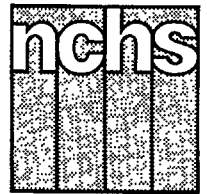


# Monthly Vital Statistics Report



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

## Births, Marriages, Divorces, and Deaths for July 1993

### Mortality Surveillance System

pages 4-7

### Malignant neoplasms of trachea, bronchus, and lung:

65 years and over by sex and race

### State Maps

pages 8 and 9

### Malignant neoplasms of respiratory and intrathoracic organs by sex

Due to the availability of population estimates that are based on the results of the 1990 census enumeration, provisional rates for 1992 have been recomputed to permit a valid comparison with the 1993 provisional rates. Provisional birth, marriage, divorce, and death rates, along with estimated death rates based on the Current Mortality Sample for 1992 have been recomputed, using revised population estimates based on the 1990 enumerated population. Therefore, all rates shown for 1992 are comparable with those for 1993.

United States during July 1993. This was a 1-percent increase from the provisional number reported for the same month of the previous year (352,000). The birth rate, 16.3 live births per 1,000 population, was the same as the rate for July 1992. The fertility rate, 71.2 live births per 1,000 women aged 15-44 years, was 1 percent higher than the comparable rate for July 1992 (70.5). The seasonally adjusted fertility rate (68.4) was also 1 percent higher than the comparable rate for July 1992 (67.8).

### Births

According to provisional reports, an estimated 357,000 births occurred in the

During the first 7 months of 1993, an estimated 2,333,000 births occurred, a 2-percent decrease from the 2,375,000 reported for the first 7 months of 1992. The birth rate declined by 3 percent from

### Provisional Vital Statistics for the United States

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

Item	July		January-July				12 months ending with July					
	Number		Rate		Number		Rate		Number		Rate	
	1993	1992	1993	1992	1993	1992	1993	1992	1993	1992	1993	1992
Live births . . . . .	357,000	352,000	16.3	16.3	2,333,000	2,375,000	15.6	16.0	4,043,000	4,107,000	15.7	16.2
Fertility rate . . . . .			71.2	70.5			68.0	69.2			68.5	69.6
Deaths . . . . .	184,000	180,000	8.4	8.3	1,344,000	1,294,000	9.0	8.7	2,227,000	2,179,000	8.7	8.6
Infant deaths . . . . .	2,800	2,800	7.8	8.1	19,900	20,500	8.5	8.6	33,800	35,000	8.4	8.6
Natural increase . . . . .	173,000	172,000	7.9	8.0	989,000	1,081,000	6.6	7.3	1,816,000	1,928,000	7.0	7.6
Marriages . . . . .	236,000	228,000	10.8	10.5	1,295,000	1,313,000	8.7	8.8	2,343,000	2,368,000	9.1	9.3
Divorces . . . . .	103,000	109,000	4.7	5.1	697,000	715,000	4.7	4.8	1,196,000	1,206,000	4.7	4.7
Population base (in millions) . . . . .			257.9	255.1							256.7	253.9

NOTE: Figures include all revisions received from the States. Twelve-month figures for the current year reflect revisions received for previous months, and figures for earlier years may differ from those previously published. Rates for 1992 (except infant mortality) have been recomputed based on revised population estimates; see Technical notes.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Public Health Service  
Centers for Disease Control and Prevention  
National Center for Health Statistics



16.0 in 1992 to 15.6 in 1993. The fertility rate for the first 7 months of 1993 was 68.0, 2 percent lower than the rate for the same period of 1992 (69.2).

An estimated 4,043,000 live births occurred in the 12-month period ending with July 1993, a decline of 2 percent from the 4,107,000 births reported for the same period a year earlier. The birth rate of 15.7 was 3 percent lower than the rate of 16.2 for the preceding 12 months. The fertility rate for the most recent 12-month period was 68.5, 2 percent lower than the rate for the 12 months ending with July 1992 (69.6). 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 173,000 people, or 7.9 persons per 1,000 population, were added to the population during July 1993.

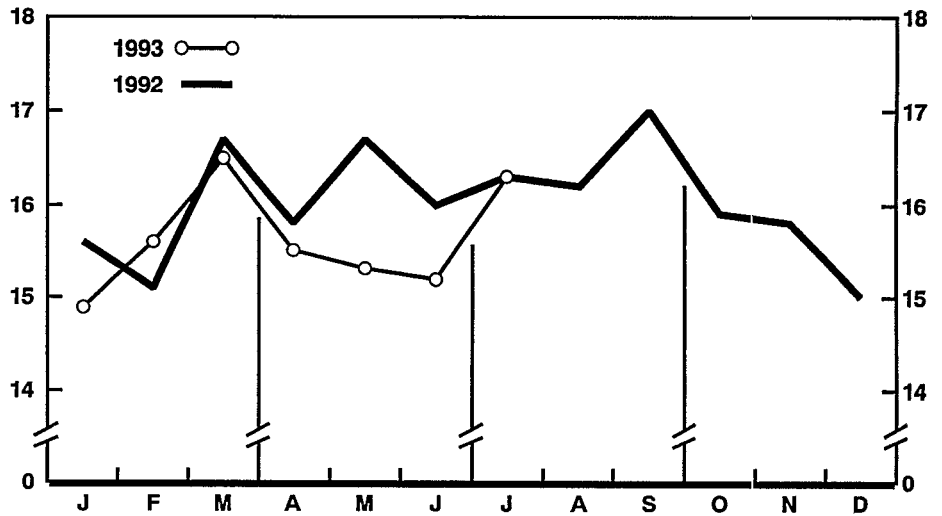
For the 12-month period ending with July 1993, 1,816,000 persons were added to the population. This represents a rate of natural increase of 7.0, 8 percent lower than the rate of 7.6 for the preceding 12-month period. The decline in the rate of natural increase is due to a decrease in the birth rate and a rise in the death rate.

**Marriages**

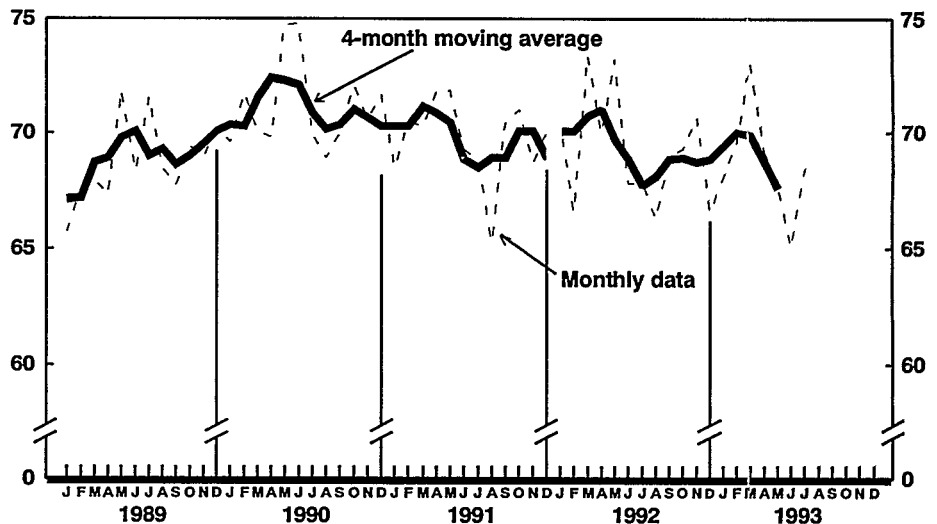
The estimated number of marriages performed in July 1993 was 236,000, a 4-percent increase over the number for July a year ago (228,000). The marriage rate for July 1993 (10.8 per 1,000 population) was 3 percent higher than for the same month of the previous year (10.5).

Despite the increase in the number of marriages for July, the cumulative number of marriages for January–July was 1 percent lower in 1993 (1,295,000) than the cumulative number of marriages in 1992 (1,313,000). The marriage rate for the 7-month period was 1 percent lower in 1993 (8.7) than in 1992 (8.8).

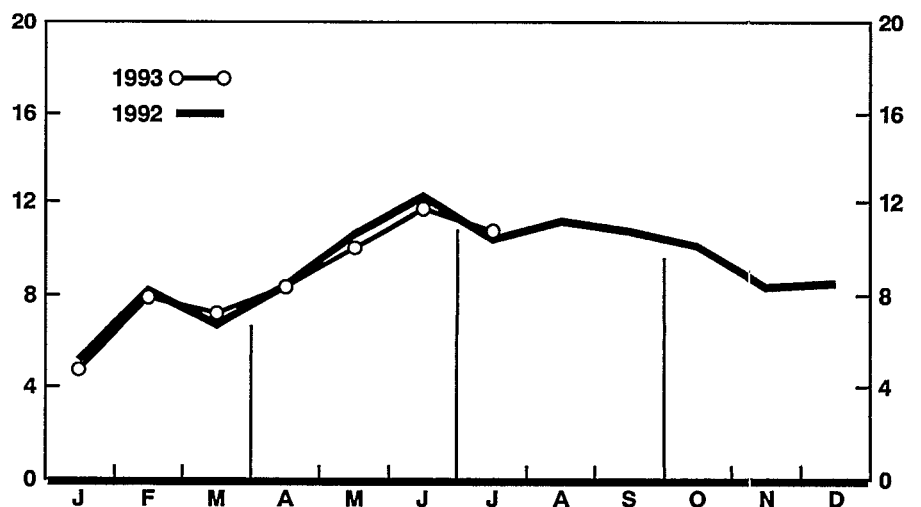
There were 2,343,000 marriages performed during the 12 months ending with July 1993, 1 percent fewer than for the same period a year earlier (2,368,000). The marriage rate for the most recent 12-month period (9.1) was 2 percent lower than the rate for the 12 months ending with July 1992 (9.3).



Provisional birth rates per 1,000 population by month: United States, 1992-93



Provisional seasonally adjusted fertility rates per 1,000 women aged 15-44 years: United States, 1989-93



Provisional marriage rates per 1,000 population by month: United States, 1992-93

### Divorces

The provisional number of divorces granted in July 1993 totaled 103,000, compared with 109,000 in July 1992. The divorce rate per 1,000 population for the month dropped from 5.1 in 1992 to 4.7 in 1993.

For the first 7 months of 1993 there were 697,000 divorces granted, 3 percent fewer than for the same period of the previous year (715,000). The divorce rate for the 7-month period dropped 2 percent, from 4.8 in 1992 to 4.7 in 1993.

For the 12 months ending with July 1993 an estimated 1,196,000 divorces were granted, 10,000 fewer than for the same period a year earlier (1,206,000). Despite the drop in the number, the divorce rate for the 12-month period was 4.7 for both years.

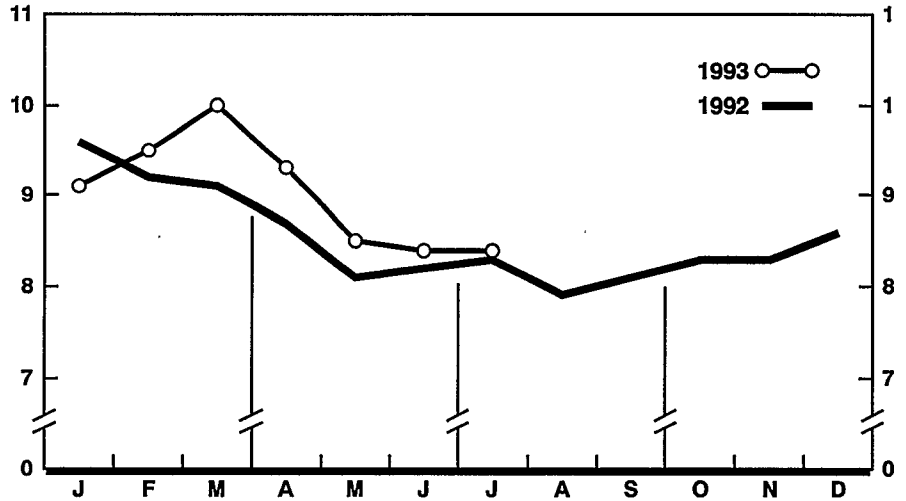
### Deaths

For July 1993 there were an estimated 184,000 deaths in the United States. The death rate was 8.4 deaths per 1,000 population, 1 percent higher than the rate for July a year earlier. Among the 184,000 deaths for July 1993 were 2,800 deaths at ages under 1 year.

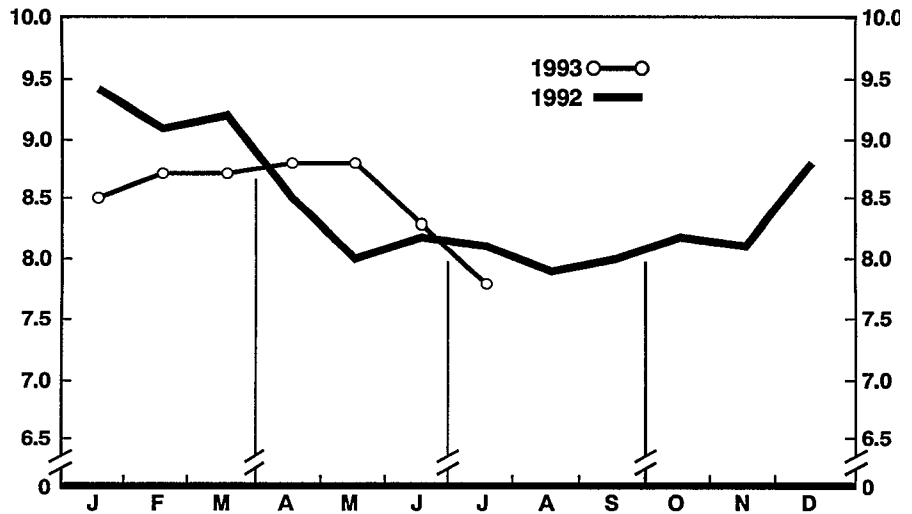
According to provisional statistics there were 1,344,000 deaths during the first 7 months of 1993, 4 percent higher than the number estimated for January–July 1992 (1,294,000). The death rate, 9.0 per 1,000 population, was 3 percent higher than the January–July 1992 rate of 8.7. Among the 1,344,000 deaths for the first 7 months of 1993 were 19,900 deaths at ages under 1 year, yielding an infant mortality rate of 8.5 per 1,000 live births, compared with a rate of 8.6 for the first 7 months of 1992. The change in the infant mortality rate was not statistically significant.

The death rate for the 12 months ending with July 1993 was 8.7 deaths per 1,000 population, 1 percent higher than the rate of 8.6 for the comparable 12-month period a year earlier. The infant mortality rate for this 12-month period was 8.4 per 1,000 live births, 2 percent lower than the rate of 8.6 for the 12 months ending with July 1992.

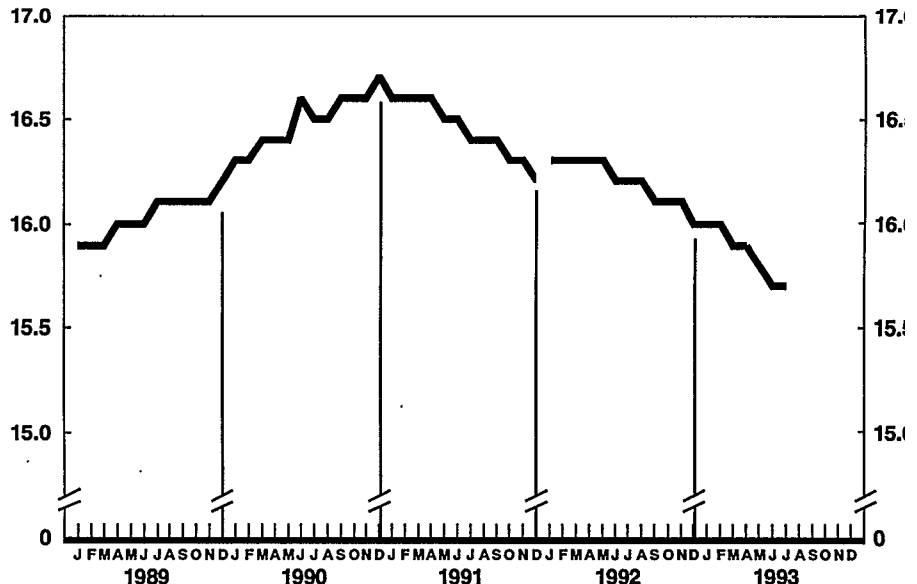
*Current Mortality Sample, 12 months ending with June 1993*—The provisional death rate for the 12 months ending with



Provisional death rates per 1,000 population by month: United States, 1992-93



Provisional infant mortality rates per 1,000 live births by month: United States, 1992-93



Provisional birth rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1989-93

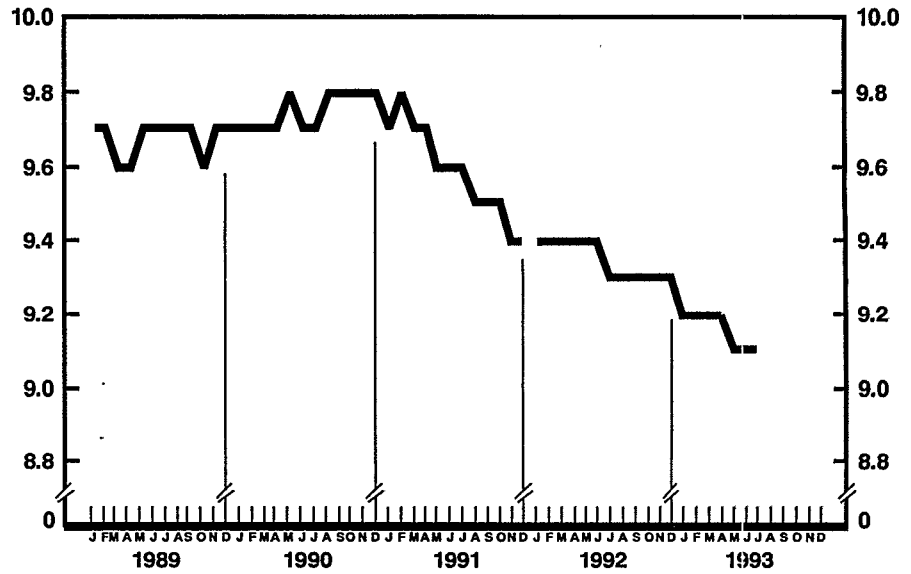
June 1993 was 866.5 deaths per 100,000 population, 1 percent higher than the rate of 858.4 for the 12-month period ending with June 1992. The provisional age-adjusted death rate for the 12-month period ending with June 1993 was 508.6 deaths per 100,000 U.S. standard million population, compared with a rate of 510.0 for the comparable period a year earlier. The change in the age-adjusted death rate was not statistically significant. 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. Among the race-sex groups, the estimated age-adjusted death rates decreased for white males but increased for black females. By age, the death rate for the total population decreased for the age groups 15–24 years and 55–64 years.

Among the major causes of death the estimated death rate increased between the two successive 12-month periods for Chronic obstructive pulmonary diseases and Human immunodeficiency virus infection. The death rate decreased between the two successive 12-month periods for Accidents and adverse effects and Homicide and legal intervention.

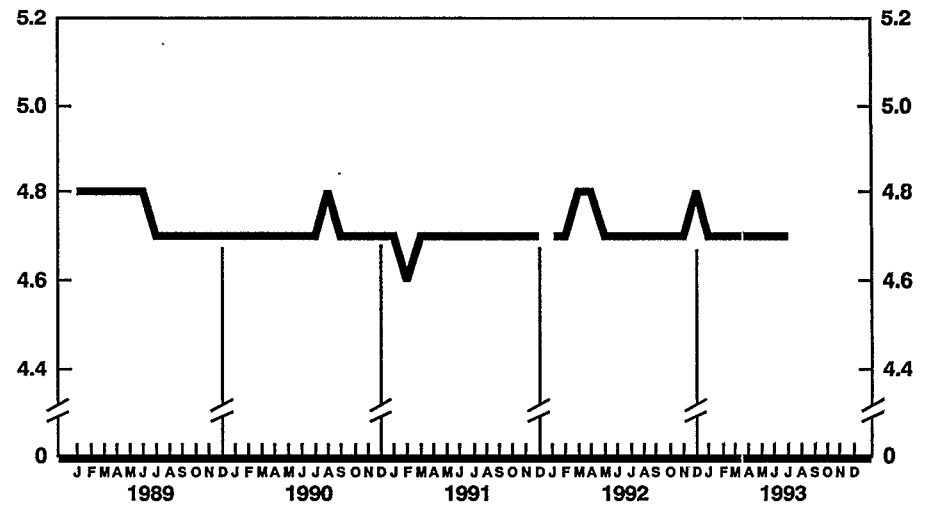
The infant mortality rate for the 12 months ending with June 1993 was 844.6 per 100,000 live births, 2 percent lower than the rate of 862.2 for the same period a year earlier. For infants under 28 days, the 12-month rate ending with June 1993 was 529.3, compared with a rate of 542.1 for the 12-month period a year earlier. The infant mortality rate for infants 28 days to 11 months was 315.2, compared with a rate of 320.0 for the 12-month period a year earlier. The changes in the mortality rate for infants under 28 days and for those 28 days to 11 months were not statistically significant.

### Mortality Surveillance System

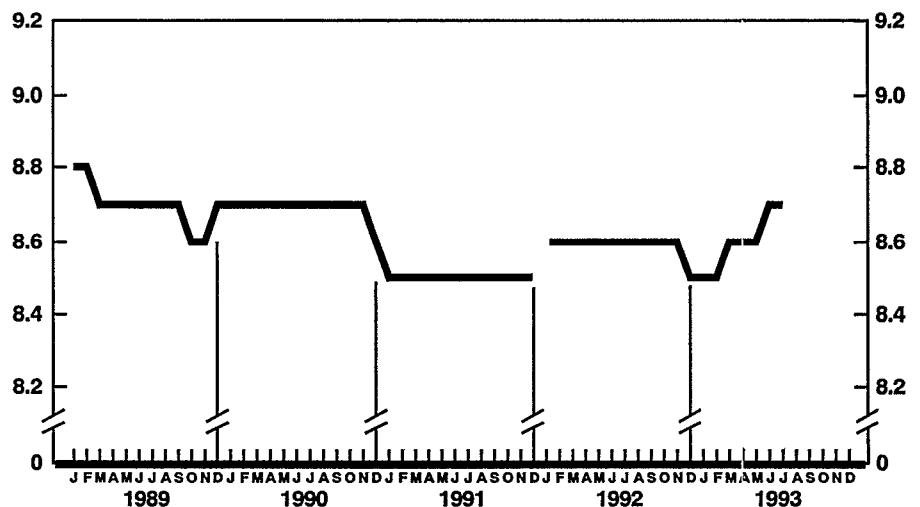
Discussed this month are recent trends in death rates for Malignant neoplasms of trachea, bronchus, and lung for the black and white populations by sex for ages 65 years and over. In this issue, final mortality data are analyzed for data



Provisional marriage rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1989-93



Provisional divorce rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1989-93

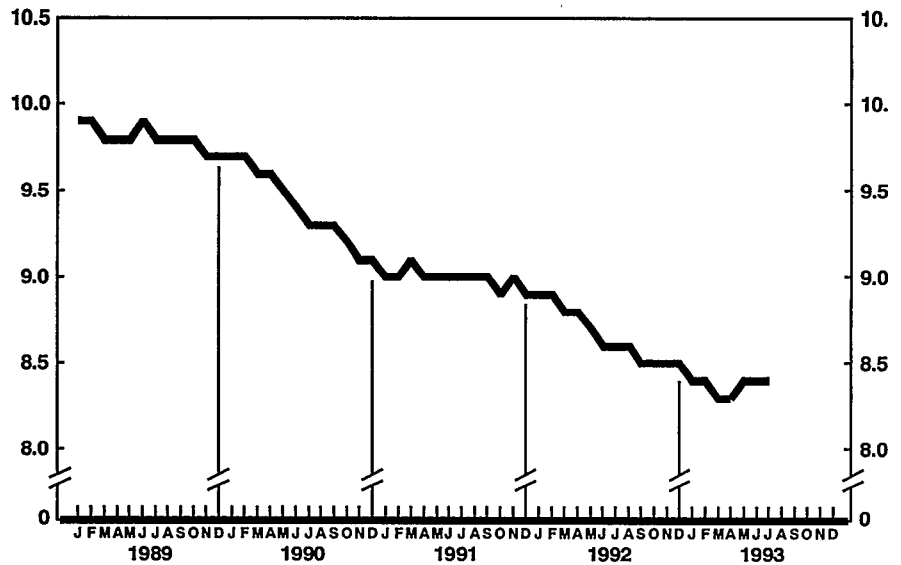


Provisional death rates per 1,000 population for successive 12-month periods ending with month indicated: United States, 1989-93

year 1990 and provisional data from January 1984–December 1992.

In 1990, Malignant neoplasms of trachea, bronchus, and lung, a major cause of cancer mortality, accounted for 92,733 deaths, or 6 percent of all deaths and 27 percent of all cancer mortality for persons aged 65 years and over. Among black women aged 65 years and over, Malignant neoplasms of trachea, bronchus, and lung accounted for 2,397 deaths, or 3 percent of all deaths and 17 percent of all cancer deaths for these women and among white women, 30,238 deaths, or 4 percent of all deaths and 21 percent of all cancer deaths for this age-race-sex group. Among black men aged 65 years and over, Malignant neoplasms of trachea, bronchus, and lung accounted for 5,711 deaths or 9 percent of all deaths and 30 percent of all cancer deaths for these men and among white men, 53,446 deaths or 8 percent of all deaths and 33 percent of all cancer deaths for this age-race-sex group.

Based on 1990 final data, the death rate for Malignant neoplasms of trachea, bronchus, and lung for black men aged 65 years and over was 1.3 times the rate for white men and 3.8 times the rate for black women in this age group; for white women aged 65 years and over, the rate was 1.2 times the rate for black women in this age group. The rate for white men was 2.6 times the rate for white women. Trends based on provisional data for Malignant neoplasms of trachea, bronchus, and lung for these demographic groups are presented in the Mortality Surveillance System charts and accompanying text that follow.

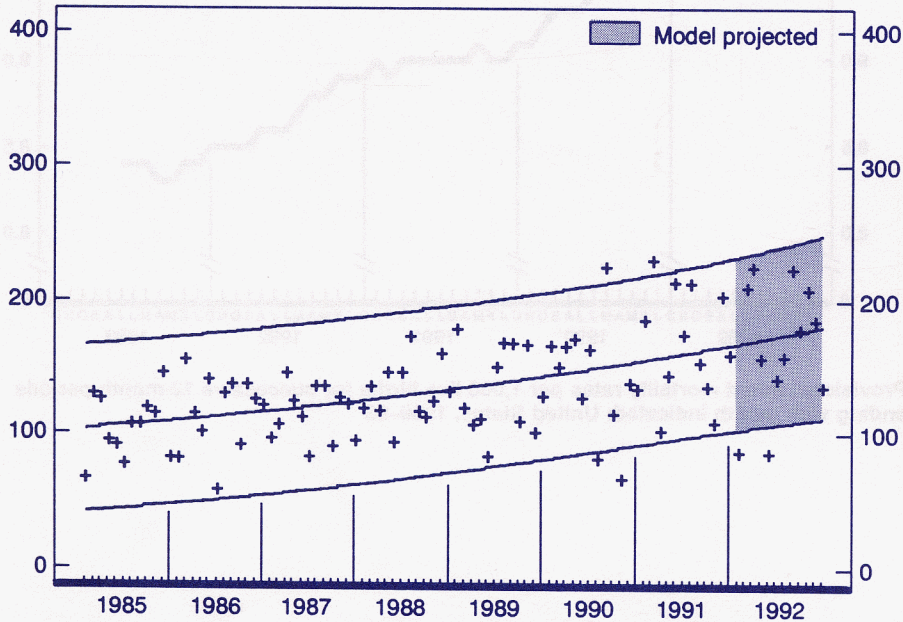


Provisional infant mortality rates per 1,000 live births for successive 12-month periods ending with month indicated: United States, 1989-93

## Mortality Surveillance System charts

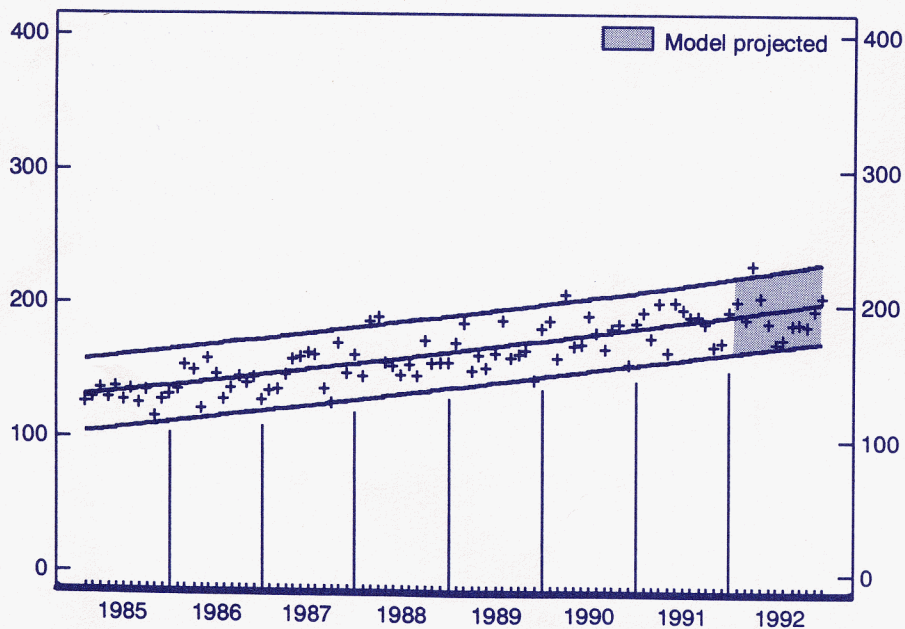
[Observed and fitted provisional monthly death rates and 95-percent prediction intervals. Model fitted using death rates for January 1984–December 1991; projected for January 1992–December 1992. See Technical notes]

Trends in mortality from Malignant neoplasms of trachea, bronchus, and lung are presented in the charts below. Slowing the rise of mortality from lung cancer (excluding trachea and bronchus) is addressed in *Healthy People 2000* (objectives 3.2 and 16.2) (1).



Provisional death rates per 100,000 black females 65 years and over for Malignant neoplasms of trachea, bronchus, and lung by month: United States, 1985–92

- For the modeled period, provisional death rates increased.
- For the projection period, observed provisional monthly death rates, except for 2 months, fell within 95-percent prediction intervals.



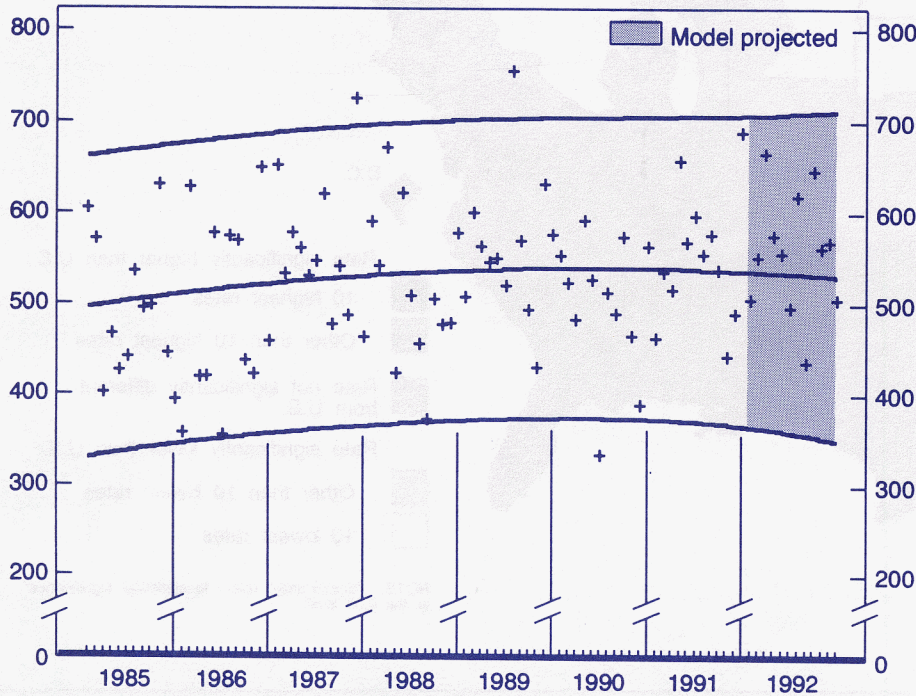
Provisional death rates per 100,000 white females 65 years and over for Malignant neoplasms of trachea, bronchus, and lung by month: United States, 1985–92

- For the modeled period, provisional death rates increased.
- For the projection period, observed provisional monthly death rates, except for 1 month, fell within 95-percent prediction intervals.

### Mortality Surveillance System charts—Con.

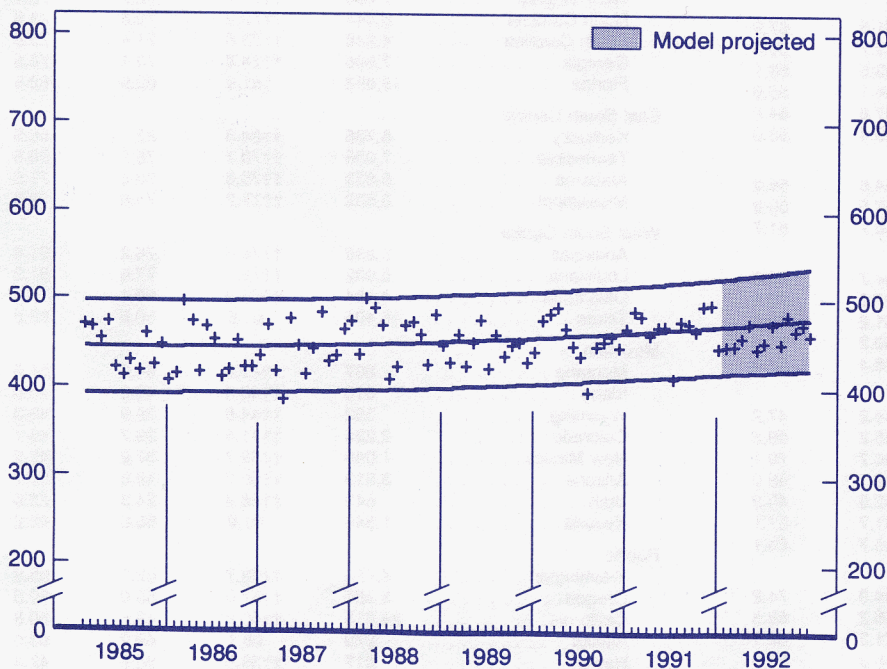
[Observed and fitted provisional monthly death rates and 95-percent prediction intervals. Model fitted using death rates for January 1984–December 1991; projected for January 1992–December 1992. See Technical notes]

Trends in mortality from Malignant neoplasms of trachea, bronchus, and lung are presented in the charts below. Slowing the rise of mortality from lung cancer (excluding trachea and bronchus) is addressed in *Healthy People 2000* (objectives 3.2 and 16.2) (1).



- For the modeled period, provisional death rates increased through 1988 and then leveled off.
- For the projection period, observed provisional monthly death rates fell within 95-percent prediction intervals.

Provisional death rates per 100,000 black males 65 years and over for Malignant neoplasms of trachea, bronchus, and lung by month: United States, 1985–92

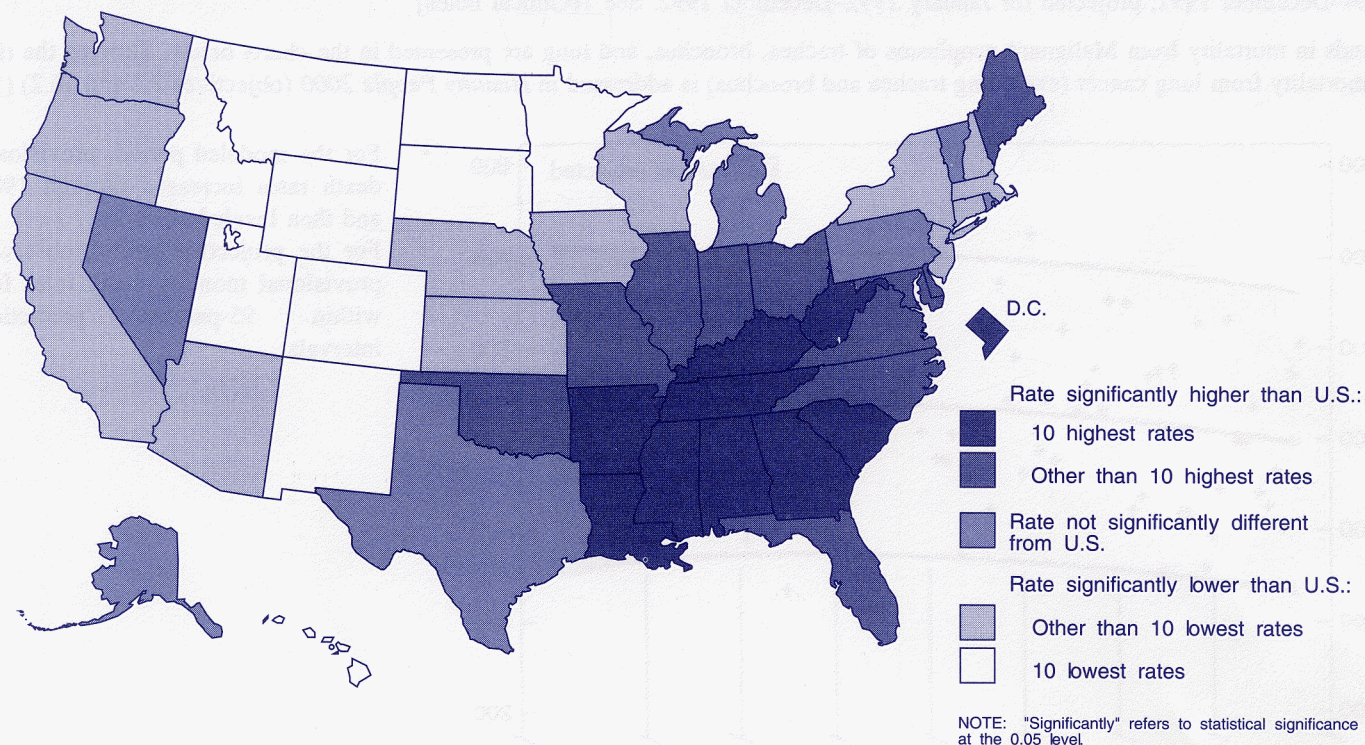


- For the modeled period, provisional death rates increased slightly since 1987.
- For the projection period, observed provisional monthly death rates fell within 95-percent prediction intervals.

Provisional death rates per 100,000 white males 65 years and over for Malignant neoplasms of trachea, bronchus, and lung 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 Malignant neoplasms of respiratory and intrathoracic organs for males: United States and each State, 1988-90**

[Data are final by State of residence]



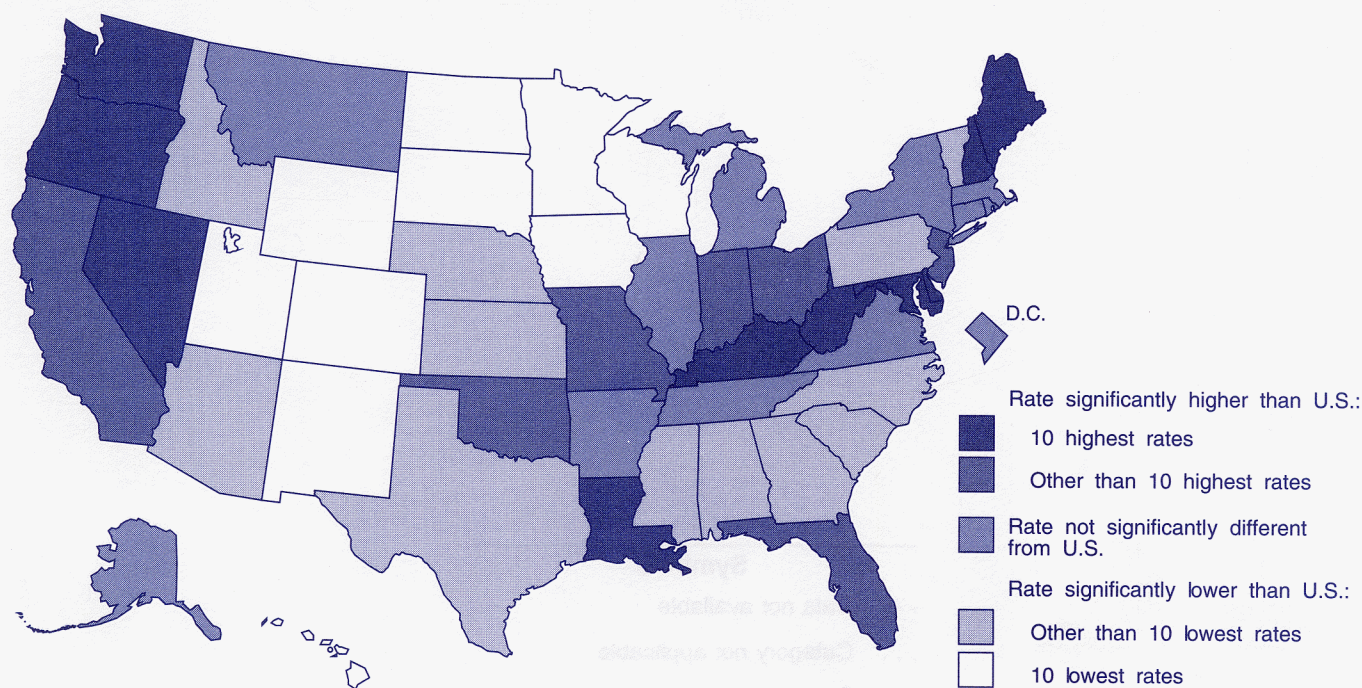
Area	Deaths, 3-year total (final)	Age-adjusted rate (final)	95-percent confidence limits		Area	Deaths, 3-year total (final)	Age-adjusted rate (final)	95-percent confidence limits	
			Lower	Upper				Lower	Upper
United States . . . . .	279,737	60.7	60.5	60.9	South Atlantic—Con.				
New England					West Virginia . . . . .	2,885	††75.2	72.3	78.1
Maine . . . . .	1,571	†64.6	61.3	67.9	North Carolina . . . . .	8,444	††72.2	70.6	73.8
New Hampshire . . . . .	1,072	††56.1	52.7	59.5	South Carolina . . . . .	4,248	††73.6	71.4	75.8
Vermont . . . . .	594	58.3	53.5	63.1	Georgia . . . . .	7,306	††74.8	73.1	76.5
Massachusetts . . . . .	6,424	††55.5	54.1	56.9	Florida . . . . .	19,653	†61.9	60.9	62.9
Rhode Island . . . . .	1,255	61.1	57.6	64.6	East South Central				
Connecticut . . . . .	3,388	††51.2	49.4	53.0	Kentucky . . . . .	5,736	††84.3	82.1	86.5
Middle Atlantic					Tennessee . . . . .	7,056	††78.7	76.8	80.6
New York . . . . .	18,974	††55.4	54.6	56.2	Alabama . . . . .	5,633	††75.6	73.6	77.6
New Jersey . . . . .	9,024	††58.7	57.5	59.9	Mississippi . . . . .	3,532	††77.2	74.6	79.8
Pennsylvania . . . . .	15,533	60.7	59.7	61.7	West South Central				
East North Central					Arkansas . . . . .	3,839	††78.8	76.2	81.4
Ohio . . . . .	13,551	††65.8	64.7	66.9	Louisiana . . . . .	5,532	††79.1	77.0	81.2
Indiana . . . . .	7,052	††68.8	67.2	70.4	Oklahoma . . . . .	4,184	††68.2	66.1	70.3
Illinois . . . . .	13,024	††62.3	61.2	63.4	Texas . . . . .	16,405	61.6	60.6	62.6
Michigan . . . . .	10,155	60.4	59.2	61.6	Mountain				
Wisconsin . . . . .	4,842	††49.9	48.4	51.4	Montana . . . . .	807	††47.6	44.2	51.0
West North Central					Idaho . . . . .	810	††43.4	40.3	46.5
Minnesota . . . . .	3,758	††45.7	44.2	47.2	Wyoming . . . . .	362	††44.6	39.9	49.3
Iowa . . . . .	3,479	††57.2	55.2	59.2	Colorado . . . . .	2,225	††41.4	39.7	43.1
Missouri . . . . .	6,962	††68.4	66.7	70.1	New Mexico . . . . .	1,049	††39.7	37.2	42.2
North Dakota . . . . .	620	††46.0	42.1	49.9	Arizona . . . . .	3,613	††50.0	48.3	51.7
South Dakota . . . . .	679	††45.6	42.0	49.2	Utah . . . . .	643	††26.4	24.3	28.5
Nebraska . . . . .	1,745	††54.4	51.7	57.1	Nevada . . . . .	1,346	61.9	58.6	65.2
Kansas . . . . .	2,873	†57.9	55.7	60.1	Pacific				
South Atlantic					Washington . . . . .	4,776	††53.7	52.1	55.3
Delaware . . . . .	869	††69.5	64.8	74.2	Oregon . . . . .	3,357	††57.0	55.0	59.0
Maryland . . . . .	5,423	††68.0	66.2	69.8	California . . . . .	24,618	††50.2	49.6	50.8
District of Columbia . . . . .	805	††76.7	71.3	82.1	Alaska . . . . .	279	56.1	49.2	63.0
Virginia . . . . .	6,910	††67.9	66.3	69.5	Hawaii . . . . .	817	††39.6	36.8	42.4

NOTE: Data are final. Rates per 100,000 U.S. standard million population; see Technical notes. 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 Malignant neoplasms of respiratory and intrathoracic organs for females: United States and each State, 1988–90**

[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 . . . . .	147,183	25.5	25.4	25.6	South Atlantic—Con.				
<b>New England</b>					West Virginia . . . . .	1,420	††29.1	27.4	30.8
Maine . . . . .	872	††29.6	27.4	31.8	North Carolina . . . . .	3,415	††22.7	21.9	23.5
New Hampshire . . . . .	651	†28.0	25.7	30.3	South Carolina . . . . .	1,700	††22.6	21.5	23.7
Vermont . . . . .	271	†22.1	19.2	25.0	Georgia . . . . .	3,010	††23.5	22.6	24.4
Massachusetts . . . . .	4,006	26.3	25.4	27.2	Florida . . . . .	10,803	††27.8	27.2	28.4
Rhode Island . . . . .	698	25.7	23.5	27.9	<b>East South Central</b>				
Connecticut . . . . .	2,105	25.3	24.1	26.5	Kentucky . . . . .	2,691	††32.0	30.7	33.3
<b>Middle Atlantic</b>					Tennessee . . . . .	2,878	25.5	24.5	26.5
New York . . . . .	11,343	25.0	24.5	25.5	Alabama . . . . .	2,176	††22.2	21.2	23.2
New Jersey . . . . .	5,280	†26.5	25.7	27.3	Mississippi . . . . .	1,410	†23.8	22.4	25.2
Pennsylvania . . . . .	8,067	††23.9	23.3	24.5	<b>West South Central</b>				
<b>East North Central</b>					Arkansas . . . . .	1,604	26.7	25.2	28.2
Ohio . . . . .	7,107	††27.1	26.4	27.8	Louisiana . . . . .	2,587	††28.5	27.3	29.7
Indiana . . . . .	3,468	†26.7	25.7	27.7	Oklahoma . . . . .	2,093	††27.7	26.4	29.0
Illinois . . . . .	6,866	26.0	25.3	26.7	Texas . . . . .	8,196	††24.5	23.9	25.1
Michigan . . . . .	5,376	26.1	25.4	26.8	<b>Mountain</b>				
Wisconsin . . . . .	2,414	††21.2	20.3	22.1	Montana . . . . .	455	24.8	22.3	27.3
<b>West North Central</b>					Idaho . . . . .	450	††22.0	19.8	24.2
Minnesota . . . . .	1,986	††20.5	19.5	21.5	Wyoming . . . . .	195	††20.8	17.7	23.9
Iowa . . . . .	1,537	††20.8	19.6	22.0	Colorado . . . . .	1,264	††19.6	18.5	20.7
Missouri . . . . .	3,402	†26.5	25.5	27.5	New Mexico . . . . .	596	††19.3	17.7	20.9
North Dakota . . . . .	268	††18.5	16.0	21.0	Arizona . . . . .	2,049	††24.0	22.9	25.1
South Dakota . . . . .	310	††18.7	16.3	21.1	Utah . . . . .	281	††10.0	8.7	11.3
Nebraska . . . . .	824	††21.8	20.1	23.5	Nevada . . . . .	816	††34.6	32.1	37.1
Kansas . . . . .	1,349	††22.6	21.2	24.0	<b>Pacific</b>				
<b>South Atlantic</b>					Washington . . . . .	2,987	††28.5	27.4	29.6
Delaware . . . . .	469	††31.4	28.4	34.4	Oregon . . . . .	2,020	††29.7	28.3	31.1
Maryland . . . . .	3,049	††29.7	28.6	30.8	California . . . . .	16,082	††26.8	26.4	27.2
District of Columbia . . . . .	411	27.6	24.7	30.5	Alaska . . . . .	154	28.4	23.9	32.9
Virginia . . . . .	3,342	25.7	24.8	26.6	Hawaii . . . . .	380	††17.0	15.2	18.8

NOTE: Data are final. Rates per 100,000 U.S. standard million population; see Technical notes. 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.

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**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)
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**Monthly Vital Statistics Report • Vol. 42, No. 7 • February 2, 1994**

**Table 1. Provisional number of live births, marriages, deaths, infant deaths, and rates, by month: United States, January 1992–July 199**

[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 aged 15–44 years		Number	Rate per 1,000 population	Number	Rate per 1,000 population	Number	Rate per 1,000 live birth
			Unadjusted	Seasonally adjusted <sup>1</sup>						
<b>1992:</b>										
January	334,000	15.6	66.9	70.4	112,000	5.2	207,000	9.6	3,200	9.4
February	304,000	15.1	65.1	66.6	166,000	8.2	185,000	9.2	2,900	9.1
March	360,000	16.7	72.0	73.4	145,000	6.7	195,000	9.1	3,200	9.2
April	330,000	15.8	68.3	70.0	175,000	8.4	181,000	8.7	2,800	8.5
May	361,000	16.7	72.2	73.2	231,000	10.7	175,000	8.1	2,800	8.0
June	333,000	16.0	68.9	67.8	256,000	12.3	172,000	8.2	2,700	8.2
July	352,000	16.3	70.5	67.8	228,000	10.5	180,000	8.3	2,800	8.1
August	350,000	16.2	70.1	66.3	242,000	11.2	172,000	7.9	2,700	7.9
September	357,000	17.0	73.7	69.0	227,000	10.8	169,000	8.1	2,700	8.0
October	345,000	15.9	69.1	69.3	221,000	10.2	181,000	8.3	2,900	8.2
November	332,000	15.8	68.6	70.7	174,000	8.3	175,000	8.3	2,700	8.1
December	325,000	15.0	65.0	66.6	184,000	8.5	186,000	8.6	2,900	8.8
<b>1993:</b>										
January	325,000	14.9	64.7	68.1	103,000	4.8	198,000	9.1	2,900	8.5
February	308,000	15.6	68.0	69.6	154,000	7.9	187,000	9.5	2,700	8.7
March	360,000	16.5	71.7	73.1	157,000	7.2	217,000	10.0	3,100	8.7
April	328,000	15.5	67.5	69.1	174,000	8.3	196,000	9.3	2,900	8.8
May	335,000	15.3	66.8	67.7	221,000	10.1	185,000	8.5	2,900	8.8
June	321,000	15.2	66.1	65.1	250,000	11.8	178,000	8.4	2,600	8.3
July	357,000	16.3	71.2	68.4	236,000	10.8	184,000	8.4	2,800	7.8

<sup>1</sup>The 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 N 15 (1987 revision).

NOTE: Figures include all revisions received from the States and, therefore, may differ from those previously published. Rates for 1992 (except infant mortality) have been recomputed based on revised population estimates; see Technical notes.

Table 2. Provisional number of live births and deaths: each division and State, July 1992 and 1993, and cumulative figures, 1991-93

[Data are estimates by State of residence; see Technical notes]

Area	Live births					Deaths				
	July		January-July			July		January-July		
	1993	1992	1993	1992	1991	1993	1992	1993	1992	1991
New England	17,002	16,622	105,417	113,648	113,039	9,470	10,054	70,304	68,814	66,059
Maine	1,000	1,480	8,567	9,257	9,457	1,092	900	6,725	6,379	6,512
New Hampshire	1,386	1,278	8,389	9,290	9,579	796	649	5,148	4,775	4,921
Vermont	583	938	4,333	4,685	4,399	358	367	2,947	2,875	2,712
Massachusetts	8,459	7,116	51,503	54,209	54,250	4,282	5,254	33,590	32,733	30,085
Rhode Island	1,338	1,201	8,452	8,560	8,628	825	734	5,822	5,443	5,525
Connecticut	4,236	4,609	24,173	27,647	26,726	2,117	2,150	16,072	16,609	16,304
Middle Atlantic	51,736	50,656	326,126	329,749	336,731	31,147	30,210	222,953	213,114	212,813
New York	28,206	25,786	163,908	167,308	170,908	14,742	14,685	104,057	98,791	99,715
New Jersey	10,548	10,083	68,577	64,942	65,300	5,663	5,294	43,331	41,527	40,812
Pennsylvania	12,982	14,787	93,641	97,499	100,523	10,742	10,231	75,565	72,796	72,286
East North Central	55,464	60,488	383,002	386,106	382,978	30,557	30,342	226,581	218,452	220,983
Ohio	12,824	15,513	94,596	99,827	91,619	7,891	8,569	59,843	58,916	57,990
Indiana	6,901	8,434	48,985	48,947	49,423	4,056	4,071	30,337	29,653	30,976
Illinois	17,455	17,390	110,960	111,139	111,073	8,276	7,659	62,073	59,276	60,621
Michigan	12,189	13,155	86,742	84,170	88,413	6,737	6,514	48,611	46,536	46,782
Wisconsin	6,095	5,996	41,719	42,023	42,450	3,597	3,529	25,717	24,071	24,614
West North Central	21,440	22,376	148,643	153,461	152,179	13,230	12,815	101,399	94,366	94,419
Minnesota	6,094	5,905	37,780	38,555	38,976	2,780	2,722	21,057	20,342	20,349
Iowa	2,828	3,475	21,008	22,566	19,967	2,302	2,201	17,453	16,009	14,426
Missouri	6,577	6,045	44,411	44,192	44,707	4,201	3,924	32,953	28,741	30,693
North Dakota	756	792	5,079	5,236	5,374	468	502	3,398	3,326	3,200
South Dakota	860	1,111	6,341	6,655	6,536	453	618	3,970	4,140	3,980
Nebraska	1,954	1,793	13,303	13,840	14,157	1,239	1,078	8,745	8,689	8,420
Kansas	2,371	3,255	20,721	22,417	22,462	1,787	1,770	13,823	13,119	13,351
South Atlantic	58,130	61,320	385,826	393,229	397,917	34,637	32,161	253,318	240,273	233,526
Delaware	876	972	6,165	6,421	6,684	481	516	3,631	3,478	3,397
Maryland	6,682	7,186	42,461	43,232	46,411	3,419	3,251	25,365	21,717	21,318
District of Columbia	869	871	5,815	5,938	6,084	540	603	3,979	4,029	4,098
Virginia	8,822	9,001	56,273	57,723	56,867	4,452	3,977	30,741	29,135	28,763
West Virginia	1,914	2,200	13,133	13,220	13,408	1,679	1,634	11,950	12,422	11,868
North Carolina	9,174	9,063	57,296	59,637	58,781	5,057	4,839	37,557	35,116	34,291
South Carolina	5,541	5,247	31,692	32,757	33,148	2,485	2,395	18,424	17,955	17,675
Georgia	8,339	10,566	63,893	65,597	64,881	5,118	4,532	33,288	31,715	30,962
Florida	15,913	16,214	109,098	108,704	111,653	11,406	10,414	88,383	84,706	81,154
East South Central	20,955	20,386	133,089	133,611	133,704	12,658	11,325	92,373	88,352	84,425
Kentucky	4,632	4,941	30,214	31,585	31,954	2,993	2,849	22,162	21,052	20,715
Tennessee	5,981	5,476	41,313	41,427	42,709	3,856	3,663	28,997	28,274	26,926
Alabama	6,479	5,739	37,654	36,390	34,456	3,587	2,741	25,470	24,056	21,895
Mississippi	3,863	4,230	23,908	24,209	24,585	2,222	2,072	15,744	14,970	14,889
West South Central	44,046	43,963	279,043	283,379	274,361	19,340	18,613	141,376	137,014	132,927
Arkansas	3,340	3,101	19,924	20,287	19,756	2,299	1,992	15,887	15,047	14,129
Louisiana	5,627	5,530	41,425	43,789	40,459	2,931	3,145	24,844	24,028	23,220
Oklahoma	3,455	4,549	26,426	28,293	27,714	2,672	2,483	19,152	18,121	17,978
Texas <sup>1</sup>	31,624	30,783	191,268	191,010	186,432	11,438	10,993	81,493	79,818	77,600
Mountain	21,115	21,339	145,250	143,404	142,173	8,428	8,812	65,192	61,528	59,241
Montana	1,018	986	6,656	6,890	6,689	621	575	4,417	4,198	4,151
Idaho	1,406	1,692	10,213	10,284	10,178	676	673	4,894	4,726	4,556
Wyoming	627	679	3,829	4,088	3,942	296	278	2,029	1,930	1,804
Colorado	4,846	4,741	32,504	32,524	31,935	1,760	1,759	13,820	13,077	13,122
New Mexico	2,276	2,589	15,825	16,247	15,770	783	731	7,070	6,889	6,576
Arizona	6,182	4,536	42,046	37,564	39,532	2,613	3,092	20,777	18,944	17,912
Utah	2,900	3,608	21,300	22,579	20,405	843	893	5,917	5,791	5,284
Nevada	1,860	2,508	12,877	13,228	13,722	836	811	6,268	5,973	5,836
Pacific	66,815	54,459	415,204	427,895	441,626	24,233	25,826	170,882	172,425	176,785
Washington	7,819	5,748	38,079	40,146	43,732	2,969	2,810	25,006	22,039	22,409
Oregon	3,490	3,632	24,431	24,531	24,860	2,176	1,817	15,474	14,705	14,798
California <sup>1</sup>	52,873	42,402	335,605	344,896	355,106	18,306	20,437	124,866	130,447	134,385
Alaska	911	900	5,768	6,775	6,483	229	215	1,249	1,226	1,252
Hawaii	1,722	1,687	11,321	11,547	11,445	553	547	4,287	4,008	3,941

<sup>1</sup>Figures include adjustments for varying length of reporting periods; see Technical notes.

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.

Monthly Vital Statistics Report • Vol. 42, No. 7 • February 2, 1994

Table 3. Provisional number of marriages and divorces: each division and State, July 1992 and 1993, and cumulative figures, 1991-93

[By State of occurrence. Number of events reported; see Technical notes. Divorces include reported annulments]

Area	Marriages					Divorces				
	July		January-July			July		January-July		
	1993	1992	1993	1992	1991	1993	1992	1993	1992	1991
New England . . . . .	<sup>1</sup> 8,558	9,487	<sup>1</sup> 33,455	50,722	52,124	<sup>1</sup> 3,320	6,913	<sup>1</sup> 19,531	27,927	26,21
Maine . . . . .	1,092	1,325	5,182	5,576	4,968	458	447	3,246	3,517	2,91
New Hampshire . . . . .	287	523	2,985	3,678	4,655	415	430	2,798	3,531	2,91
Vermont . . . . .	824	731	2,781	2,658	2,654	194	320	1,607	1,814	1,4
Massachusetts . . . . .	5,590	4,289	18,833	22,993	23,139	1,994	4,300	9,838	10,105	8,7
Rhode Island . . . . .	765	645	3,674	3,716	3,815	259	324	2,042	2,104	1,9
Connecticut . . . . .	---	1,974	---	12,101	12,893	---	1,092	---	6,856	8,1
Middle Atlantic . . . . .	<sup>1</sup> 12,140	27,948	<sup>1</sup> 67,024	150,912	152,889	9,222	10,172	69,021	71,982	71,4
New York <sup>2</sup> . . . . .	---	16,145	---	80,769	83,980	4,265	4,538	31,235	32,798	32,61
New Jersey . . . . .	4,812	4,376	27,566	28,528	28,799	1,761	1,974	14,949	15,661	15,51
Pennsylvania . . . . .	7,328	7,427	39,458	41,615	40,110	3,196	3,660	22,837	23,523	23,11
East North Central . . . . .	35,551	34,782	180,963	186,301	192,968	<sup>1</sup> 12,639	<sup>1</sup> 13,500	<sup>1</sup> 88,173	<sup>1</sup> 88,921	<sup>1</sup> 92,2
Ohio . . . . .	9,271	9,577	47,116	50,083	52,742	4,839	5,255	29,720	31,102	32,5
Indiana . . . . .	5,644	5,239	27,853	27,846	27,512	---	---	---	---	---
Illinois . . . . .	8,892	9,042	48,843	50,003	51,217	3,727	4,012	25,657	24,919	26,1
Michigan . . . . .	7,084	6,314	35,436	36,082	39,220	2,645	2,838	22,477	22,239	22,9
Wisconsin . . . . .	4,660	4,610	21,715	22,287	22,277	1,428	1,395	10,319	10,661	10,6
West North Central . . . . .	15,441	16,871	79,336	81,527	82,004	7,043	6,100	45,355	44,574	46,5
Minnesota . . . . .	3,686	3,416	16,508	16,665	17,261	1,590	1,287	10,026	8,873	8,7
Iowa . . . . .	2,690	2,847	14,223	12,227	12,809	815	1,015	6,284	6,520	7,5
Missouri . . . . .	4,510	4,678	24,940	25,693	26,202	2,309	2,267	15,634	15,647	15,7
North Dakota . . . . .	575	600	2,714	2,692	2,619	209	236	1,287	1,390	1,2
South Dakota . . . . .	883	781	4,121	4,130	4,153	241	254	1,696	1,694	1,5
Nebraska . . . . .	1,595	1,772	7,303	7,825	7,579	496	586	3,612	3,887	3,7
Kansas . . . . .	1,502	2,777	9,527	12,295	11,381	1,383	455	6,816	6,563	7,7
South Atlantic . . . . .	42,090	41,589	254,118	246,411	256,864	19,497	22,197	137,555	138,503	136,4
Delaware . . . . .	470	361	2,789	2,710	2,963	349	425	1,846	2,003	1,7
Maryland . . . . .	4,010	3,324	22,734	22,151	22,342	1,510	1,560	9,730	10,307	9,2
District of Columbia . . . . .	183	211	1,409	1,592	2,340	88	200	975	1,472	1,1
Virginia . . . . .	7,034	6,453	38,927	39,062	38,695	2,344	2,800	16,904	17,073	16,2
West Virginia . . . . .	1,324	1,578	7,521	7,088	6,870	670	635	5,646	5,477	5,7
North Carolina . . . . .	4,461	4,487	27,180	28,339	28,464	3,117	3,521	20,759	21,558	19,6
South Carolina . . . . .	5,439	4,962	30,773	31,606	30,740	1,346	1,078	8,972	9,411	8,5
Georgia . . . . .	6,247	8,300	36,027	31,192	42,052	3,068	4,725	22,416	20,393	25,2
Florida . . . . .	12,922	11,913	86,758	82,671	82,398	7,005	7,253	50,307	50,809	49,0
East South Central . . . . .	22,298	17,744	108,162	105,820	106,533	9,249	8,142	56,306	58,733	55,9
Kentucky . . . . .	5,873	5,019	26,707	28,409	27,926	2,016	1,785	13,104	14,208	12,61
Tennessee . . . . .	8,768	7,331	43,813	40,766	39,923	3,122	2,710	19,537	19,451	18,8
Alabama . . . . .	5,146	3,139	23,487	23,331	25,077	2,531	2,270	16,076	15,982	16,3
Mississippi . . . . .	2,511	2,255	14,155	13,314	13,607	1,580	1,377	7,589	9,092	8,1
West South Central . . . . .	29,485	27,556	169,091	170,520	171,635	<sup>1</sup> 10,946	<sup>1</sup> 12,773	<sup>1</sup> 83,320	<sup>1</sup> 86,949	<sup>1</sup> 79,81
Arkansas . . . . .	3,477	3,486	21,500	20,995	22,869	1,183	1,666	10,158	10,551	11,1
Louisiana . . . . .	5,583	5,818	20,014	20,999	18,637	---	---	---	---	---
Oklahoma . . . . .	3,204	3,250	17,906	19,008	19,104	1,870	2,182	12,707	14,918	13,87
Texas <sup>3</sup> . . . . .	17,221	15,002	109,671	109,518	111,025	7,893	8,925	60,455	61,480	54,78
Mountain . . . . .	<sup>1</sup> 22,290	25,621	<sup>1</sup> 128,014	142,352	140,426	<sup>1</sup> 16,163	<sup>1</sup> 16,775	<sup>1</sup> 144,884	<sup>1</sup> 146,163	<sup>1</sup> 143,01
Montana . . . . .	991	917	3,901	3,904	4,039	388	407	2,531	2,544	2,52
Idaho . . . . .	1,400	1,974	7,109	8,317	7,478	450	508	3,983	3,928	3,66
Wyoming . . . . .	382	649	2,378	2,660	2,685	284	292	1,715	1,862	1,87
Colorado . . . . .	---	3,617	---	18,792	18,932	1,455	1,623	11,002	11,328	11,02
New Mexico <sup>4,5</sup> . . . . .	1,365	1,499	7,518	7,918	7,760	846	998	5,969	5,836	4,96
Arizona <sup>2</sup> . . . . .	3,672	3,041	24,040	21,164	21,824	2,126	2,169	14,535	15,010	14,06
Utah . . . . .	2,518	2,318	11,418	11,166	9,933	614	778	5,149	5,655	4,90
Nevada . . . . .	11,962	11,606	71,650	68,431	67,775	---	---	---	---	---
Pacific . . . . .	<sup>1</sup> 8,518	<sup>1</sup> 8,501	<sup>1</sup> 42,385	<sup>1</sup> 48,082	172,842	<sup>1</sup> 6,780	<sup>1</sup> 4,287	<sup>1</sup> 28,523	<sup>1</sup> 30,969	<sup>1</sup> 31,14
Washington . . . . .	3,277	3,991	17,049	22,756	27,732	4,757	2,227	15,103	16,475	17,05
Oregon . . . . .	2,872	2,062	12,208	11,571	12,851	1,368	1,251	8,999	9,072	9,29
California . . . . .	---	---	---	---	118,554	---	---	---	---	---
Alaska . . . . .	699	770	2,926	3,341	3,551	175	303	1,508	2,340	1,95
Hawaii . . . . .	1,670	1,678	10,202	10,414	10,154	480	506	2,913	3,082	2,83

<sup>1</sup>Excludes figures for State(s) shown below as not available.  
<sup>2</sup>Figures for marriages are marriage licenses issued for some counties.  
<sup>3</sup>Figures include adjustments for varying length of reporting periods; see Technical notes.  
<sup>4</sup>Figures for marriages are marriage licenses issued.  
<sup>5</sup>Figures for divorces include estimates for some counties.

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.

Table 4. Provisional number of deaths under 1 year and infant mortality rates: each division and State, 12 months ending with July 1992 and 1993

[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 July			
	1993		1992	
	Number	Rate	Number	Rate
New England . . . . .	1,869	16.3	1,270	6.7
Maine . . . . .	91	6.1	105	6.4
New Hampshire . . . . .	74	5.0	85	5.4
Vermont . . . . .	45	6.2	51	6.4
Massachusetts . . . . .	524	6.1	575	6.7
Rhode Island . . . . .	135	9.2	107	7.4
Connecticut . . . . .	---	---	347	7.1
Middle Atlantic . . . . .	4,943	8.7	4,937	8.6
New York . . . . .	2,522	8.9	2,410	8.3
New Jersey . . . . .	997	8.1	1,052	9.0
Pennsylvania . . . . .	1,424	8.8	1,475	8.9
East North Central . . . . .	6,008	9.2	6,264	9.4
Ohio . . . . .	1,390	8.5	1,457	8.7
Indiana . . . . .	825	9.8	769	9.1
Illinois . . . . .	1,860	9.7	2,002	10.3
Michigan . . . . .	1,399	9.9	1,494	10.0
Wisconsin . . . . .	534	7.7	542	7.6
West North Central . . . . .	2,055	8.1	2,174	8.2
Minnesota . . . . .	465	7.2	468	7.0
Iowa . . . . .	251	6.9	303	7.8
Missouri . . . . .	691	9.1	694	9.0
North Dakota . . . . .	56	6.4	80	9.0
South Dakota . . . . .	113	10.3	108	9.7
Nebraska . . . . .	169	7.5	188	8.0
Kansas . . . . .	310	8.7	333	8.9
South Atlantic . . . . .	6,590	9.8	6,592	9.6
Delaware . . . . .	93	8.7	120	11.0
Maryland . . . . .	678	9.0	682	8.4
District of Columbia . . . . .	177	17.8	191	19.4
Virginia . . . . .	949	9.9	824	8.5
West Virginia . . . . .	217	9.8	207	9.4
North Carolina . . . . .	1,063	10.6	1,084	10.5
South Carolina . . . . .	535	9.6	621	10.8
Georgia . . . . .	1,146	10.4	1,186	10.7
Florida . . . . .	1,732	9.0	1,677	8.8
East South Central . . . . .	2,366	10.1	2,327	10.0
Kentucky . . . . .	477	9.1	440	8.1
Tennessee . . . . .	722	9.8	722	10.1
Alabama . . . . .	637	9.9	687	11.0
Mississippi . . . . .	530	12.3	478	11.1
West South Central . . . . .	3,807	8.0	4,072	8.3
Arkansas . . . . .	321	9.3	344	9.8
Louisiana . . . . .	684	9.9	706	9.1
Oklahoma . . . . .	429	9.3	455	9.5
Texas <sup>2</sup> . . . . .	2,373	7.3	2,567	7.8
Mountain . . . . .	1,873	7.6	1,926	7.9
Montana . . . . .	85	7.5	99	8.4
Idaho . . . . .	154	8.8	127	7.3
Wyoming . . . . .	71	10.8	47	6.8
Colorado . . . . .	411	7.5	424	7.8
New Mexico . . . . .	221	7.9	266	9.3
Arizona . . . . .	554	7.8	579	8.8
Utah . . . . .	236	6.5	229	6.1
Nevada . . . . .	141	6.4	155	6.9
Pacific . . . . .	14,446	16.7	5,375	7.2
Washington . . . . .	---	---	530	7.3
Oregon . . . . .	323	7.8	293	6.9
California <sup>2</sup> . . . . .	3,903	6.6	4,335	7.2
Alaska . . . . .	83	7.8	85	7.4
Hawaii . . . . .	137	7.0	132	6.6

<sup>1</sup>Excludes figures for State shown below as not available.<sup>2</sup>Figures include adjustments for varying length of reporting periods; 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.







**Monthly Vital Statistics Report • Vol. 42, No. 7 • February 2, 1994**

**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, June 1992 and 1993, cumulative figures for 1992 and 1993, and 12 months ending with June 1992 and 1993—Con.**

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

Age, race, and sex	June				January–June				12 months ending with June			
	1993		1992		1993		1992		1993		1992	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
<b>Black female</b>												
All ages . . . . .	9,860	710.2	9,530	699.4	65,440	783.8	61,720	749.3	127,470	759.4	120,640	73
Under 1 year . . . . .	430	120.3	560	159.9	2,260	<sup>2</sup> 1,428.3	2,530	<sup>2</sup> 1,619.0	4,850	<sup>2</sup> 1,530.0	5,180	<sup>2</sup> 1,64
1–4 years . . . . .					500	81.9	440	73.3	870	71.0	810	6
5–14 years . . . . .					440	31.9	340	25.7	790	28.5	820	3
15–24 years . . . . .					180	81.9	150	68.6	1,040	78.5	930	70.2
25–34 years . . . . .	310	130.5	350	147.0	2,260	157.6	2,180	150.7	4,630	160.0	4,360	14
35–44 years . . . . .	690	323.3	620	301.4	4,370	341.1	3,920	316.4	8,540	332.3	7,600	30
45–54 years . . . . .	970	740.4	720	576.4	5,180	660.9	4,710	624.3	10,010	639.6	9,190	61
55–64 years . . . . .	1,200	1,253.2	1,400	1,483.9	8,500	1,475.5	8,250	1,442.0	17,070	1,472.8	15,940	1,38
65–74 years . . . . .	2,150	2,818.8	1,970	2,629.5	13,860	3,018.5	12,370	2,727.4	26,230	2,838.7	24,670	2,71
75–84 years . . . . .	2,160	5,044.1	2,140	5,089.3	15,170	5,889.1	14,280	5,616.2	29,340	5,664.1	27,870	5,46
85 years and over . . . . .	1,770	12,448.0	1,600	11,688.6	11,830	13,872.0	11,730	14,184.9	23,020	13,462.0	22,150	13,34
Not stated . . . . .	—	...	—	...	30	...	40	...	50	...	80	...
Age-adjusted rate <sup>3</sup> . . . . .	...	554.1	...	548.3	...	602.8	...	573.1	...	585.6	...	56

<sup>1</sup> Includes races other than white and black.

<sup>2</sup>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.

<sup>3</sup>For 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 differ from those previously published. Rates for 1992 have been recomputed based on revised population estimates; see Technical notes.

**Table 6. Provisional number of deaths and death rates for 72 selected causes and Human immunodeficiency virus infection: United States, June 1992 and 1993, cumulative figures 1992 and 1993, and 12 months ending with June 1992 and 1993**

[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)	June				January-June				12 months ending with June			
	1993		1992		1993		1992		1993		1992	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
All causes . . . . .	178,000	839.7	172,000	822.8	1,161,000	910.5	1,114,000	881.5	2,223,000	866.5	2,178,000	858.4
Shigellosis and amebiasis . . . . .	.004,006	*	-	*	-	*	-	*	-	*	-	*
Certain other intestinal infections . . . . .	.007-009	60	70	*	330	0.3	410	0.3	670	0.3	710	0.3
Tuberculosis . . . . .	.010-018	190	80	*	870	0.7	620	0.5	1,610	0.6	1,410	0.6
Tuberculosis of respiratory system . . . . .	.010-012	150	60	*	700	0.5	500	0.4	1,270	0.5	1,060	0.4
Other tuberculosis . . . . .	.013-018	40	20	*	170	0.1	130	0.1	340	0.1	350	0.1
Whooping cough . . . . .	.033	-	-	*	10	*	-	*	20	*	-	*
Streptococcal sore throat, scarlatina, and erysipelas . . . . .	.034-035	-	-	*	-	*	-	*	-	*	10	*
Meningococcal infection . . . . .	.036	20	10	*	170	0.1	110	0.1	290	0.1	220	0.1
Septicemia . . . . .	.038	1,430	1,620	7.7	10,200	8.0	10,390	8.2	19,730	7.7	20,090	7.9
Acute poliomyelitis . . . . .	.045	-	-	*	-	*	-	*	-	*	-	*
Measles . . . . .	.055	-	-	*	-	*	-	*	-	*	10	*
Viral hepatitis . . . . .	.070	230	130	0.6	1,290	1.0	930	0.7	2,300	0.9	1,900	0.7
Syphilis . . . . .	.090-097	-	20	*	20	*	60	*	30	*	140	0.1
All other infectious and parasitic diseases <sup>1</sup> . . . . .	.001-003,005,020-032,037,039-041,*042-*044,046-054,056-066,071-088,098-139	3,780	3,070	14.7	21,690	17.0	18,890	14.9	41,760	16.3	37,020	14.6
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues . . . . .	.140-208	41,950	42,120	201.6	262,520	205.9	257,780	203.9	525,270	204.7	516,630	203.7
Malignant neoplasms of lip, oral cavity, and pharynx . . . . .	.140-149	650	640	3.1	4,010	3.1	3,870	3.1	8,160	3.2	7,520	3.0
Malignant neoplasms of digestive organs and peritoneum . . . . .	.150-159	9,950	9,970	47.7	60,060	47.1	60,150	47.6	121,520	47.4	120,490	47.5
Malignant neoplasms of respiratory and intrathoracic organs . . . . .	.160-165	11,820	12,040	57.6	76,120	59.7	75,230	59.5	152,340	59.4	150,420	59.3
Malignant neoplasm of breast . . . . .	.174-175	3,380	3,690	17.7	22,370	17.5	22,540	17.8	44,030	17.2	44,270	17.5
Malignant neoplasms of genital organs . . . . .	.179-187	4,690	4,480	21.4	30,440	23.9	29,150	23.1	60,010	23.4	58,940	23.2
Malignant neoplasms of urinary organs . . . . .	.188-189	1,900	1,990	9.5	10,940	8.6	11,270	8.9	21,900	8.5	21,410	8.4
Malignant neoplasms of all other and unspecified sites . . . . .	.170-173,190-199	5,390	5,280	25.3	32,560	25.5	31,070	24.6	64,620	25.2	63,050	24.9
Leukemia . . . . .	.204-208	1,410	1,530	7.3	9,640	7.6	9,160	7.2	19,710	7.7	19,110	7.5
Other malignant neoplasms of lymphatic and hematopoietic tissues . . . . .	.200-203	2,770	2,500	12.0	16,390	12.9	15,360	12.1	32,990	12.9	31,410	12.4
Benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior and of unspecified nature . . . . .	.210-239	730	610	2.9	3,990	3.1	3,710	2.9	7,710	3.0	7,620	3.0
Diabetes mellitus . . . . .	.250	4,250	3,730	17.8	28,520	22.4	26,270	20.8	52,470	20.5	50,700	20.0
Nutritional deficiencies . . . . .	.260-269	220	210	1.0	1,610	1.3	1,550	1.2	3,170	1.2	3,150	1.2
Anemias . . . . .	.280-285	370	390	1.9	2,290	1.8	1,960	1.5	4,300	1.7	4,230	1.7
Meningitis . . . . .	.320-322	50	60	*	430	0.3	410	0.3	750	0.3	740	0.3
Major cardiovascular diseases . . . . .	.390-448	73,480	71,770	343.6	489,900	384.3	471,910	373.3	930,110	362.5	913,490	360.1
Diseases of heart . . . . .	.390-398,402-429	57,790	56,720	271.5	383,550	300.9	372,410	294.6	730,110	284.6	719,520	283.6
Rheumatic fever and rheumatic heart disease . . . . .	.390-398	430	400	1.9	2,930	2.3	3,070	2.4	5,840	2.3	5,660	2.2
Hypertensive heart disease . . . . .	.402	1,970	1,750	8.4	12,410	9.7	11,150	8.8	23,610	9.2	21,520	8.5
Hypertensive heart and renal disease . . . . .	.404	190	210	1.0	1,140	0.9	1,110	0.9	2,330	0.9	2,060	0.8
Ischemic heart disease . . . . .	.410-414	38,110	37,840	181.2	253,360	198.7	247,900	196.1	483,370	188.4	479,370	189.0
Acute myocardial infarction . . . . .	.410	17,740	18,310	87.7	117,160	91.9	119,990	94.9	226,480	88.3	233,140	91.9
Other acute and subacute forms of ischemic heart disease . . . . .	.411	300	300	1.4	1,490	1.2	1,550	1.2	2,790	1.1	3,090	1.2
Angina pectoris . . . . .	.413	70	80	*	360	0.3	500	0.4	880	0.3	940	0.4
Old myocardial infarction and other forms of chronic ischemic heart disease . . . . .	.412,414	20,000	19,150	91.7	134,340	105.4	125,860	99.6	253,230	98.7	242,200	95.5
Other diseases of endocardium . . . . .	.424	1,070	1,220	5.8	7,400	5.8	7,940	6.3	14,400	5.6	14,280	5.6
All other forms of heart disease . . . . .	.415-423,425-429	16,020	15,300	73.2	106,300	83.4	101,250	80.1	200,560	79.2	195,530	77.5
Hypertension with or without renal disease . . . . .	.401,403	910	850	4.1	5,430	4.3	4,680	3.7	10,400	4.1	8,720	3.4
Cerebrovascular diseases . . . . .	.430-438	11,310	11,180	53.5	77,910	61.1	73,950	58.5	147,280	57.4	143,470	56.6
Intracerebral and other intracranial hemorrhage . . . . .	.431-432	1,600	1,580	7.6	11,450	9.0	10,720	8.5	21,750	8.5	20,880	8.2
Cerebral thrombosis and unspecified occlusion of cerebral arteries . . . . .	.434,0,434.9	1,190	1,200	5.7	8,160	6.4	7,720	6.1	15,780	6.2	15,520	6.1
Cerebral embolism . . . . .	.434.1	40	10	*	280	0.2	350	0.3	620	0.2	640	0.3
All other and late effects of cerebrovascular diseases . . . . .	.430,433,435-438	8,480	8,380	40.1	58,010	45.5	55,170	43.6	109,130	42.5	106,440	42.0

Atherosclerosis . . . . .	.440	1,330	6.3	1,230	5.9	9,010	7.1	8,220	6.5	16,910	6.6	16,460	6.5
Other diseases of arteries, arterioles, and capillaries. . . . .	.441-448	2,140	10.1	1,790	8.6	14,000	11.0	12,650	10.0	25,420	9.9	25,310	10.0
Acute bronchitis and bronchiolitis . . . . .	.466	50	*	30	*	370	0.3	280	0.2	590	0.2	540	0.2
Pneumonia and influenza . . . . .	.480-487	5,530	26.1	5,200	24.9	44,810	35.2	42,830	33.9	77,840	30.3	76,020	30.0
Pneumonia . . . . .	.480-486	5,500	26.0	5,190	24.8	44,130	34.6	41,750	33.0	77,090	30.0	74,470	29.4
Influenza . . . . .	.487	30	*	10	*	680	0.5	1,080	0.8	740	0.3	1,550	0.6
Chronic obstructive pulmonary diseases and allied conditions . . . . .	.490-496	8,470	40.0	7,210	34.5	55,540	43.6	50,380	39.8	96,240	37.5	90,610	35.7
Bronchitis, chronic and unspecified . . . . .	.490-491	210	1.0	300	1.4	2,010	1.6	2,260	1.8	3,620	1.4	3,930	1.5
Emphysema . . . . .	.492	1,520	7.2	1,300	6.2	10,020	7.9	8,880	7.0	17,780	6.9	16,600	6.5
Asthma . . . . .	.493	510	2.4	410	2.0	2,740	2.1	2,640	2.1	4,750	1.9	4,850	1.9
Other chronic obstructive pulmonary diseases and allied conditions . . . . .	.494-496	6,230	29.4	5,210	24.9	40,770	32.0	36,600	29.0	70,090	27.3	65,230	25.7
Ulcer of stomach and duodenum . . . . .	.531-533	470	2.2	470	2.2	2,990	2.3	3,030	2.4	5,730	2.2	5,850	2.3
Appendicitis . . . . .	.540-543	40	*	50	*	260	0.2	200	0.1	360	0.1	370	0.1
Hernia of abdominal cavity and intestinal obstruction without mention of hernia . . . . .	.550-553,560	550	2.6	390	1.9	2,820	2.2	2,840	2.2	5,860	2.3	5,740	2.3
Chronic liver disease and cirrhosis . . . . .	.571	1,660	7.8	1,840	8.8	12,100	9.5	12,130	9.6	24,840	9.7	24,440	9.6
Cholelithiasis and other disorders of gallbladder . . . . .	.574-575	150	0.7	250	1.2	1,360	1.1	1,580	1.3	2,770	1.1	3,050	1.2
Nephritis and nephrotic syndrome, and nephrosis . . . . .	.580-589	2,000	9.4	1,790	8.6	13,380	10.5	11,910	9.4	24,410	9.5	23,430	9.2
Acute glomerulonephritis and nephrotic syndrome . . . . .	.580-581	40	*	30	*	160	0.1	180	0.1	250	0.1	310	0.1
Chronic glomerulonephritis, nephritis and nephropathy, not specified as acute or chronic, and renal sclerosis, unspecified . . . . .	.582-583,587	160	0.8	140	0.7	830	0.6	860	0.7	1,460	0.6	1,540	0.6
Renal failure, disorders resulting from impaired renal function, and small kidney of unknown cause . . . . .	.584-586,588-589	1,800	8.5	1,620	7.7	12,390	9.7	10,880	8.6	22,690	8.8	21,580	8.5
Infections of kidney . . . . .	.590	50	*	90	*	500	0.4	530	0.4	1,030	0.4	1,040	0.4
Hyperplasia of prostate . . . . .	.600	60	*	30	*	240	0.2	170	0.1	400	0.2	300	0.1
Complications of pregnancy, childbirth, and the puerperium . . . . .	.630-676	10	*	-	*	160	0.1	80	*	360	0.1	230	0.1
Pregnancy with abortive outcome . . . . .	.630-638	-	*	-	*	30	*	10	*	50	*	20	*
Other complications of pregnancy, childbirth, and the puerperium . . . . .	.640-676	10	*	-	*	130	0.1	70	*	310	0.1	210	0.1
Congenital anomalies . . . . .	.740-759	860	4.1	1,000	4.8	5,780	4.5	6,280	5.0	11,930	4.7	12,020	4.7
Certain conditions originating in the perinatal period . . . . .	.760-779	1,180	5.6	1,300	6.2	7,620	6.0	7,760	6.1	15,480	6.0	15,790	6.2
Birth trauma, intrauterine hypoxia, birth asphyxia, and respiratory distress syndrome . . . . .	.767-769	210	1.0	270	1.3	1,440	1.1	1,540	1.2	3,060	1.2	2,960	1.2
Other conditions originating in the perinatal period . . . . .	.760-766,770-779	980	4.6	1,030	4.9	6,180	4.8	6,220	4.9	12,410	4.8	12,830	5.1
Symptoms, signs, and ill-defined conditions . . . . .	.780-799	3,160	14.9	2,530	12.1	20,400	16.0	18,000	14.2	37,960	14.8	36,060	14.2
All other diseases . . . . .	.Residual	14,810	69.9	14,020	67.1	100,900	79.2	92,220	73.0	187,570	73.1	178,870	70.5
Accidents and adverse effects . . . . .	.E800-E949	7,410	35.0	7,170	34.3	40,030	31.4	40,640	32.1	83,760	32.6	87,500	34.5
Motor vehicle accidents . . . . .	.E810-E825	3,470	16.4	3,670	17.6	18,180	14.3	19,130	15.1	40,090	15.6	42,670	16.8
All other accidents and adverse effects . . . . .	.E800-E807,E826-E949	3,940	18.6	3,500	16.8	21,850	17.1	21,510	17.0	43,670	17.0	44,830	17.7
Suicide . . . . .	.E950-E959	2,410	11.4	2,280	10.9	14,600	11.5	14,470	11.4	28,840	11.2	28,780	11.3
Homicide and legal intervention . . . . .	.E960-E978	2,060	9.7	2,190	10.5	11,650	9.1	12,900	10.2	24,540	9.6	26,940	10.6
All other external causes . . . . .	.E980-E999	140	0.7	150	0.7	1,300	1.0	960	0.8	2,450	1.0	1,940	0.8
Human immunodeficiency virus infection <sup>2</sup> . . . . .	*042-*044	3,230	15.2	2,580	12.3	18,000	14.1	15,590	12.3	34,710	13.5	30,580	12.1

<sup>1</sup> Includes data for deaths due to Human immunodeficiency virus infection (category numbers \*042-\*044) shown separately below; see Technical notes.  
<sup>2</sup> Included 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. Rates for 1992 have been recomputed based on revised population estimates; see Technical notes.

**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, June 1992 and 1993, cumulative figures 1992 and 1993, and 12 months ending with June 1992 and 1993**

[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)	June		January-June				12 months ending with June						
	1993		1992		1993		1992		1993		1992		
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues <sup>1</sup> . . . . .	140-208	41,950	198.1	42,120	201.6	262,520	205.9	257,780	203.9	525,270	204.7	516,630	203.7
Malignant neoplasm of esophagus . . . . .	.150	770	3.6	950	4.5	4,810	3.8	5,200	4.1	10,210	4.0	9,790	3.9
Malignant neoplasm of stomach . . . . .	.151	1,170	5.5	1,180	5.6	6,750	5.3	6,540	5.2	13,170	5.1	13,850	5.5
Malignant neoplasms of colon, rectum, rectosigmoid junction, and anus. . . . .	.153,154	4,760	22.5	4,320	20.7	27,630	21.7	28,600	22.6	56,210	21.9	56,720	22.4
Malignant neoplasm of pancreas. . . . .	.157	2,030	9.6	2,200	10.5	13,100	10.3	12,580	9.9	26,370	10.3	25,210	9.9
Malignant neoplasms of trachea, bronchus, and lung . . . . .	.162	11,480	54.2	11,680	55.9	73,820	57.9	72,900	57.7	147,440	57.5	145,460	57.3
Malignant melanoma of skin . . . . .	.172	470	2.2	540	2.6	3,240	2.5	3,290	2.6	6,700	2.6	6,660	2.6
Malignant neoplasm of cervix uteri . . . . .	.180	310	1.5	350	1.7	2,260	1.8	2,030	1.6	4,500	1.8	4,170	1.6
Malignant neoplasms of body of uterus and of uterus, part unspecified . . . . .	.179,182	480	2.3	460	2.2	3,010	2.4	3,200	2.5	6,200	2.4	6,080	2.4
Malignant neoplasm of ovary . . . . .	.183.0	1,070	5.0	960	4.6	6,520	5.1	6,230	4.9	12,990	5.1	12,930	5.1
Malignant neoplasm of prostate . . . . .	.185	2,670	12.6	2,550	12.2	17,780	14.0	16,720	13.2	34,640	13.5	33,830	13.3
Malignant neoplasm of bladder . . . . .	.188	890	4.2	980	4.7	5,470	4.3	5,680	4.5	10,800	4.2	10,720	4.2
Malignant neoplasms of kidney and other and unspecified urinary organs . . . . .	.189	1,010	4.8	1,010	4.8	5,470	4.3	5,590	4.4	11,100	4.3	10,700	4.2
Malignant neoplasms of brain and other and unspecified parts of nervous system . . . . .	.191,192	1,100	5.2	900	4.3	5,640	4.4	5,170	4.1	11,070	4.3	11,170	4.4
Hodgkin's disease. . . . .	.201	160	0.8	230	1.1	850	0.7	810	0.6	1,670	0.7	1,700	0.7
Malignant lymphoma other than Hodgkin's disease. . . . .	.200,202	1,750	8.3	1,600	7.6	10,480	8.2	9,860	7.8	21,360	8.3	20,150	7.9
Multiple myeloma and other immunoproliferative neoplasms. . . . .	.203	860	4.1	670	3.2	5,060	4.0	4,690	3.7	9,960	3.9	9,560	3.8

<sup>1</sup>Includes 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. Rates for 1992 have been recomputed based on revised population estimates; see Technical notes.

**Table 8. Provisional number of deaths under 1 year and infant mortality rates, by age and for 10 selected causes: United States, June 1992 and 1993, cumulative figures 1992 and 1993, and 12 months ending with June 1992 and 1993**

[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)	June		January-June				12 months ending with June						
	1993		1992		1993		1992		1993		1992		
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	
Total, under 1 year . . . . .	2,600	834.3	2,700	823.9	17,100	865.2	17,700	874.2	33,900	844.6	35,200	862.2	
Under 28 days . . . . .	1,680	532.3	1,740	534.9	10,410	526.3	10,970	542.9	21,240	529.3	22,160	542.1	
28 days to 11 months. . . . .	960	304.2	940	289.0	6,700	338.7	6,700	331.6	12,650	315.2	13,080	320.0	
Certain gastrointestinal diseases. . . . .	.008-009,535,555-558	10	*	80	*	90	*	200	9.9	230	5.7	320	7.8
Pneumonia and influenza . . . . .	.480-487	50	*	20	*	310	15.7	330	16.3	590	14.7	550	13.5
Congenital anomalies . . . . .	.740-759	490	155.3	600	184.5	3,300	166.8	3,770	186.6	7,020	174.9	7,440	182.0
Disorders relating to short gestation and unspecified low birthweight . . . . .	.765	330	104.6	270	83.0	2,010	101.6	1,840	91.1	3,960	98.7	3,940	96.4
Birth trauma . . . . .	.767	-	*	40	*	70	*	90	*	140	3.5	180	4.4
Intrauterine hypoxia and birth asphyxia . . . . .	.768	60	*	20	*	330	16.7	270	13.4	750	18.7	600	14.7
Respiratory distress syndrome . . . . .	.769	150	47.5	210	64.6	1,020	51.6	1,140	56.4	2,130	53.1	2,120	51.9
Other conditions originating in the perinatal period . . . . .	.760-764,766,770-779	630	199.6	740	227.5	4,070	205.8	4,280	211.8	8,310	207.1	8,710	213.1
Sudden infant death syndrome . . . . .	.798.0	340	107.7	220	67.6	2,370	119.8	2,220	109.9	4,340	108.2	4,320	105.7
All other causes. . . . .	Residual	580	183.8	490	150.6	3,540	179.0	3,520	174.2	6,420	160.0	7,060	172.7

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 unless otherwise specified and include only events occurring within the United States. Mortality data exclude fetal deaths.

Birth, death, and infant death figures 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. 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 California 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 in tables 2-4 also are 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 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 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. 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), 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 United States, 1988*, Volumes I and II.

### Rates

Rates are on an annual basis 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 Census. The population bases used to compute rates for 1992 and 1993 were based on the 1990 Census enumeration (not adjusted for undercount) compared to those used for 1990 and 1991 final data. Population bases were *not* the same as those used for the *Monthly Vital Statistics Report* for each month from January through December 1992; therefore, rates may not be the same as those previously published. Monthly rates are based on populations estimated for the specific month. Year-to-date rates are averages of monthly rates that have been weighted the number of days in the corresponding months. Rates for 12-month periods are the sum of events for the period divided by population estimated at the midpoint of the period.

Infant mortality rates are deaths under 1 year of age for the specific 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 final adjustment. Births used for computing infant mortality rates are not corrected for observed differences between provisional and final monthly figures as described earlier in *Nature and sources of data*. Because monthly infant mortality rates are based on relatively few events, they are highly variable. Therefore, comparisons of monthly infant mortality rates should be interpreted cautiously; see *Random variation*.

Age-adjusted death rates are used to make comparisons of relative mortality risks across groups and over time. However, they should be viewed as constructed indexes rather than as direct or actual measures of mortality risk. Statistically, they are weighted averages of the age-specific death rates, where the weight

represent the fixed population proportions by age. See chapter 5 of an earlier report (2). The age-adjusted death rates presented in this report were computed by the direct method, that is, by applying age-specific death rates to the U.S. standard million population (3). See also chapter 10 of an earlier report (2). Age groups in table 5 of this report were used to compute the age-adjusted rates shown in that table. The age-adjusted death rates on which the State maps are based and that are shown with the State maps were computed from average annual age-specific death rates in 10-year age groups for the specified 3-year period. The average annual age-specific death rates were computed by dividing the number of deaths in an age group for the 3-year period by three times the population in that age group estimated at the midpoint of the period (4). It is important not to compare age-adjusted 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, the National Center for Health Statistics introduced category numbers \*042–\*044 for classifying and coding human immunodeficiency virus (HIV) 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 and are also 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 in the following 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 fall between the two.

The chances are about 2 in 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 in 20 that the percent difference is less than twice the percent shown. A figure based on 100 or fewer estimated deaths has a relative standard error of 30 percent or more and is, therefore, considered unreliable. A rate based on 100 or fewer estimated deaths has been replaced by an asterisk.

Unless otherwise specified, comparisons made in the text between death rates

**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

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 (MSS) 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
- $\epsilon_t$  = 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 1984 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 1985 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 (5). Symbols in each chart represent actual monthly death rates based on the CMS. In some cases, the data are converted by the natural logarithm before fitting the model. For graphical purposes, the data are converted 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 on request for the charts published in

the MSS. Time series regression models have been used previously to describe trends in mortality data (6-8). A list of MSS cause-of-death topics and comparable *Healthy People 2000* (1) objectives is presented 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 1988-90 and the 1989 population estimated as of July 1, 1989 (4). Assigning the States into the given categories 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 0.05 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 tables. The symbols “+” and “++” in the tables are used to denote State rates that differ significantly from the U.S. rate at the 0.05 and 0.01 levels of significance, respectively. Different procedures were used to determine tests of statistical significance and confidence intervals, depending on the number of deaths.

For 50 deaths or more, 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 1988-90 for the given State per 100,000 standard population

$R'_{us}$  = age-adjusted rate for 1988-90 for the United States per 100,000 standard population

$S^2(R'_s)$  = estimated variance of the age-adjusted death rate for 1988-90 for the State

$S^2(R'_{us})$  = estimated variance of the age-adjusted death rate for 1988-90 for the United States

The variance of the age-adjusted death rate was computed in terms of the variances of age-specific death rates (9) under the assumption that the age-specific death rates are binomial proportions (10). 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 (11). The difference between the State and U.S. age-adjusted rates was determined to be statistically significant at the 0.05 or 0.01 level if the rates' respective 95-percent or 99-percent confidence limits did not overlap.

For zero deaths, the following test statistic ( $\lambda$ ) was used to perform the significance test:

$$\lambda = \left[ \sum_{x=1}^n M_{x(us)} \cdot P_{x(s)} \right] / 100,000$$

where

$M_{x(us)}$  = age-specific death rate per 100,000 population in the  $x^{\text{th}}$  age group for the United States

$P_{x(s)}$  = population in the  $x^{\text{th}}$  age group for the given State

$n$  = number of age groups = 11.

The difference between the State and U.S. age-adjusted rates was determined to

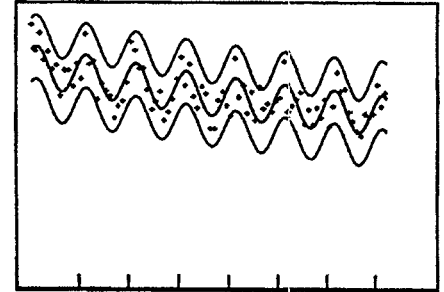
be statistically significant at 0.05 level if  $3.00 \leq \lambda < 4.61$ . The difference between the State and U.S. age-adjusted rates was determined to be statistically significant at 0.01 level if  $\lambda \geq 4.61$  (12). For zero deaths, confidence limits for the age adjusted death rates are not applicable.

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**Mortality Surveillance System topics**

<i>MVSR issue</i>	<i>Cause-of-death</i>	<i>Healthy People 2000 Objective Number</i>
Vol. 41 No. 8	Malignant neoplasm of prostate, Malignant neoplasm of breast	( <sup>1</sup> ), 16.3
Vol. 41 No. 9	Malignant neoplasms of digestive organs and peritoneum	16.5
Vol. 41 No. 10	Suicide	6.1 (7.2)
Vol. 41 No. 11	Accidents and adverse effects, Homicide and legal intervention	9.1, 7.1
Vol. 41 No. 12	Infant mortality, Neonatal mortality, Postneonatal mortality, and Sudden infant death syndrome	14.1
Vol. 42 No. 1	Human immunodeficiency virus infection	( <sup>2</sup> )
Vol. 42 No. 2	Cerebrovascular diseases	15.2
Vol. 42 No. 3	Chronic obstructive pulmonary diseases and allied conditions	3.3
Vol. 42 No. 4	Diabetes mellitus	17.9
Vol. 42 No. 5	Diseases of heart	1.1 (2.1, 3.1, 15.1)
Vol. 42 No. 6	Malignant neoplasms including neoplasms of lymphatic and hematopoietic tissues	2.2 (16.1)
Vol. 42 No. 7	Malignant neoplasms of trachea, bronchus, and lung	3.2 (16.2)



<sup>1</sup>No *Healthy People 2000* objective exists that addresses mortality from Malignant neoplasm of prostate.  
<sup>2</sup>No *Healthy People 2000* objective exists that addresses mortality from this cause. See Chapter 18 for objectives related to Human immunodeficiency virus infection.

NOTE: The cause-of-death categories used in *Healthy People 2000* objective(s) may differ from those used in NCHS Mortality Tabulation Lists.

**Suggested citation**

National Center for Health Statistics. Births, marriages, divorces, and deaths for July 1993. Monthly vital statistics report; vol 42 no 7. Hyattsville, Maryland: Public Health Service. 1993.

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DHHS Publication No. (PHS) 94-1120