the maps was carried out in two steps: a) determining whether the State age-adjusted death rate differed significantly from the corresponding U.S. rate at the .05 level of significance; b) then grouping the State rates found to be significantly different from the U.S. rate into the four categories: 10 highest State rates of those significantly greater than the U.S. rate, remaining State rates significantly greater than the U.S. rate, 10 lowest State rates of those significantly lower than the U.S. rate, and remaining State rates significantly lower than the U.S. rate. Age-adjusted death rates and the corresponding 95-percent

confidence intervals are shown in the table. The symbols “+” and “++” shown in the table are used to denote State rates that differ significantly from the U.S. rate at the .05 and .01 levels of significance, respectively. Different procedures were used to determine tests of statistical significance and confidence intervals, depending upon the number of deaths.

For 50 or more deaths, the standard normal Z statistic was used to perform the significance test:

$$Z = (R'_s - R'_{us}) / \sqrt{S^2(R'_s) + S^2(R'_{us})}$$

where

R'_s = age-adjusted rate for 1987-89 for the given State per 100,000 population

R'_{us} = age-adjusted rate for 1987-89 for the U.S. per 100,000 population

$S^2(R'_s)$ = estimated variance of the age-adjusted death rate for 1987-89 for the State

$S^2(R'_{us})$ = estimated variance of the age-adjusted death rate for 1987-89 for the U.S.

The variance of the age-adjusted death rate was computed in terms of the variances of age-specific death rates (6) under the assumption that the age-specific death rates are binomial proportions (7). The 95-percent confidence limits were estimated as follows:

$$\text{Lower limit} = R'_s - 1.96 \cdot S(R'_s)$$

and

$$\text{Upper limit} = R'_s + 1.96 \cdot S(R'_s)$$

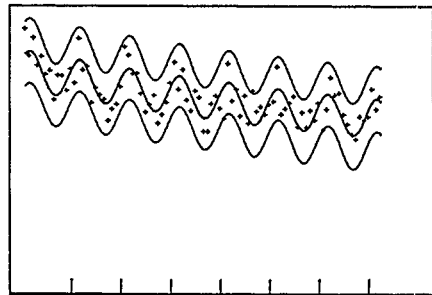
For 1-49 deaths, the lower and upper 95-percent confidence limits were estimated as described elsewhere (8). The difference between the State and U.S. age-adjusted rates was determined to be statistically significant at the .05 or .01 level if their respective 95-percent or 99-percent confidence limits did not overlap.

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Mortality Surveillance System chart topics

<i>MVSR issue</i>	<i>Cause-of-death chart topics</i>
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Vol. 41 No. 1	Human immunodeficiency virus infection
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Vol. 41 No. 3	Chronic obstructive pulmonary diseases and allied conditions
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