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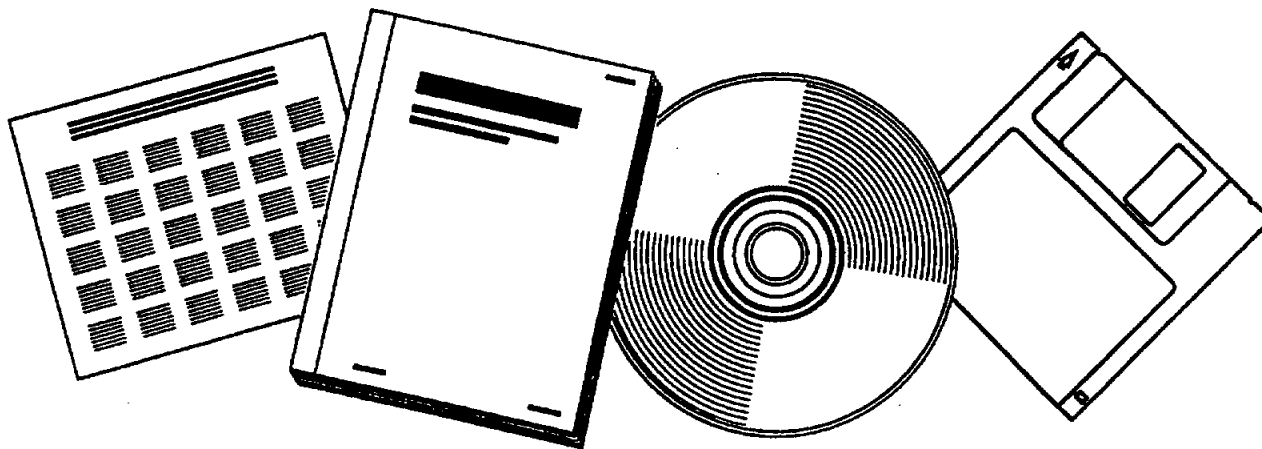
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# COMPRESSED MORTALITY FILE, 1968-1988. PUBLIC USE DATA TAPE DOCUMENTATION

NATIONAL CENTER FOR HEALTH STATISTICS  
HYATTSVILLE, MD

DEC 1993



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Compressed Mortality File, 1968-1988  
Public Use Data Tape Documentation

(U.S.) National Center for Health Statistics, Hyattsville, MD

Dec 93



PB94-114188

# **Public Use Data Tape Documentation Compressed Mortality File 1968-88**

**Department of Health and Human Services  
Public Health Service  
Centers for Disease Control and Prevention  
National Center for Health Statistics**

*December 1993*

REPRODUCED BY:  
DEPARTMENT OF COMMERCE  
National Technical Information Service  
Springfield, Virginia 22161

# **Data Tape Documentation for the Compressed Mortality File, 1968-88**

## **Abstract**

This documentation is designed to assist users of the Compressed Mortality File (CMF), a county-level data file covering the years 1968-88. Section I provides guidelines for use of NCHS data tapes. Section II includes information on the background and purpose of the file and the sources of the data. Sections III and IV provide technical specifications for the tapes. Sections V and VI provide a description of the data on these tapes, as well as the location of the contents of each record. Appendix A, from the 1988 Vital Statistics of the United States mortality volume, provides a brief description of the mortality vital statistics system and cause of death coding. Appendix B contains a list of comparable International Classification of Diseases (ICD) codes for the 8th and 9th revisions (72 selected causes), and estimated comparability ratios. Appendix C contains a brief description of the methodology used to develop the population estimates and a discussion of their limitations. Appendix D describes the state and county codes as specified by the "Federal Information Processing Standards" (FIPS) and modifications made to these codes for the CMF. Appendix E is a listing of the FIPS state and county codes on the CMF and the corresponding state and county names.

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## **I. Use of NCHS Data**

All users of NCHS data tapes have been asked to sign a data purchase and use agreement which states that:

- . . The data will only be used for statistical purposes
- B. The users will not release the data to anyone outside their organization.
- C. The users will not attempt to learn the identity of any individual.
- D. The users will inform NCHS of any instance of inadvertent disclosure and not make any use of such information.
- E. The users will not attempt to link the data set with individually identifiable records from any other NCHS or non-NCHS data set.

In addition, with the goal of mutual benefit, NCHS requests the cooperation of recipients of NCHS data tapes in certain actions related to their use.

- A. Any published material derived from data should acknowledge the National Center for Health Statistics as the original source. It should also include a disclaimer which credits any analyses, interpretations, or conclusions reached to the author (recipient of the tape) and not to NCHS, which is responsible only for the original data.
- B. Consumers who wish to publish a technical description of the data will make a reasonable effort to ensure that the description is not inconsistent with that published by NCHS. This does not mean, however, that NCHS will review such descriptions.



1.1.1

## **II. Description of the Compressed Mortality File**

The Compressed Mortality File (CMF) is a county-level national mortality and population data base spanning the years 1968-88. The data base is stored on only three tape cartridges (at 38,000 bpi), two for the mortality data and one for the population data. Differential mortality trends can be efficiently examined at various geographic levels because of the compact nature of the file and because the file contains both the numerators and denominators needed to calculate death rates. The entire CMF has been revised to expand the race and age categories, to update the mortality data, and to incorporate Bureau of the Census intercensal population estimates for the 1980's.

The mortality data base of the CMF is derived from the U.S. records of deaths that occurred during 1968-88. The source records were condensed to 21-byte records by reducing the number of variables included on each record. The variables included on the condensed record are: 1) state and county of residence, 2) year of death, 3) race (white, black, other races) 4) sex, 5) age group at death (16 age groups), 6) underlying cause of death (4-digit ICD code), and (7) 69 or 72 cause of death recode. The number of death records was reduced by about 60 percent by aggregating records that were identical with respect to state and county of residence, year of death, race, sex, age group at death, and underlying cause of death and adding a count field to the aggregate record to represent the number of identical records.

The population data base of the CMF is derived from Bureau of the Census estimates of national, state, and county resident populations. The estimates for 1971-79 and for 1981-88 are intercensal estimates of the July 1 resident population. The 1970 and 1980 estimates are April 1 modified census counts. To permit the calculation of infant mortality rates, NCHS live-birth data were substituted for the estimates of the population under one year of age. The population estimates on this file are by geographic unit (total U.S., state, and county), year, race (white, black, other races), sex, and age group (13 age groups).

### **III. Technical Specifications of the Mortality Data Tape**

The data tape was created on an IBM-3081K according to the following specifications:

DATA SET NAME	CMF.MORT6888
NUMBER OF CARTRIDGE TAPES	3
NUMBER OF RECORDING TRACKS	18
DENSITY	38,000 bpi*
PARITY	Odd
RECORD LENGTH	21
BLOCK SIZE	32739
NUMBER OF RECORDS	17,442,800
RECORDING MODE	EBCDIC Character (Alphanumeric)

\*The data also are available on a 9-track tape recorded at a density of 6250 bits per inch (bpi). At the 6250 bpi density, the file requires three reels of tape.

#### **IV. Technical Specifications of the Population Data Tape**

The data tape was created on an IBM-3081K according to the following specifications:

<b>DATA SET NAME</b>	<b>CMF.POP6888</b>
<b>NUMBER OF CARTRIDGE TAPES</b>	<b>1</b>
<b>NUMBER OF RECORDING TRACKS</b>	<b>18</b>
<b>DENSITY</b>	<b>38,000 bpi*</b>
<b>PARITY</b>	<b>Odd</b>
<b>RECORD LENGTH</b>	<b>138</b>
<b>BLOCK SIZE</b>	<b>32706</b>
<b>NUMBER OF RECORDS</b>	<b>434,670</b>
<b>RECORDING MODE</b>	<b>EBCDIC Character (Alphanumeric)</b>

\*The data also are available on a 9-track tape recorded at a density of 6250 bits per inch (bpi).

## V. Detailed Description of the Mortality Data Tapes

### General description

The data on the mortality tapes, for all years except 1972, are based on records for all deaths occurring in the United States. For 1972, the data are based on a 50 percent sample and weighted by a factor of 2. Deaths to foreign residents are excluded. Deaths to U.S. residents who died abroad are not included on this file. Appendix A provides a description of the vital statistics reporting system maintained by the NCHS.

The source files consisted of 159 and 160-byte records. The source records were condensed to 21-bytes by retaining only a select set of key analysis variables. The variables included on the condensed record are: 1) state and county of residence, 2) year of death (rather than the full date of death), 3) race (recoded to white, black, other races), 4) sex, 5) age group at death (specific age recoded to 16 age groups), 6) underlying cause of death (4-digit ICD code), and 7) 69 or 72 cause of death recode.

Including only these few variables on the file and recoding some of them into a limited number of categories resulted in numerous records having identical values on all of the variables. The number of records on the file was reduced substantially by aggregating records with identical values on all of the variables into one record. A count indicating the number of identical records was added to the aggregate record. For example, two white male residents of Clay County, Alabama, with ages between 35 and 44 years, died from "bronchus and lung, unspecified" (ICD 162.9) in 1979. Their records were combined into one, with a 2 in the count field. Note that there are no records on the file with zero in the count field. If no deaths occurred for a particular combination of variable values, no record appears.

### Specific details

1. Underlying cause of death for the years 1968-78 is classified in accordance with the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States* (ICDA-8) codes<sup>1</sup>. Cause of death for the years 1979-88 is classified in accordance with the *International Classification of Disease, Ninth Revision* (ICD-9) codes<sup>2</sup>. For a further description of the ICD codes see Appendix A or Volume II of the annual mortality volumes produced by the NCHS, such as *Vital Statistics of the United States, 1978, Volume II-Mortality*,<sup>3</sup> or *Vital Statistics of the United States, 1988, Volume II-Mortality*<sup>4</sup>. For a list of comparable ICD codes for the 8th and 9th revisions and estimated comparability ratios, see Appendix B.

2. If the fourth digit of the ICD code is a "blank" on the source file, it is a blank on this file.

3. For injuries and poisonings, the external cause is coded (E800-E999) rather than the Nature of Injury (800-999). The letter "E" is not included in the code.

4. In 1988, if there were three or fewer deaths for a given Georgia county of residence (of deaths occurring in Georgia) with HIV infection (ICD codes \*042-\*044, 795.8) cited as the underlying cause-of-death, these records were assigned a "missing" place of residence code (FIPS code = 13999). See Appendix D.

5. The FIPS state and county codes contain leading zeros in both the 2-byte state code and the 3-byte county code.

## File Layout of the Mortality Data Tapes

This file is sorted by tape locations 6-7, 1-5, 8, 9-10, 11-14.

Tape Location	Field Size	Item and Code Outline	Format
1-2 3-5	2 3	<u>FIPS code</u> (See Appendices D and E)	
		FIPS state code	Numeric
		FIPS county code	Numeric
6-7	2	<u>Year of death</u> (Last two digits)	Numeric
8	1	<u>Race-sex</u>  1 White male 2 White female 3 Black male 4 Black female 5 Other male 6 Other female	Numeric
9-10	2	<u>Age at death</u>  01 under 1 day 02 1-6 days 03 7-27 days 04 28-364 days 05 1-4 years 06 5-9 years 07 10-14 years 08 15-19 years 09 20-24 years 10 25-34 years 11 35-44 years 12 45-54 years 13 55-64 years 14 65-74 years 15 75-84 years 16 85+ years 99 Unknown	Numeric

Tape Location	Field Size	Item and Code Outline	For at
11-14	4	<u>ICD code for underlying cause of death</u>  1968-78: ICDA-8 1979-88: ICD-9	Numeric
15-17	3	<u>Cause of Death Recode</u>  1968-78: 69 Cause Recode 1979-88: 72 Cause Recode	Numeric
18-21	4	<u>Number of deaths</u>	Numeric



## **VI. Detailed Description of the Population Data Tapes**

### **General description**

There are national, state, and county population estimates on the population tape of the CMF. The population estimates are based on U.S. Bureau of the Census estimates of U.S., state, and county resident populations. The estimates for 1971-79 and 1981-88 are intercensal estimates of July 1 resident populations. The 1970 and 1980 population estimates are April 1 modified census counts. The 1968 and 1969 state and county population estimates were calculated by NCHS using linear extrapolation. A brief description of the population estimates is provided here; a detailed description is provided in Appendix C.

The sum of the population estimates of counties within a state may not equal the state population estimate, and the sum of all state population estimates or all county population estimates may not equal the national population estimate. This is due to rounding error that results because fractional estimates are not allowed. Thus, the national population estimates should be used when calculating national death rates and the state population estimates should be used when calculating state death rates.

Estimates of U.S. population totals can be obtained from the CMF by summing the national age-race-sex group estimates. Because the national population estimates for non-censal years are rounded to the nearest 1,000, aggregating across age-race-sex groups to form totals may result in rounding error. The population totals used by NCHS to calculate published death rates are rounded to the nearest 1,000 after aggregating across the groups rather than before aggregating. Thus, death rates calculated using the U.S. population totals from the CMF may differ from those published by NCHS.

### **Specific details**

#### **1. Brief description of population estimates**

**1968-69 population estimates** - National population estimates are U.S. Bureau of the Census intercensal estimates of the July 1 resident population by race, sex, and age group. State and county population estimates were calculated by NCHS using linear extrapolation from the corresponding July 1, 1970 and July 1, 1971 estimates.

**1970 population estimates** - National, state, and county population estimates are from a modified version of the April 1, 1970 census. The original census counts were modified by the U.S. Bureau of the Census: 1) for errors discovered in the data, 2) for race misclassification - persons of Hispanic origin who reported their race as "other" were recorded as "white".

**1971-79 population estimates** - National and county estimates are U.S. Bureau of the Census intercensal estimates of the July 1 resident population. The Bureau of the Census did not produce state population estimates by age, race, and sex for the 70's. Therefore, the state population estimates for 1971-79 on this file are simply the sum of the population estimates for the counties in each state.

Three Virginia independent cities, Manassas, Manassas Park, and Poquoson did not appear on the Census file. While these independent cities are not on the mortality file for 1968-78, they are on the file for 1979 onwards. Therefore, the 1979 populations for these three cities were estimated from the July 1, 1980 and July 1, 1981 estimates of these cities. The 1979 population estimates for the counties containing the cities were reduced by the estimated city populations.

**1980 population estimates** - National, state, and county population estimates are from a modified version of the April 1, 1980 census. The original census counts were modified by the U.S. Bureau of the Census: 1) persons who reported their race as "other" (the majority being of Hispanic origin) were reassigned to one of the official race groups, 2) an adjustment was made for the overcount of centenarians

April 1, 1980 population estimates for three Virginia independent cities, (Manassas, Manassas Park, and Poquoson) had to be extrapolated from July 1, 1980 estimates. The April 1 populations for the three cities were calculated as a proportion of the April 1 county population, where the proportion was calculated from the July 1, 1980 estimates. The April 1 population estimates for the counties containing the three cities were reduced by the cities estimated April 1 populations.

**1981-88 population estimates** - National, state, and county estimates are Bureau of the Census intercensal estimates of the July 1 resident population.

2. The following modifications of the population estimates were made by NCHS:

(a) To permit the calculation of infant mortality rates, NCHS live-birth data were substituted for the estimates of the population under one year of age. The race code for these records is derived from "race of mother".

(b) When the age group 1-4 years did not appear on the Census file, the age group 0-4 years was multiplied by 0.8 to obtain an estimate of the population 1-4 years.

(c) The national population estimates for non-census years were rounded to the nearest 1,000 to agree with Division of Vital Statistics practices. When aggregating across race-sex or age groups this may result in rounding errors.

3. There is one record on the file for each geographic unit (total U.S., state, county) x year x race-sex group. National, state, and county records can be identified on the file by using the FIPS code or the record type variable in location 138. National population records have a FIPS code of "00000". State population records have a valid 2-digit FIPS state code and a county code of "000". The record type variable assumes the value "1" for national records, "2" for state records, and "3" for county records.

The FIPS state and county codes contain leading zeros in both the 2-byte state code and the 3-byte county code.

4. In 1988, there was an additional county in Georgia with a "missing" county code of "999" (see Appendix D). The six records for this county have population counts of zero.

## File Layout of the Population Data Tape

This file is sorted by tape locations 6-7, 1-5, 8.

Tape Location	Field Size	Item and Code Outline	Format
<hr/>			
		<u>FIPS codes</u> (See Appendices D and E)	
1-2	2	FIPS state code	Numeric
3-5	3	FIPS county code	Numeric
6-7	2	<u>Year</u> (Last two digits)	Numeric
8	1	<u>Race-sex</u>	Numeric
		1 White male	
		2 White female	
		3 Black male	
		4 Black female	
		5 Other male	
		6 Other female	
9-16	8	<u>Number of live births</u>	Numeric
17-24	8	<u>Population in age group: 1-4 years</u>	Numeric
25-32	8	<u>Population in age group: 5-9 years</u>	Numeric
33-40	8	<u>Population in age group: 10-14 years</u>	Numeric
41-48	8	<u>Population in age group: 15-19 years</u>	Numeric
49-56	8	<u>Population in age group: 20-24 years</u>	Numeric
57-64	8	<u>Population in age group: 25-34 years</u>	Numeric
65-72	8	<u>Population in age group: 35-44 years</u>	Numeric
73-80	8	<u>Population in age group: 45-54 years</u>	Numeric
81-88	8	<u>Population in age group: 55-64 years</u>	Numeric
89-96	8	<u>Population in age group: 65-74 years</u>	Numeric
97-104	8	<u>Population in age group: 75-84 years</u>	Numeric

<b>Tape Location</b>	<b>Field Size</b>	<b>Item and ode Outline</b>	<b>Format</b>
105-112	8	<u>Population in age group: 85 + years</u>	Numeric
113-137	25	<u>County name</u> (See Appendix E)	Alpha
138	1	<u>Record type</u>  1 National population record 2 State population record 3 County population record	Numeric

13. 14. 15.

## APPENDIX A

### Technical Details for Mortality Data

#### SOURCES OF DATA

##### Death and fetal-death statistics

Mortality statistics for 1988 are, as for all previous years except 1972, based on information from records of all deaths occurring in the United States. Fetal-death statistics for every year are based on all reports of fetal death received by the National Center for Health Statistics (NCHS).

The death-registration system and the fetal-death reporting system of the United States encompass the 50 States, the District of Columbia, New York City (which is independent of New York State for the purpose of death registration), Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands. In the statistical tabulations of this publication, *United States* refers only to the aggregate of the 50 States (including New York City) and the District of Columbia. Tabulations for Guam, Puerto Rico, and the Virgin Islands are shown separately in this volume. No data have ever been included for American Samoa or the Trust Territory of the Pacific Islands.

The Virgin Islands was admitted to the "registration area" for deaths in 1924; Puerto Rico, in 1932; and Guam, in 1970. Tabulations of death statistics for Puerto Rico and the Virgin Islands were regularly shown in the annual volumes of *Vital Statistics of the United States* from the year of their admission through 1971 except for the years 1967 through 1969, and tabulations for Guam were included for 1970 and 1971. Death statistics for Puerto Rico, the Virgin Islands, and Guam were not included in the 1972 volume but have been included in section 8 of the volumes for each of the years 1973-78 and in section 9 beginning with 1979. Information for 1972 for these three areas was published in the respective annual vital statistics reports of the Department of Health of the Commonwealth of Puerto Rico, the Department of Health of the Virgin Islands, and the Department of Public Health and Social Services of the Government of Guam.

Procedures used by NCHS to collect death statistics have changed over the years. Before 1971, tabulations of deaths and fetal deaths were based solely on information obtained by NCHS from copies of the original certificates. The information from these copies was edited, coded, and tabulated. For 1960-70, all mortality information taken from these records was transferred by NCHS to magnetic tape for computer processing.

Beginning with 1971, an increasing number of States have provided NCHS with computer tapes of data coded according to NCHS specifications and provided to NCHS through the Vital Statistics Cooperative Program. The year in which State-coded demographic data were first transmitted on computer tape to NCHS is shown below for each of the States, New York City, Puerto Rico, and the District of Columbia, all of which now furnish demographic or nonmedical data on tape.

1971

Florida

1972

Maine  
Missouri  
New Hampshire  
Rhode Island  
Vermont

1973

Colorado  
Michigan  
New York (except  
New York City)

1974

Illinois  
Iowa  
Kansas  
Montana  
Nebraska  
Oregon  
South Carolina

1975

Louisiana  
Maryland  
North Carolina  
Oklahoma  
Tennessee  
Virginia  
Wisconsin

1976

Alabama  
Kentucky  
Minnesota  
Nevada  
Texas  
West Virginia

1977

Alaska  
Idaho  
Massachusetts  
New York City  
Ohio  
Puerto Rico

1978

Indiana  
Utah  
Washington

1979

Connecticut  
Hawaii  
Mississippi  
New Jersey  
Pennsylvania  
Wyoming

1980

Arkansas  
New Mexico  
South Dakota

1982

North Dakota

1985

Arizona  
California  
Delaware  
Georgia  
District of Columbia

For the Virgin Islands and Guam, mortality statistics for 1988 are based on information obtained directly by NCHS from copies of the original certificates received from the registration offices.

In 1974, States began coding medical (cause-of-death) data on computer tapes according to NCHS specifications. The

year in which State-coded medical data were first transmitted to NCHS is shown below for the 27 States now furnishing such data. Some States coded medical items for other States, under contract.

1974	1983
Iowa	Minnesota
Michigan	
1975	1984
Louisiana	Maryland
Nebraska	New York State (except
North Carolina	New York City)
Virginia	Vermont
Wisconsin	
1980	1986
Colorado	California
Kansas	Florida
Massachusetts	Texas
Mississippi	1988
New Hampshire	Alaska
Pennsylvania	Delaware
South Carolina	Idaho
1981	North Dakota
Maine	Wyoming

For 1988 and previous years except 1972, NCHS coded the medical information from copies of the original certificates received from the registration offices for all deaths occurring in those States that were not furnishing NCHS with medical data coded according to NCHS specifications. For 1981 and 1982, it was necessary to change these procedures because of a backlog in coding and processing that resulted from personnel and budgetary restrictions. To produce the mortality files on a timely basis with reduced resources, NCHS used State-coded underlying cause-of-death information supplied by 19 States for 50 percent of the records; for the other 50 percent of the records for these States as well as for 100 percent of the records for the remaining 21 registration areas, NCHS coded the medical information.

Mortality statistics for 1972 were based on information obtained from a 50-percent sample of death records instead of from all records as in other years. The sample resulted from personnel and budgetary restrictions. Sampling variation associated with the 50-percent sample is described below in the section "Estimates of errors arising from 50-percent sample for 1972."

Fetal-death data are obtained directly from copies of original reports of fetal deaths received by NCHS, except New York State (excluding New York City), which submitted State-coded data in 1988. Fetal-death data are not published by NCHS for the Virgin Islands and Guam.

## Standard certificates and reports

The U.S. Standard Certificate of Death and the U.S. Standard Report of Fetal Death, issued by the Public Health Service, have served for many years as the principal means of attaining uniformity in the content of documents used to collect information on these events. They have been modified in each State to the extent required by the particular needs of the State or by special provisions of the State vital statistics law. However, the certificates or reports of most States conform closely in content and arrangement to the standards.

The first issue of the U.S. Standard Certificate of Death appeared in 1900. Since then, it has been revised periodically by the national vital statistics agency through consultation with State health officers and registrars; Federal agencies concerned with vital statistics; national, State, and county medical societies; and others working in such fields as public health, social welfare, demography, and insurance. This revision procedure has assured careful evaluation of each item in terms of its current and future usefulness for legal, medical and health, demographic, and research purposes. New items have been added when necessary, and old items have been modified to ensure better reporting, or in some cases have been dropped when their usefulness appeared to be limited.

New revisions of the U.S. Standard Certificate of Death and the U.S. Standard Report of Fetal Death were recommended for State use beginning on January 1, 1978. The U.S. Standard Certificate of Death and the U.S. Standard Report of Fetal Death are shown in figures 7-A and 7-B. The certificate of death shown in figure 7-A is for use by a physician, a medical examiner, or a coroner. Two other forms of the U.S. Standard Certificate of Death are available: they are similar to the one shown, except that the section on certification is designed for the physician's signature on one, and for the medical examiner's or coroner's signature on the other.

Among the changes in the new revision were the additions of an item asking, "If Hosp. or Inst., Indicate DOA, OP/Emer. Rm., Inpatient" and an item asking, "Was Decedent Ever in U.S. Armed Forces?" The latter item was previously on the certificate but was deleted from 1968 through 1977. An item on whether autopsy findings were considered for determining cause of death was dropped.

## HISTORY

The first death statistics published by the Federal Government concerned events in 1850 and were based on statistics collected during the decennial census of that year. In 1880 a national "registration area" was created for deaths. Originally consisting of two States (Massachusetts and New Jersey), the District of Columbia, and several large cities having efficient systems for death registrations, the death-registration area continued to expand until 1933, when it included the entire United States for the first time. Tables that show data for death-registration States include the District of Columbia for all years; registration cities in nonregistration States are not included. For more details on the history of the death-registration area, see the Technical Appendix in *Vital Statistics of the United*

FIGURE 7-A.

PHYSICIAN MEDICAL EXAMINER OR CORONER  
U.S. STANDARD  
**CERTIFICATE OF DEATH**

Form Approved  
OMB No. 881-1001

LOCAL FILE NUMBER \_\_\_\_\_ STATE FILE NUMBER \_\_\_\_\_

DECEDENT NAME FIRST MIDDLE LAST SEX DATE OF DEATH Mo Day Yr

1 RACE (Indicate by check American Indian, Alaska Native, or Hispanic) AGE - Last birthday Yr M DAY MONTH HOURS MINUTE DATE OF BIRTH Mo Day Yr COUNTY OF DEATH

2 CITY, TOWN OR LOCATION OF DEATH HOSPITAL OR OTHER INSTITUTION (Name, full name, street and number) 13 HOSP OR INST - Name, Bldg, Apt, Room, Inst. No.

7b STATE OF BIRTH (State, U.S. or Foreign) 7c CITIZEN OR ORIGIN (Country) 7d MARRIED, NEVER MARRIED, DIVORCED, WIDOWED, SURVIVING SPOUSE (Full name, date of marriage) 7e WAS DECEDENT EVER IN U.S. ARMED FORCES? (Specify Year - Year)

8 SOCIAL SECURITY NUMBER 9 USUAL OCCUPATION (Last kind of work done during year of reporting the date of death) 10 KIND OF BUSINESS OR INDUSTRY

11 RESIDENCE STATE 12 COUNTY 13a CITY, TOWN OR LOCATION 13b STREET AND NUMBER 13c INSIDE CITY LIMITS (Name of City or Town)

14 FATHER NAME FIRST MIDDLE LAST 15 MOTHER MAIDEN NAME FIRST MIDDLE LAST

16 PRECEDENT NAME (Full name) 17 MAILING ADDRESS STREET OR R.F.D. NO. CITY OR TOWN STATE ZIP

18a BURIAL, CREMATION, REMOVAL, OTHER SERVICE 18b CEMETERY OR CREMATORY NAME 18c LOCATION CITY OR TOWN STATE

19a FUNERAL SERVICE LICENSEE OR PERSON ACTING AS SUCH 19b NAME OF FACILITY 19c ADDRESS OF FACILITY

20a 20b 20c 20d 20e 20f 20g 20h 20i 20j 20k 20l 20m 20n 20o 20p 20q 20r 20s 20t 20u 20v 20w 20x 20y 20z

21a 21b 21c 21d 21e 21f 21g 21h 21i 21j 21k 21l 21m 21n 21o 21p 21q 21r 21s 21t 21u 21v 21w 21x 21y 21z

22a 22b 22c 22d 22e 22f 22g 22h 22i 22j 22k 22l 22m 22n 22o 22p 22q 22r 22s 22t 22u 22v 22w 22x 22y 22z

23a 23b 23c 23d 23e 23f 23g 23h 23i 23j 23k 23l 23m 23n 23o 23p 23q 23r 23s 23t 23u 23v 23w 23x 23y 23z

24a 24b 24c 24d 24e 24f 24g 24h 24i 24j 24k 24l 24m 24n 24o 24p 24q 24r 24s 24t 24u 24v 24w 24x 24y 24z

25a 25b 25c 25d 25e 25f 25g 25h 25i 25j 25k 25l 25m 25n 25o 25p 25q 25r 25s 25t 25u 25v 25w 25x 25y 25z

26a 26b 26c 26d 26e 26f 26g 26h 26i 26j 26k 26l 26m 26n 26o 26p 26q 26r 26s 26t 26u 26v 26w 26x 26y 26z

27a 27b 27c 27d 27e 27f 27g 27h 27i 27j 27k 27l 27m 27n 27o 27p 27q 27r 27s 27t 27u 27v 27w 27x 27y 27z

28a 28b 28c 28d 28e 28f 28g 28h 28i 28j 28k 28l 28m 28n 28o 28p 28q 28r 28s 28t 28u 28v 28w 28x 28y 28z

29a 29b 29c 29d 29e 29f 29g 29h 29i 29j 29k 29l 29m 29n 29o 29p 29q 29r 29s 29t 29u 29v 29w 29x 29y 29z

30a 30b 30c 30d 30e 30f 30g 30h 30i 30j 30k 30l 30m 30n 30o 30p 30q 30r 30s 30t 30u 30v 30w 30x 30y 30z

31a 31b 31c 31d 31e 31f 31g 31h 31i 31j 31k 31l 31m 31n 31o 31p 31q 31r 31s 31t 31u 31v 31w 31x 31y 31z

32a 32b 32c 32d 32e 32f 32g 32h 32i 32j 32k 32l 32m 32n 32o 32p 32q 32r 32s 32t 32u 32v 32w 32x 32y 32z

33a 33b 33c 33d 33e 33f 33g 33h 33i 33j 33k 33l 33m 33n 33o 33p 33q 33r 33s 33t 33u 33v 33w 33x 33y 33z

34a 34b 34c 34d 34e 34f 34g 34h 34i 34j 34k 34l 34m 34n 34o 34p 34q 34r 34s 34t 34u 34v 34w 34x 34y 34z

35a 35b 35c 35d 35e 35f 35g 35h 35i 35j 35k 35l 35m 35n 35o 35p 35q 35r 35s 35t 35u 35v 35w 35x 35y 35z

36a 36b 36c 36d 36e 36f 36g 36h 36i 36j 36k 36l 36m 36n 36o 36p 36q 36r 36s 36t 36u 36v 36w 36x 36y 36z

37a 37b 37c 37d 37e 37f 37g 37h 37i 37j 37k 37l 37m 37n 37o 37p 37q 37r 37s 37t 37u 37v 37w 37x 37y 37z

38a 38b 38c 38d 38e 38f 38g 38h 38i 38j 38k 38l 38m 38n 38o 38p 38q 38r 38s 38t 38u 38v 38w 38x 38y 38z

39a 39b 39c 39d 39e 39f 39g 39h 39i 39j 39k 39l 39m 39n 39o 39p 39q 39r 39s 39t 39u 39v 39w 39x 39y 39z

40a 40b 40c 40d 40e 40f 40g 40h 40i 40j 40k 40l 40m 40n 40o 40p 40q 40r 40s 40t 40u 40v 40w 40x 40y 40z

41a 41b 41c 41d 41e 41f 41g 41h 41i 41j 41k 41l 41m 41n 41o 41p 41q 41r 41s 41t 41u 41v 41w 41x 41y 41z

42a 42b 42c 42d 42e 42f 42g 42h 42i 42j 42k 42l 42m 42n 42o 42p 42q 42r 42s 42t 42u 42v 42w 42x 42y 42z

43a 43b 43c 43d 43e 43f 43g 43h 43i 43j 43k 43l 43m 43n 43o 43p 43q 43r 43s 43t 43u 43v 43w 43x 43y 43z

44a 44b 44c 44d 44e 44f 44g 44h 44i 44j 44k 44l 44m 44n 44o 44p 44q 44r 44s 44t 44u 44v 44w 44x 44y 44z

45a 45b 45c 45d 45e 45f 45g 45h 45i 45j 45k 45l 45m 45n 45o 45p 45q 45r 45s 45t 45u 45v 45w 45x 45y 45z

46a 46b 46c 46d 46e 46f 46g 46h 46i 46j 46k 46l 46m 46n 46o 46p 46q 46r 46s 46t 46u 46v 46w 46x 46y 46z

47a 47b 47c 47d 47e 47f 47g 47h 47i 47j 47k 47l 47m 47n 47o 47p 47q 47r 47s 47t 47u 47v 47w 47x 47y 47z

48a 48b 48c 48d 48e 48f 48g 48h 48i 48j 48k 48l 48m 48n 48o 48p 48q 48r 48s 48t 48u 48v 48w 48x 48y 48z

49a 49b 49c 49d 49e 49f 49g 49h 49i 49j 49k 49l 49m 49n 49o 49p 49q 49r 49s 49t 49u 49v 49w 49x 49y 49z

50a 50b 50c 50d 50e 50f 50g 50h 50i 50j 50k 50l 50m 50n 50o 50p 50q 50r 50s 50t 50u 50v 50w 50x 50y 50z

51a 51b 51c 51d 51e 51f 51g 51h 51i 51j 51k 51l 51m 51n 51o 51p 51q 51r 51s 51t 51u 51v 51w 51x 51y 51z

52a 52b 52c 52d 52e 52f 52g 52h 52i 52j 52k 52l 52m 52n 52o 52p 52q 52r 52s 52t 52u 52v 52w 52x 52y 52z

53a 53b 53c 53d 53e 53f 53g 53h 53i 53j 53k 53l 53m 53n 53o 53p 53q 53r 53s 53t 53u 53v 53w 53x 53y 53z

54a 54b 54c 54d 54e 54f 54g 54h 54i 54j 54k 54l 54m 54n 54o 54p 54q 54r 54s 54t 54u 54v 54w 54x 54y 54z

55a 55b 55c 55d 55e 55f 55g 55h 55i 55j 55k 55l 55m 55n 55o 55p 55q 55r 55s 55t 55u 55v 55w 55x 55y 55z

56a 56b 56c 56d 56e 56f 56g 56h 56i 56j 56k 56l 56m 56n 56o 56p 56q 56r 56s 56t 56u 56v 56w 56x 56y 56z

57a 57b 57c 57d 57e 57f 57g 57h 57i 57j 57k 57l 57m 57n 57o 57p 57q 57r 57s 57t 57u 57v 57w 57x 57y 57z

58a 58b 58c 58d 58e 58f 58g 58h 58i 58j 58k 58l 58m 58n 58o 58p 58q 58r 58s 58t 58u 58v 58w 58x 58y 58z

59a 59b 59c 59d 59e 59f 59g 59h 59i 59j 59k 59l 59m 59n 59o 59p 59q 59r 59s 59t 59u 59v 59w 59x 59y 59z

60a 60b 60c 60d 60e 60f 60g 60h 60i 60j 60k 60l 60m 60n 60o 60p 60q 60r 60s 60t 60u 60v 60w 60x 60y 60z

61a 61b 61c 61d 61e 61f 61g 61h 61i 61j 61k 61l 61m 61n 61o 61p 61q 61r 61s 61t 61u 61v 61w 61x 61y 61z

62a 62b 62c 62d 62e 62f 62g 62h 62i 62j 62k 62l 62m 62n 62o 62p 62q 62r 62s 62t 62u 62v 62w 62x 62y 62z

63a 63b 63c 63d 63e 63f 63g 63h 63i 63j 63k 63l 63m 63n 63o 63p 63q 63r 63s 63t 63u 63v 63w 63x 63y 63z

64a 64b 64c 64d 64e 64f 64g 64h 64i 64j 64k 64l 64m 64n 64o 64p 64q 64r 64s 64t 64u 64v 64w 64x 64y 64z

65a 65b 65c 65d 65e 65f 65g 65h 65i 65j 65k 65l 65m 65n 65o 65p 65q 65r 65s 65t 65u 65v 65w 65x 65y 65z

66a 66b 66c 66d 66e 66f 66g 66h 66i 66j 66k 66l 66m 66n 66o 66p 66q 66r 66s 66t 66u 66v 66w 66x 66y 66z

67a 67b 67c 67d 67e 67f 67g 67h 67i 67j 67k 67l 67m 67n 67o 67p 67q 67r 67s 67t 67u 67v 67w 67x 67y 67z

68a 68b 68c 68d 68e 68f 68g 68h 68i 68j 68k 68l 68m 68n 68o 68p 68q 68r 68s 68t 68u 68v 68w 68x 68y 68z

69a 69b 69c 69d 69e 69f 69g 69h 69i 69j 69k 69l 69m 69n 69o 69p 69q 69r 69s 69t 69u 69v 69w 69x 69y 69z

70a 70b 70c 70d 70e 70f 70g 70h 70i 70j 70k 70l 70m 70n 70o 70p 70q 70r 70s 70t 70u 70v 70w 70x 70y 70z

71a 71b 71c 71d 71e 71f 71g 71h 71i 71j 71k 71l 71m 71n 71o 71p 71q 71r 71s 71t 71u 71v 71w 71x 71y 71z

72a 72b 72c 72d 72e 72f 72g 72h 72i 72j 72k 72l 72m 72n 72o 72p 72q 72r 72s 72t 72u 72v 72w 72x 72y 72z

73a 73b 73c 73d 73e 73f 73g 73h 73i 73j 73k 73l 73m 73n 73o 73p 73q 73r 73s 73t 73u 73v 73w 73x 73y 73z

74a 74b 74c 74d 74e 74f 74g 74h 74i 74j 74k 74l 74m 74n 74o 74p 74q 74r 74s 74t 74u 74v 74w 74x 74y 74z

75a 75b 75c 75d 75e 75f 75g 75h 75i 75j 75k 75l 75m 75n 75o 75p 75q 75r 75s 75t 75u 75v 75w 75x 75y 75z

76a 76b 76c 76d 76e 76f 76g 76h 76i 76j 76k 76l 76m 76n 76o 76p 76q 76r 76s 76t 76u 76v 76w 76x 76y 76z

77a 77b 77c 77d 77e 77f 77g 77h 77i 77j 77k 77l 77m 77n 77o 77p 77q 77r 77s 77t 77u 77v 77w 77x 77y 77z

78a 78b 78c 78d 78e 78f 78g 78h 78i 78j 78k 78l 78m 78n 78o 78p 78q 78r 78s 78t 78u 78v 78w 78x 78y 78z

79a 79b 79c 79d 79e 79f 79g 79h 79i 79j 79k 79l 79m 79n 79o 79p 79q 79r 79s 79t 79u 79v 79w 79x 79y 79z

80a 80b 80c 80d 80e 80f 80g 80h 80i 80j 80k 80l 80m 80n 80o 80p 80q 80r 80s 80t 80u 80v 80w 80x 80y 80z

81a 81b 81c 81d 81e 81f 81g 81h 81i 81j 81k 81l 81m 81n 81o 81p 81q 81r 81s 81t 81u 81v 81w 81x 81y 81z

82a 82b 82c 82d 82e 82f 82g 82h 82i 82j 82k 82l 82m 82n 82o 82p 82q 82r 82s 82t 82u 82v 82w 82x 82y 82z

83a 83b 83c 83d 83e 83f 83g 83h 83i 83j 83k 83l 83m 83n 83o 83p 83q 83r 83s 83t 83u 83v 83w 83x 83y 83z

84a 84b 84c 84d 84e 84f 84g 84h 84i 84j 84k 84l 84m 84n 84o 84p 84q 84r 84s 84t 84u 84v 84w 84x 84y 84z

85a 85b 85c 85d 85e 85f 85g 85h 85i 85j 85k 85l 85m 85n 85o 85p 85q 85r 85s 85t 85u 85v 85w 85x 85y 85z

86a 86b 86c 86d 86e 86f 86g 86h 86i 86j 86k 86l 86m 86n 86o 86p 86q 86r 86s 86t 86u 86v 86w 86x 86y 86z

87a 87b 87c 87d 87e 87f 87g 87h 87i 87j 87k 87l 87m 87n 87o 87p 87q 87r 87s 87t 87u 87v 87w 87x 87y 87z

88a 88b 88c 88d 88e 88f 88g 88h 88i 88j 88k 88l 88m 88n 88o 88p 88q 88r 88s 88t 88u 88v 88w 88x 88y 88z

89a 89b 89c 89d 89e 89f 89g 89h 89i 89j 89k 89l 89m 89n 89o 89p 89q 89r 89s 89t 89u 89v 89w 89x 89y 89z

90a 90b 90c 90d 90e 90f 90g 90h 90i 90j 90k 90l 90m 90n 90o 90p 90q 90r 90s 90t 90u 90v 90w 90x 90y 90z

91a 91b 91c 91d 91e 91f 91g 91h 91i 91j 91k 91l 91m 91n 91o 91p 91q 91r 91s 91t 91u 91v 91w 91x 91y 91z

92a 92b 92c 92d 92e 92f 92g 92h 92i 92j 92k 92l 92m 92n 92o 92p 92q 92r 92s 92t 92u 92v 92w 92x 92y 92z

93a 93b 93c 93d 93e 93f 93g 93h 93i 93j 93k 93l 93m 93n 93o 93p 93q 93r 93s 93t 93u 93v 93w 93x 93y 93z

94a 94b 94c 94d 94e 94f 94g 94h 94i 94j 94k 94l 94m 94n 94o 94p 94q 94r 94s 94t 94u 94v 94w 94x 94y 94z

95a 95b 95c 95d 95e 95f 95g 95h 95i 95j 95k 95l 95m 95n 95o 95p 95q 95r 95s 95t 95u 95v 95w 95x 95y 95z

96a 96b 96c 96d 96e 96f 96g 96h 96i 96j 96k 96l 96m 96n 96o 96p 96q 96r 96s 96t 96u 96v 96w 96x 96y 96z

97a 97b 97c 97d 97e 97f 97g 97h 97i 97j 97k 97l 97m 97n 97o 97p 97q 97r 97s 97t 97u 97v 97w 97x 97y 97z

98a 98b 98c 98d 98e 98f 98g 98h 98i 98j 98k 98l 98m 98n 98o 98p 98q 98r 98s 98t 98u 98v 98w 98x 98y 98z

99a 99b 99c 99d 99e 99f 99g 99h 99i 99j 99k 99l 99m 99n 99o 99p 99q 99r 99s 99t 99u 99v 99w 99x 99y 99z

100a 100b 100c 100d 100e 100f 100g 100h 100i 100j 100k 100l 100m 100n 100o 100p 100q 100r 100s 100t 100u 100v 100w 100x 100y 100z

101a 101b 101c 101d 101e 101f 101g 101h 101i 101j 101k 101l 101m 101n 101o 101p 101q 101r 101s 101t 101u 101v 101w 101x 101y 101z

102a 102b 102c 102d 102e 102f 102g 102h 102i 102j 102k 102l 102m 102n 102o 102p 102q 102r 102s 102t 102u 102v 102w 102x 102y 102z

103a 103b 103c 103d 103e 103f 103g 103h 103i 103j 103k 103l 103m 103n 103o 103p 103q 103r 103s 103t 103u 103v 103w 103x 103y 103z

104a 104b 104c 104d 104e 104f 104g 104h 104i 104j 104k 104l 104m 104n 104o 104p 104q 104r 104s 104t 104u 104v 104w 104x 104y 104z

105a 105b 105c 105d 105e 105f 105g 105h 105i 105j 105k 105l 105m 105n 105o 105p 105q 105r 105s 105t 105u 105v 105w 105x 105y 105z

106a 106b 106c 106d 106e 106f 106g 106h 106i 106j 106k 106l 106m 106n 106o 106p 106q 106r 106s 106t 106u 106v 106w 106x 106y 106z

107a 107b 107c 107d 107e 107f 107g 107h 107i 107j 107k 107l 107m 107n 107o 107p 107q 107r 107s 107t 107u 107v 107w 107x 107y 107z

108a 108b 108c 108d 108e 108f 108g 108h 108i 108j 108k 108l 108m 108n 108o 108p 108q 108r 108s 108t 108u 108v 108w 108x 108y 108z

109a 109b 109c 109d 109e 109f 109g 109h 109i 109j 109k 109l 109m 109n 109o 109p 109q 109r 109s 109t 109u 109v 109w 109x 109y 109z

110a 110b 110c 110d 110e 110f 110g 110h 110i 110j 110k 110l 110m 110n 110o 110p 110q 110r 110s 110t 110u 110v 110w 110x 110y 110z

111a 111b 111c 111d 111e 111f 111g 111h 111i 111j 111k 111l 111m 111n 111o 111p 111q 111r 111s 111t 111u 111v 111w 111x 111y 111z

112a 112b 112c 112d 112e 112f 112g 112h 112i 112j 112k 112l 112m 112n 112o 112p 112q 112r 112s 112t 112u 112v 112w 112x 112y 112z

113a 113b 113c 113d 113e 113f 113g 113h 113i 113j 113k 113l 113m 113n 113o 113p 113q 113r 113s 113t 113u 113v 113w 113x 113y 113z

114a 114b 114c 114d 114e 114f 114g 114h 114i 114j 114k 114l 114m 114n 114o 114p 114q 114r 114s 114t 114u 114v 114w 114x 114y 114z

115a 115b 115c 115d 115e 115f 115g 115h 115i 115j 115k 115l 115m 115n 115o 115p 115q 115r 115s 115t 115u 115v 115w 115x 115y 115z

116a 116b 116c 116d 116e 116f 116g 116h 116i 116j 116k 116l 116m 116n 116o 116p 116q 116r 116s 116t 116u 116v 116w 116x 116y 116z

117a 117b 117c 117d 117e 117f 117g 117h 117i 117j 117k 117l 117m 117n 117o 117p 117q 117r 117s 117t 117u 117v 117w 117x 117y 117z

118a 118b 118c 118d 118e 118f 118g 118h 118i 118j 118k 118l 118m 118n 118o 118p 118q 118r 118s 118t 118u 118v 118w 118x 118y 118z

119a 119b 119c 119d 119e 119f 119g 119h 119i 119j 119k 119l 119m 119n 119o 119p 119q 119r 119s 119t 119u 119v 119w 119x 119y 119z

120a 120b 120c 120d 120e 120f 120g 120h 120i 120j 120k 120l 120m 120n 120o 120p 120q 120r 120s 120t 120u 120v 120w 120x 120y 120z

121a 121b 121c 121d 121e 121f 121g 121h 121i 121j 121k 121l 121m 121n 121o 121p 121q 121r 121s 121t 121u 121v 121w 121x 121y 121z

122a 122b 122c 122d 122e 122f 122g 122h 122i 122j 122k 122l 122m 122n 122o 122p 122q 122r 122s





United States were allocated as deaths of residents of the balance of the county in which they occurred.

*Residence error*—Results of a 1960 study showed that the classification of residence information on the death certificates corresponded closely to the residence classification of the census records for the decedents whose records were matched (3).

A comparison of the results of this study of deaths with those for a previous matched record study of births (4) showed that the quality of residence data had considerably improved between 1950 and 1960. Both studies found that events in urban areas were overstated by the NCHS classification in comparison with the U.S. Bureau of the Census classification. The magnitude of the difference was substantially less for deaths in 1960 than it was for births in 1950.

The improvement is attributed to an item added in 1956 to the U.S. Standard Certificates of Birth and of Death, asking if residence was inside or outside city limits. This new item aided in properly allocating the residence of persons living near cities but outside the corporate limits.

### Geographic classification

The rules followed in the classification of geographic areas for deaths and fetal deaths are contained in the two instruction manuals referred to previously (1,2). The geographic codes assigned by the National Center for Health Statistics during data reduction of source information on birth, death, and fetal-death records are given in another instruction manual (5). Beginning with 1982 data, the geographic codes were modified to reflect results of the 1980 census. For 1970–81, codes are based on results of the 1970 census.

*Standard metropolitan statistical areas*—The standard metropolitan statistical areas (SMSA's) used in this volume are those established by the U.S. Office of Management and Budget (6) from final 1980 census population counts and used by the U.S. Bureau of the Census, except in the New England States.

Except in the New England States, an SMSA is a county or a group of contiguous counties containing a city of 50,000 inhabitants or more or an urbanized area of 50,000 with a total metropolitan population of at least 100,000. In addition to the county or counties containing such a city or urbanized area, contiguous counties are included in an SMSA if, according to specified criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city or urbanized area (7).

In the New England States the U.S. Office of Management and Budget uses towns and cities rather than counties as geographic components of SMSA's. The National Center for Health Statistics cannot, however, use the SMSA classification for these States because its data are not coded to identify all towns. Instead, NCHS uses New England County Metropolitan Areas (NECMA's). Made up of county units, these areas are established by the U.S. Office of Management and Budget (7,8).

*Metropolitan and nonmetropolitan counties*—Independent cities and counties included in SMSA's or in NECMA's are

included in data for metropolitan counties; all other counties are classified as nonmetropolitan.

*Population-size groups*—Vital statistics data for cities and certain other urban places in 1988 are classified according to the population enumerated in the 1980 Census of Population. Data are available for individual cities and other urban places of 10,000 or more population. Data for the remaining areas not separately identified are shown in the tables under the heading "balance of area" or "balance of county." For the years 1970–81, classification of areas was determined by the population enumerated in the 1970 Census of Population. Beginning with 1982 data, as a result of changes in the enumerated population between 1970 and 1980, some urban places identified in previous reports are no longer included, and a number of other urban places have been added.

Urban places other than incorporated cities for which vital statistics data are shown in this volume include the following:

- Each town in New England, New York, and Wisconsin and each township in Michigan, New Jersey, and Pennsylvania that had no incorporated municipality as a subdivision and had either 25,000 inhabitants or more or a population of 10,000 to 25,000 and a density of 1,000 persons or more per square mile.
- Each county in States other than those indicated above that had no incorporated municipality within its boundary and had a density of 1,000 persons or more per square mile. (Arlington County, Virginia, is the only county classified as urban under this rule.)
- Each place in Hawaii with 10,000 or more population, as there are no incorporated cities in the State.

Before 1964, places were classified as "urban" or "rural." The Technical Appendixes for earlier years discuss the previous classification system.

### State or country of birth

Mortality statistics by State or country of birth (table 1-33) became available beginning with 1979. State or country of birth of a decedent is assigned to 1 of the 50 States or the District of Columbia; or to Puerto Rico, the Virgin Islands, or Guam—if specified on the death certificate. The place of birth is also tabulated for Canada, Cuba, Mexico, and for the Remainder of the World. Deaths for which information on State or country of birth was unknown, not stated, or not classifiable accounted for a small proportion of all deaths in 1988, about 0.6 percent.

Early mortality reports published by the U.S. Bureau of the Census contained tables showing nativity of parents as well as nativity of decedent. Publication of these tables was discontinued in 1933. Mortality data showing nativity of decedent were again published in annual reports for 1939–41 and for 1950.

### Age

The age recorded on the death record is the age at last birthday. With respect to the computation of death rates, the

age classification used by the U.S. Bureau of the Census is also based on the age of the person in completed years.

For computation of age-specific and age-adjusted death rates, deaths with age not stated are excluded. For life table computation, deaths with age not stated are distributed proportionately.

## Race

For vital statistics in the United States in 1988, deaths are classified by race—white, black, American Indian, Chinese, Hawaiian, Japanese, Filipino, Other Asian or Pacific Islander, and Other. Mortality data for Filipino and Other Asian or Pacific Islander were shown for the first time in 1979.

The white category includes, in addition to persons reported as white, those reported as Mexican, Puerto Rican, Cuban, and all other Caucasians. The American Indian category includes American, Alaskan, Canadian, Eskimo, and Aleut. If the racial entry on the death certificate indicates a mixture of Hawaiian and any other race, the entry is coded to Hawaiian. If the race is given as a mixture of white and any other race, the entry is coded to the appropriate other race. If a mixture of races other than white is given (except Hawaiian), the entry is coded to the first race listed. This procedure for coding the first race listed has been in use since 1969. Before 1969, if the entry for race was a mixture of black and any other race except Hawaiian, the entry was coded to black.

Most of the tables in this volume, however, do not show data for this detailed classification by race. In about half of all the tables the divisions are white, all other (including black), and black separately. In other tables by race, where the main purpose is to isolate the major groups, the classifications are simply white and all other.

**Race not stated**—For 1988 the number of death records for which race was unknown, not stated, or not classifiable was 4,094, or 0.2 percent of the total deaths. Death records with race entry not stated are assigned to a racial designation as follows: If the preceding record is coded white, the code assignment is made to white; if the code is other than white, the assignment is made to black. Before 1964 all records with race not stated were assigned to white except records of residents of New Jersey for 1962–64.

**New Jersey, 1962–64**—New Jersey omitted the race item from its certificates of live birth, death, and fetal death in use in the beginning of 1962. The item was restored during the latter part of 1962. However, the certificate revision without the race item was used for most of 1962 as well as 1963. Therefore figures by race for 1962 and 1963 exclude New Jersey. For 1964, 6.8 percent of the death records in use for residents of New Jersey did not contain the race item.

Adjustments made in vital statistics to take into account the omission of the race item in New Jersey for part of the certificates filed during 1962 through 1964 are described in the Technical Appendix of *Vital Statistics of the United States* for each of those data years.

## Hispanic origin

Mortality statistics for the Hispanic-origin population are based on information for those States and the District of Columbia that included items on the death certificate to identify Hispanic or ethnic origin of decedents. Data for 1988 were obtained from the District of Columbia and the following 29 States: Alabama, Arizona, Arkansas, California, Colorado, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Mississippi, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York (including New York City), North Carolina, North Dakota, Ohio, Oregon, Rhode Island, Tennessee, Texas, Utah, Washington, and Wyoming.

Hispanic mortality data were published for the first time in 1984. Generally, the reporting States used items similar to one of two basic formats recommended by NCHS. The first format is open-ended to obtain the specific origin or descent of the decedent (for example, Italian, Mexican, Puerto Rican, English, and Cuban). The second format is directed specifically toward the Hispanic population and asks whether the decedent is of Spanish origin. If so, the specific origin—for example, Mexican, Puerto Rican, or Cuban—is to be indicated.

For 1988, mortality data in tables 1-34 and 2-18 are based on deaths to residents of all 29 reporting States and the District of Columbia. In tables 1-35, 1-40, and 1-41, general mortality data for the Hispanic-origin population are based on deaths to residents of 26 reporting States and the District of Columbia whose data were at least 90 percent complete on a place-of-occurrence basis and considered to be sufficiently comparable to be used for analysis. The 26 States are as follows: Alabama, Arizona, Arkansas, California, Colorado, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Mississippi, Montana, Nebraska, New Jersey, New York (including New York City), North Carolina, North Dakota, Ohio, Oregon, Rhode Island, Texas, Utah, Washington, and Wyoming. Excluded from these tables are data for New Mexico, because the format for the Hispanic item on the New Mexico death certificate departs sufficiently from that of other areas to result in noncomparable data. In addition, in tables 1-34 and 2-18 for New Mexico, no deaths are shown for the category "not stated" origin. Because of the way in which the item on the death certificate for New Mexico is worded, it was not possible to determine whether a blank entry represented a response of "non-Hispanic origin" or of "unknown origin." Accordingly, blank entries were coded to "non-Hispanic." Data for two other States—Nevada and Tennessee—are excluded from tables 1-35, 1-40, and 1-41 because of the large proportion of deaths (in excess of 10 percent) occurring in these States for which Hispanic origin was not stated or was unknown.

In tables 2-19, 2-20, 2-21, and 2-22, the reporting area is based on deaths to residents of 23 reporting States and the District of Columbia whose mortality data for all ages and whose live birth data were at least 90 percent complete on a place-of-occurrence basis and considered to be sufficiently comparable to be used for analysis. The 23 States are as follows: Alabama, Arizona, Arkansas, California, Colorado, Georgia,

Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Mississippi, Montana, Nebraska, New Jersey, New York (including New York City), North Carolina, North Dakota, Ohio, Texas, Utah, and Washington. Data for New Mexico, Nevada, and Tennessee were excluded for the reasons stated above. Oregon and Rhode Island were excluded because their live birth certificates did not include an item to identify Hispanic or ethnic origin. Wyoming was excluded because of the large proportion of live births (in excess of 10 percent) for which Hispanic origin was not stated or was unknown.

The 26 reporting States and the District of Columbia for which general mortality data are shown in this report accounted for about 82 percent of the Hispanic population in the United States in 1980. This included about 91 percent of the Mexican population, 79 percent of the Puerto Rican population, 35 percent of the Cuban population, and 72 percent of the "Other Hispanic" population (9). The 23 reporting States and the District of Columbia for which Hispanic infant mortality data are shown in this report accounted for about 81 percent of the Hispanic population, including about 90 percent of the Mexican population, 79 percent of the Puerto Rican population, 35 percent of the Cuban population, and 71 percent of the "Other Hispanic" population. Accordingly, caution should be exercised in generalizing mortality patterns from the reporting area to the Hispanic-origin population (especially Cubans) of the entire United States. For qualifications regarding infant mortality of the Hispanic-origin population, see "Infant deaths."

#### Marital status

Mortality statistics by marital status (table 1-32) were published in 1979 for the first time since 1961. (Previously they had been published in the annual volumes for the years 1949-51 and 1959-61.) Several reports analyzing mortality by marital status have been published, including the special study based on 1959-61 data (10). Reference to earlier reports is given in the appendix of part B of the 1959-61 special study.

Mortality statistics by marital status are tabulated separately for never married, married, widowed, and divorced. Certificates in which the marriage is specified as being annulled are classified as never married. Where marital status is specified as separated or common-law marriage, it is classified as married. Of the 2,112,148 resident death certificates for residents 15 years of age and over in 1988, 12,603 certificates (0.6 percent) had marital status not stated.

#### Place of death and status of decedent

Mortality statistics by place of death were published in 1979 for the first time since 1958 (tables 1-29 and 1-30). In addition, mortality data were also available for the first time in 1979 for the status of decedent when death occurred in a hospital or medical center (table 1-29). These data were obtained from the following two items that appear on the U.S. Standard Certificate of Death:

- Item 7c. Hospital or Other Institution—Name (If not in either, give street and number)

- Item 7d. If Hosp. or Inst. Indicate DOA, OP/Emer. Rm. Inpatient (Specify)

All of the States and the District of Columbia have item 7c (or its equivalent) on the death certificate. For all States and the District of Columbia in the Vital Statistics Cooperative Program, NCHS accepts the State definition, classification, or code for hospitals, medical centers, or other institutions.

Table 1-29 shows mortality data for the total of the following 44 States (including New York City) that have item 7d or its equivalent on their death certificates:

Alabama	Nebraska
Alaska	Nevada
Arizona	New Hampshire
Arkansas	New Jersey
Colorado	New Mexico
Connecticut	New York
Florida	North Carolina
Georgia	North Dakota
Hawaii	Ohio
Idaho	Oregon
Illinois	Pennsylvania
Indiana	Rhode Island
Iowa	South Carolina
Kansas	South Dakota
Kentucky	Tennessee
Louisiana	Utah
Maine	Vermont
Michigan	Virginia
Minnesota	Washington
Mississippi	West Virginia
Missouri	Wisconsin
Montana	Wyoming

Effective with data for 1980, the coding of place of death and status of decedent was changed. A new coding category was added: "Death on arrival—hospital, clinic, medical center name not given." Deaths coded to this category are tabulated in table 1-29 as "Dead on arrival" and in table 1-30 as "Not in hospital or medical center." Had the 1979 coding categories been used, these deaths would have been tabulated as "Place unknown."

#### Mortality by month and date of death

Deaths by month have been regularly tabulated and published in the annual volume for each year beginning with data year 1900. For 1988, deaths by month are shown in tables 1-20, 1-21, 1-24, 1-31, 2-12, 2-13, 2-14, and 3-9.

Date of death was first published for data year 1972. In addition, unpublished data for selected causes by date of death for 1962 are available from NCHS.

Numbers of deaths by date of death in this volume are shown in table 1-31 for the total number of deaths and for the number of deaths for the following three causes, for which the greatest interest in date of occurrence of death has been expressed: Motor vehicle accidents, Suicide, and Homicide and legal intervention.

These data show the frequency distribution of deaths for the selected causes by day of week. They also make it possible to identify holidays with peak numbers of deaths from specified causes.

### Report of autopsy

Before 1972, the last year for which autopsy data were tabulated was 1958. Beginning in 1972, all registration areas requested information on the death certificate as to whether an autopsy was performed. For 1988, autopsies were reported on 251,095 death certificates, 11.6 percent of the total (table 1-28).

Information as to whether the autopsy findings were used in determining the cause of death was tabulated for 1972-73 for all but nine registration areas and from 1974-77 for all but eight registration areas. The item "autopsy findings used" was deleted from the 1978 U.S. Standard Certificate of Death.

For 10 of the cause-of-death categories shown in table 1-28, autopsies were reported as performed for 50 percent or more of all deaths (Shigellosis and amebiasis; Whooping cough; Meningococcal infection; Acute poliomyelitis; Pregnancy with abortive outcome; Other complications of pregnancy, childbirth, and the puerperium; Motor vehicle accidents; Suicide; Homicide and legal intervention; and All other external causes). There were two other categories for which 40 percent or more of the death certificates reported autopsies. Autopsies were reported for only 7.3 percent of the Major cardiovascular diseases.

### Cause of death

**Cause-of-death classification**—Since 1949, cause-of-death statistics have been based on the underlying cause of death, which is defined as "(a) the disease or injury which initiated the train of events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury" (11).

For each death the underlying cause is selected from an array of conditions reported in the medical certification section on the death certificate. This section provides a format for entering the causes of death in a sequential order. These conditions are translated into medical codes through use of the classification structure and the selection and modification rules contained in the applicable revision of the *International Classification of Diseases* (ICD) published by the World Health Organization (WHO). Selection rules provide guidance for systematically identifying the underlying cause of death. Modification rules are intended to improve the usefulness of mortality statistics by giving preference to certain classification categories over others and/or to consolidate two or more conditions on the certificate into a single classification category.

As a statistical datum, underlying cause of death is a simple, one-dimensional statistic; it is conceptually easy to understand and a well-accepted measure of mortality. It identifies the initiating cause of death and is therefore most useful to public health officials in developing measures to prevent the start of the chain of events leading to death. The rules for selecting the underlying cause of death are included in ICD as a means of standardizing classification, which

contributes toward comparability and uniformity in mortality medical statistics among countries.

**Tabulation lists**—Beginning with data year 1979, the cause-of-death statistics published by NCHS have been classified according to the Ninth Revision of the *International Classification of Diseases* (ICD-9) (11). In addition to specifying that ICD-9 be used, WHO also recommends how the data should be tabulated in order to promote international comparability. The recommended system for tabulating data in the Ninth Revision allows countries to construct their own mortality and morbidity tabulation lists from the rubrics of the WHO Basic Tabulation List as long as rubrics from the WHO mortality and morbidity lists, respectively, are included. This tabulation system for the Ninth Revision is more flexible than that of the Eighth Revision, in which specific lists were recommended for tabulating mortality and morbidity data.

The Basic Tabulation List (BTL) recommended under the Ninth Revision consists of 57 two-digit rubrics that add to the "all causes" total. Within each two-digit rubric, up to 9 three-digit rubrics numbered from 0 to 8 are identified, but these do not add to the total of the two-digit rubric. The two-digit BTL rubrics 01 through 46 provide for the tabulation of nonviolent deaths according to ICD categories 001-799. Rubrics relating to chapter 17 (nature-of-injury causes 47 through 56) are not used by NCHS for selecting underlying cause of death; rather, preference is given to rubrics E47 through E56. The 57th two-digit rubric VO is the Supplementary Classification of Factors Influencing Health Status and Contact with Health Services and is not appropriate for the tabulation of mortality data. The WHO Mortality List, a subset of the titles contained in the BTL, consists of 50 rubrics that are the minimum necessary for the national display of mortality data.

Five lists of causes have been developed for tabulation and publication of mortality data in this volume: The Each-Cause List, List of 282 Selected Causes of Death, List of 72 Selected Causes of Death, List of 61 Selected Causes of Infant Death, and List of 34 Selected Causes of Death. These lists were designed to be as comparable as possible with the NCHS lists more recently in use under the Eighth Revision. However, complete comparability could not always be achieved.

The Each-Cause List is made up of each three-digit category of the WHO Detailed List to which deaths may be validly assigned and most four-digit subcategories. The list is used for tabulation for the entire United States. The published Each-Cause table does not show the four-digit subcategories provided for Motor vehicle accidents (E810-E825); however, these subcategories, which identify persons injured, are shown in the accident tables of this report (section 5). Special fifth-digit subcategories are also used in the accident tables to identify place of accident when deaths from nontransport accidents are shown. These are not shown in the Each-Cause table.

The List of 282 Selected Causes of Death is constructed from BTL rubrics 01-46 and E47-E56. Each of the 56 BTL two-digit titles can be obtained either directly or by combining titles in the List. The three-digit level of the BTL is modified more extensively. Where more detail was desired, categories not shown in the three-digit rubrics were added to the List of

282 Selected Causes of Death. Where less detail was needed, the three-digit rubrics were combined. Moreover, each of the 50 rubrics of the WHO Mortality List can be obtained from the List of 282 Selected Causes of Death.

The List of 72 Selected Causes of Death was constructed by combining titles in the List of 282 Selected Causes of Death. It is used in tables published for the United States and each State, and for standard metropolitan statistical areas.

The List of 61 Selected Causes of Infant Death shows more detailed titles for Congenital anomalies and Certain conditions originating in the perinatal period than any other list except the Each-Cause List.

The List of 34 Selected Causes of Death was created by combining titles in the List of 72 Selected Causes. A table using this list is published for detailed geographic areas.

Beginning with data for 1987, changes were made in these lists to accommodate the introduction in the United States of new category numbers \*042–\*044 for Human immunodeficiency virus infection. The changes are described in the Technical Appendix From *Vital Statistics of the United States, 1987*.

**Effect of list revisions**—The International Lists, or adaptations of them, in use in this country since 1900, have been revised approximately every 10 years so that the disease classifications may be consistent with advances in medical science and with changes in diagnostic practice. Each revision of the International Lists have produced some break in comparability of cause-of-death statistics. Cause-of-death statistics beginning with 1979 are classified by NCHS according to the ICD-9 (11). For a discussion of each of the classifications used with death statistics since 1900, see the Technical Appendix From *Vital Statistics of the United States, 1979*, Volume II, Mortality, Part A, Section 7, pages 9–14.

A dual coding study was undertaken comparing the Ninth and the Eighth Revisions to measure the extent of discontinuity in cause-of-death statistics resulting from introducing the new Revision. A study for the List of 72 Selected Causes of Death and the List of 10 Selected Causes of Infant Death has been published (12). The List of 10 Selected Causes of Infant Death is a basic NCHS tabulation list not used in this volume but used for provisional data in the *Monthly Vital Statistics Report*, another NCHS publication. Comparability studies were also undertaken between the Eighth and Seventh, Seventh and Sixth, and Sixth and Fifth Revisions. For additional information about these studies, see the 1979 Technical Appendix.

**Significant coding changes under the Ninth Revision**—Since the implementation of ICD-9 in the United States, effective with mortality data for 1979, several coding changes have been introduced. The more important changes are discussed below. In early 1983, a change was made in the coding of acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) infection, which affected data from 1981 to 1986. Also effective with data year 1981 was a coding change for poliomyelitis. For data year 1982, a change was made in the definition of child (which affects the classification of deaths to a number of categories, including Child battering and other maltreatment), and in guidelines for coding deaths to the category Child battering and other maltreatment (ICD No. E967). During the calendar year 1985, detailed instructions

for coding motor vehicle accidents involving all-terrain vehicles (ATV's) were implemented to ensure consistency in coding these accidents. Effective with data year 1986, "primary" and "invasive" tumors, unspecified, were classified as "malignant"; these neoplasms had previously been classified to Neoplasms of unspecified nature (ICD-9 No. 239).

Beginning with data for 1987, NCHS introduced new category numbers \*042–\*044 for classifying and coding Human immunodeficiency virus (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. Also changed effective with data year 1987 were coding rules for the conditions "dehydration" and "disseminated intravascular coagulopathy." Detailed discussion of these changes may be found in the Technical Appendix for previous volumes.

**Coding in 1988**—The rules and instructions used in coding the 1988 mortality medical data remained essentially the same as those used for the 1987 data except for minor content changes to the classification for Human immunodeficiency virus (HIV) infection that had initially been implemented for United States mortality data beginning in data year 1987. The basic structure of the HIV classification, the codes and category titles within the classification, and the manner in which the codes may be used remained unchanged for data year 1988.

The 1988 modifications to the HIV classification included the addition of the following four clinical conditions to the "Includes only" notes under several categories: isosporosis (007.2) under \*042.0; diarrhea—noninfectious (558) and infectious (009)—under \*043.3; and lymphoid interstitial pneumonitis (516.8) under \*043.3. In addition, several other terms were considered synonymous with HIV infection, and the following was added under the category \*043.0:

enlarged lymph nodes (785.6)  
swollen glands (785.6) } Due to HIV infection

Deaths classified to categories \*042–\*044 for 1988 are shown in Tables 1-36, 1-37, 1-38, 1-39, 1-40, 1-41, 2-22, and 2-23, and are also shown in the Each-Cause List in Table 1-23. Deaths classified to these categories are not shown separately in other tables showing cause-of-death data.

**Medical certification**—The use of a standard classification list, although essential for State, regional, and international comparison, does not assure strict comparability of the tabulated figures. A high degree of comparability between areas could be attained only if all records of cause of death were reported with equal accuracy and completeness. The medical certification of cause of death can be made only by a qualified person, usually a physician, a medical examiner, or a coroner. Therefore, the reliability and accuracy of cause-of-death statistics are, to a large extent, governed by the ability of the certifier to make the proper diagnosis and by the care with which he or she records this information on the death certificate.

A number of studies have been undertaken on the quality of medical certification on the death certificate. In general, these have been for relatively small samples and for limited geographic areas. A bibliography prepared by NCHS (13),

covering 128 references over a period of 23 years, indicates that no definitive conclusions have been reached about the quality of medical certification on the death certificate. No country has a well-defined program for systematically assessing the quality of medical certifications reported on death certificates or for measuring the error effects on the levels and trends of cause-of-death statistics.

One index of the quality of reporting causes of death is the proportion of death certificates coded to the Ninth Revision Chapter XVI Symptoms, signs, and ill-defined conditions (ICD-9 Nos. 780-799). Although there are deaths for which it is not possible to determine the cause, this proportion indicates the care and consideration given to the certification by the medical certifier. It may also be used as a rough measure of the specificity of the medical diagnoses made by the certifier in various areas. In 1988, 1.4 percent of all reported deaths in the United States were assigned to ill-defined or unknown causes, a slight decrease from 1.5 in 1987. However, in 1988 this percentage varied among the States from 0.4 percent to 4.1 percent. Although the percent for the United States for all ages combined has generally remained stable since 1979, declines have occurred for persons in age groups 55-64 years and 65-74 years, whereas increases have occurred for persons in age groups under 45 years. However, between 1987 and 1988, the percent decreased for almost all age groups.

*Automated selection of underlying cause of death*—Beginning with data year 1968, NCHS began using a computer system for assigning the underlying cause of death. It has been used every year since. The system is called "Automated Classification of Medical Entities" (ACME).

The ACME system applies the same rules for selecting the underlying cause as would be applied manually by a nosologist; however, under this system, the computer consistently applies the same criteria, thus eliminating intercoder variation in this step of the process.

The ACME computer program requires the coding of all conditions shown on the medical certification. These codes are matched automatically against decision tables that consistently select the underlying cause of death for each record according to the international rules. The decision tables provide the comprehensive relationships between the conditions classified by ICD when applying the rules of selection and modification.

The decision tables were developed by NCHS staff on the basis of their experience in coding underlying causes of death under the earlier manual coding system and as a result of periodic independent validations. These tables are periodically updated to reflect additional new information on the relationship among medical conditions. For data year 1988 these tables were amended to incorporate minor changes to the previously mentioned classification for Human immunodeficiency virus infection (\*042-\*044) that had originally been implemented with data year 1987. Coding procedures for selecting the underlying cause of death by using the ACME computer program, as well as by using the ACME decision tables, are documented in NCHS instruction manuals (14-16).

*Cause-of-death ranking*—Cause-of-death ranking (except for infants) is based on the List of 72 Selected Causes of Death and the category Human immunodeficiency virus infection (HIV

infection) (\*042-\*044); cause-of-death ranking for infants is based on the List of 61 Selected Causes of Infant Death and HIV infection. HIV infection was added to the list of rankable causes effective with data year 1987.

The group titles Major cardiovascular diseases and Symptoms, signs, and ill-defined conditions from the List of 72 Selected Causes of Death are not ranked, and Certain conditions originating in the perinatal period and Symptoms, signs, and ill-defined conditions from the List of 61 Selected Causes of Infant Death are not ranked. In addition, category titles that begin with the words "Other" or "All other" are not ranked to determine the leading causes of death. When one of the titles that represents a subtotal is ranked (such as Tuberculosis), its component parts (in this case, Tuberculosis of respiratory system and Other tuberculosis) are not ranked.

### Maternal deaths

Maternal deaths are those for which the certifying physician has designated a maternal condition as the underlying cause of death. Maternal conditions are those assigned to Complications of pregnancy, childbirth, and the puerperium (ICD-9 Nos. 630-676). In the Ninth Revision, WHO for the first time defined a maternal death as follows:

A maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Under the Eighth Revision, maternal deaths were assigned to the category "Complications of pregnancy, childbirth, and the puerperium" (ICDA-8 Nos. 630-678). Although WHO did not define maternal mortality, there was an NCHS classification rule that limited a maternal death to a death within a year after termination of pregnancy from any "maternal cause," that is, any cause within the range of ICDA-8 Nos. 630-678. This rule applied only if a duration of time for the condition was given. If no duration was specified and the underlying cause of death was a maternal condition, then the duration was assumed to be within a year and the death was coded by NCHS as a maternal death. The change from an under-1-year limitation on duration used in the Eighth Revision to an under-42-days limitation used in the Ninth Revision did not have much effect on the comparability of maternal mortality statistics. However, comparability was affected by the following classification change. Under the Ninth Revision, maternal causes have been expanded to include Indirect obstetric causes (ICD-9 Nos. 647-648). These causes include Infective and parasitic conditions as well as other current conditions in the mother that are classifiable elsewhere but that complicate pregnancy, childbirth, and the puerperium, such as Syphilis, Tuberculosis, Diabetes mellitus, Drug dependence, and Congenital cardiovascular disorders.

Maternal mortality rates are computed on the basis of the number of live births. The maternal mortality rate indicates the likelihood that a pregnant woman will die of maternal causes

The number of live births used in the denominator is an approximation of the population of pregnant women who are at risk of a maternal death.

### Infant deaths

**Age**—Infant death is defined as a death under 1 year of age. The term excludes fetal deaths. Infant deaths are usually divided into two categories according to age, neonatal and postneonatal. Neonatal deaths are those that occur during the first 27 days of life; postneonatal deaths are those that occur between 28 days and 1 year of age. It has generally been believed that different factors influencing the child's survival predominate in these two periods: Factors associated with prenatal development, heredity, and the birth process were considered dominant in the neonatal period; environmental factors, such as nutrition, hygiene, and accidents, were considered more important in the postneonatal period. Recently, however, the distinction between these two periods has blurred due in part to advances in neonatology, which have enabled more very small premature infants to survive the neonatal period.

**Rates**—Infant mortality rates shown in section 2 and section 8 are the most commonly used index for measuring the risk of dying during the first year of life; they are calculated by dividing the number of infant deaths in a calendar year by the number of live births registered for the same period and are presented as rates per 1,000 or per 100,000 live births. Infant mortality rates use the number of live births in the denominator to approximate the population at risk of dying before the first birthday. This measure is an approximation because some live births will not have been exposed to full year's risk of dying and some of the infants who die during a year will have been born in the previous year. The error introduced in the infant mortality rate by this inexactness is usually small, especially when the birth rate is relatively constant from year to year (17,18). Other sources of error in the infant mortality rate have been attributed to differences in applying the definitions for infant death and fetal death when registering the event (19,20).

In contrast to infant mortality rates based on live births, infant death rates shown in Section 1 are based on the estimated population under 1 year of age. Infant death rates, which appear in tabulations of age-specific death rates, are calculated by dividing the number of infant deaths in a calendar year by the estimated midyear population of persons under 1 year of age and are presented as rates per 100,000 population in this age group. Patterns and trends in the infant death rate may differ somewhat from those of the more commonly used "infant mortality rate," mainly because of differences in the nature of the denominator and in the time reference period. Whereas the population denominator for the infant death rate is estimated using data on births, infant deaths, and migration for the 12-month period of July through June, the denominator for the infant mortality rate is a count of births occurring during the 12 months of January through December. The difference in the time reference period can result in different trends between the two indices during periods when birth rates are moving up or down markedly.

The infant death rate is also subject to greater imprecision than is the infant mortality rate because of problems of enumerating and estimating the population under 1 year of age (20).

**Race**—Infant mortality rates for specified races other than white or black may be understated, based on results of studies in which race on the birth and death certificates for the same infant were compared (21). In the computation of regular race-specific infant mortality rates, the race item for the numerator comes from the death certificate, and for the denominator, from the birth certificate. Understatement may arise because of possible inconsistencies in reporting race between the death and birth certificates. Differences exist in the nature of reporting and processing race on these two vital records. With respect to reporting, race of parents is reported on the birth certificate by the mother at the time of delivery; whereas on the death certificate, race of the deceased infant is reported by the funeral director based on observation or on information supplied by an informant, such as a parent. With respect to processing, race of infant at birth is coded using coding rules that take account of the race of each parent (see the Technical Appendix From *Vital Statistics of the United States, 1988*, Volume 1, Natality, section titled "Race or national origin"); whereas race of infant decedent is coded directly from the race item as reported on the death certificate. There is a tendency for race of infant that was reported, for example, as American Indian or other specific race other than white at the time of birth to be reported as white at the time of death, resulting in understatement of infant mortality rates for smaller race groups.

Estimates are made below of the degree of reporting bias in race-specific infant mortality rates by comparing two rates that differ in terms of the source of information about race of the decedent (22,23). The two rates are as follows: the birth cohort rate, based on data from the national linked birth and infant death data set, and the period rate, based on mortality and natality data for the same year(s). For the birth cohort, the race is that which is reported at the time of birth for the deceased infant and is the standard against which the race that is reported at the time of death is compared.

The comparison of cohort and period rates is affected slightly by small differences in the events included in the numerators of the two rates. Thus, the numerator of the cohort rate is comprised of infant deaths to the cohort of infants born in a calendar year, whereas the numerator of the period rate is comprised of infant deaths that occur in the calendar year.

Based on a comparison of infant mortality rates from the linked data set for the birth cohorts of 1983–85 with rates from the annual files for the 1983–85 period, bias in the rates for the two major race groups—the white and the black populations—is small. In contrast, period rates for the smaller race groups are estimated to be understated by between 21 and 44 percent, shown in table A.

Because of these differences in race-specific infant mortality rates, one should use, if possible, data from the national linked birth and infant death data set to measure infant mortality for the smaller race groups.

**Hispanic origin**—Infant mortality rates for the Hispanic-origin population are based on numbers of resident infant deaths reported to be of Hispanic origin (see section "Hispanic



**Table A. Infant mortality rates by race for period 1983-85 and for birth cohorts, 1983-85; and percent difference between period and birth cohort rates, by race: United States**  
(Rates per 1,000 live births in specified group)

Race	Period 1983-85	Birth cohorts 1983-85	Percent difference <sup>1</sup>
			Rate
All races	10.9	10.6	-2.67
White	9.5	9.0	-5.01
Black	18.6	18.4	-1.01
Indian	9.7	13.1	25.70
Chinese	5.7	7.2	21.01
Japanese	4.3	6.6	34.45
Filipino	4.7	8.3	43.15
Other Asian	6.9	8.9	23.15
Other nonwhite	6.7	11.8	43.59

<sup>1</sup>Percent difference =  $(1 - \text{period rate/cohort rate}) \times 100$

origin") and numbers of resident live births by Hispanic origin of mother for the 23 reporting States and the District of Columbia. In computing infant mortality rates, deaths and live births of unknown origin are not distributed among the specified Hispanic and non-Hispanic groups. Because the percent of infant deaths of unknown origin for 1988 was 6.7 percent and the percent of live births of unknown origin was 2.8 percent, infant mortality rates by specified Hispanic origin and race for non-Hispanic origin are underestimated. In addition, infant mortality rates for specific Hispanic-origin groups are believed to include biases similar to those described above for specified races; however, precise estimates are not yet available.

Small numbers of infant deaths for specific Hispanic-origin groups can result in infant mortality rates subject to relatively large random variation (see section "Random variation in numbers of deaths, death rates, and mortality rates and ratios").

**Tabulation list**—Causes of death for infants are tabulated according to a list of causes that is different from the list of causes for the population of all ages, except for the Each-Cause List. (See section "Cause-of-death classification.")

**California**—Data on age at death for California, as shown in table 2-11, are biased in the categories 1-23 hours and 1 day because of processing errors that affected selected infants who died within 24 hours after birth, for each of the years 1985 through 1988. The degree of bias can be estimated by comparing the percents of infant deaths in these two age groups in the period before the error occurred, 1983-84, with the subsequent period, 1985-88, as follows:

Age of infant	1983-84	1985-88
	Percent distribution	
All infants	100.00	100.00
1-23 hours	27.72	19.58
1 day	5.49	10.51
All other ages	66.80	69.91

Beginning with 1985 data, California provided NCHS with computer tapes of precoded mortality data through the Vital

Statistics Cooperative Program (VSCP); whereas prior to 1985, data from the State of California were based on information coded by NCHS from copies of original death certificates. The effect of these errors on national data for the years 1985-88, shown in tables 2-2, 2-3, 2-12, and 2-16, is negligible. The problem has been identified and corrected for subsequent years.

## Fetal deaths

In May 1950, the World Health Organization (WHO) recommended that the following definition of fetal death be adopted for international use:

Death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles (24).

The term "fetal death" was defined on an all-inclusive basis to end confusion arising from use of such terms as stillbirth, abortion, and miscarriage.

Shortly thereafter, this definition of fetal death was adopted by the National Center for Health Statistics (NCHS) as the nationally recommended standard. Currently all registration areas except Puerto Rico have definitions similar to the standard definition (25). Puerto Rico has no formal definition.

As another step toward increasing the comparability of data on fetal deaths for different countries, WHO recommended that for statistical purposes fetal deaths be classified as early, intermediate, and late. These groups are defined as follows:

Less than 20 completed weeks of gestation (early fetal deaths)	Group I
20 completed weeks of gestation but less than 28 (intermediate fetal deaths)	Group II
28 completed weeks of gestation and over (late fetal deaths)	Group III
Gestation period not classifiable in groups I, II, and III	Group IV

Note that in table 3-13, group IV consists of fetal deaths with gestation not stated but presumed to be 20 weeks or more.

Until 1939 the nationally recommended procedure for registration of a fetal death required the filing of both a live-birth and a death certificate. In 1939 a separate Standard Certificate of Stillbirth (fetal death) was created to replace the former procedure. This was revised in 1949, 1955, 1956, and 1968. In 1978 the Standard Certificate of Fetal Death was replaced by the Standard Report of Fetal Death (figure 7-8).

The 1977 revision of the *Model State Vital Statistics Act and Model State Vital Statistics Regulations* (26) recommended that spontaneous fetal deaths at a gestation of 20 weeks or more or

a weight of 350 grams or more and all induced terminations of pregnancy regardless of gestational age be reported and further that they be reported on separate forms. These forms are to be considered legally required statistical reports rather than legal documents.

Beginning with 1970 fetal deaths, procedures were implemented to separate reports of spontaneous fetal deaths from those of induced terminations of pregnancy. These procedures were implemented because the health implications are different for spontaneous fetal deaths than for induced terminations of pregnancy. These procedures are still in use.

*Comparability and completeness of data*—Registration area requirements for reporting fetal deaths vary. Most of these areas require reporting of fetal death at gestations of 20 weeks or more. Table 5 shows the minimum period of gestation required by each State for fetal-death reporting. There is substantial evidence that not all fetal deaths for which reporting is required are reported (27).

Underreporting of fetal deaths is most likely to occur in the earlier part of the required reporting period for each State. Thus, for States requiring reporting of all periods of gestation, fetal deaths occurring at younger gestational ages are less completely reported. The reporting of fetal deaths at 20–23 weeks of gestation may be more complete for those States that report fetal deaths at all periods of gestation than for others.

To maximize the comparability of data by year and by State, most of the tables in section 3 are based on fetal deaths occurring at gestations of 20 weeks or more. These tables also include fetal deaths for which gestation is not stated for those States requiring reporting at 20 weeks or more only. Beginning with 1969, fetal deaths of not-stated gestation were excluded for States requiring reporting of all products of conception except those with a stated birth weight of 500 grams or more. In 1988 this rule was applied to the following States: Colorado, Georgia, Hawaii, New York (including New York City), Rhode Island, and Virginia. Each year there are some exceptions to this procedure.

The data in table 3-3 include only fetal deaths to residents of selected areas in the United States that reported all periods of gestation. The areas are Colorado, Georgia, Hawaii, New York (including New York City), Rhode Island, and Virginia; excluded are fetal deaths to residents of Maine.

*Arkansas*—Since 1971, Arkansas has been using two reporting forms for fetal deaths: A confidential Spontaneous Abortion form that is not sent to the National Center for Health Statistics (NCHS) and a Fetal Death Certificate that is. During the period 1971 through 1980, it is believed that most spontaneous fetal deaths of less than 20 weeks' gestation were reported on the confidential form and, therefore, were not reported to NCHS. During the period 1981 through 1983, Arkansas specified that fetal deaths of less than 28 weeks' gestation or weighing less than 1,000 grams could be reported on the confidential form; beginning with 1984 data, the State specified that fetal deaths of 20 weeks' gestation or weighing 500 grams be reported on the Fetal Death Certificate. Because of these changes, the comparability of counts of early fetal deaths may be affected. In particular, counts of fetal deaths at 20 to 27 weeks for 1981–83 were not comparable between

Arkansas and other reporting areas or with Arkansas data for 1984–88. It is believed that reporting has improved but is still not comparable with data for 1980 and earlier years.

*Maine*—Maine uses two reporting forms for fetal deaths: A Report of Abortion (Spontaneous and Induced) and a Report of Fetal Death. Most spontaneous fetal deaths at less than 20 weeks' gestation are reported on the Report of Abortion, and, therefore, are excluded from fetal death counts in this volume.

*Missouri*—Beginning in 1984, Missouri changed its reporting requirements for spontaneous fetal deaths from "after 20 weeks" to "after 20 weeks or a weight of 350 grams or more."

*Wisconsin*—Beginning in 1986, Wisconsin changed its reporting requirements for spontaneous fetal deaths from "20 weeks" to "20 weeks or 350 grams."

*Period of gestation*—The period of gestation is the number of completed weeks elapsed between the first day of the last normal menstrual period (LMP) and the date of delivery. The first day of the LMP is used as the initial date because it can be more accurately determined than the date of conception, which usually occurs 2 weeks after the LMP. Data on period of gestation are computed from information on "date of delivery" and "date last normal menses began." If "date last normal menses began" is not on the record or the calculated gestation falls beyond a duration considered biologically plausible, "gestation in weeks" or "Physician's estimate of gestation" is used. When the period of gestation is reported in months on the report, it is allocated to gestational intervals in weeks, as follows:

- 1–3 months to under 16 weeks
- 4 months to 16–19 weeks
- 5 months to 20–23 weeks
- 6 months to 24–27 weeks
- 7 months to 28–31 weeks
- 8 months to 32–35 weeks
- 9 months to 40 weeks
- 10 months and over to 43 weeks and over

All areas reported LMP in 1988 except Delaware, New Mexico, Puerto Rico, and South Dakota.

*Birth weight*—Most of the 55 registration areas do not specify how weight should be given, that is, in pounds and ounces or in grams. In the tabulation and presentation of birth weight data, the metric system (grams) has been used to facilitate comparison with other data published in the United States and internationally. Birth weight specified in pounds and ounces is assigned the equivalent of the gram intervals, as follows:

- Less than 350 grams = 0 lb 12 oz or less
- 350–499 grams = 0 lb 13 oz – 1 lb 1 oz
- 500–999 grams = 1 lb 2 oz – 2 lb 3 oz
- 1,000–1,499 grams = 2 lb 4 oz – 3 lb 4 oz
- 1,500–1,999 grams = 3 lb 5 oz – 4 lb 6 oz
- 2,000–2,499 grams = 4 lb 7 oz – 5 lb 8 oz
- 2,500–2,999 grams = 5 lb 9 oz – 6 lb 9 oz
- 3,000–3,499 grams = 6 lb 10 oz – 7 lb 11 oz
- 3,500–3,999 grams = 7 lb 12 oz – 8 lb 13 oz

Table B. Period of gestation at which fetal-death reporting is required: Each reporting area, 1966

Area	All periods of gestation	16 weeks	20 weeks	20 weeks or 350 grams	20 weeks or 400 grams	20 weeks or 500 grams	8 months	350 grams	500 grams
Alabama			X						
Alaska			X						
Arizona			<sup>1</sup> X						
Arkansas	X								
California			X						
Colorado	X								
Connecticut			X						
Delaware			X						
District of Columbia						X			
Florida			X						
Georgia	X								
Hawaii	X								
Idaho				X					
Illinois			X						
Indiana			X						
Iowa			X						
Kansas								X	
Kentucky				X					
Louisiana				X					
Maine	X								
Maryland			<sup>2</sup> X						
Massachusetts				X					
Michigan					X				
Minnesota			X						
Mississippi				X					
Missouri				X					
Montana			X						
Nebraska			X						
Nevada			X						
New Hampshire				X					
New Jersey			X						
New Mexico									X
New York									
New York excluding New York City	X								
New York City	X								
North Carolina			X						
North Dakota			X						
Ohio			X						
Oklahoma			X						
Oregon			<sup>3</sup> X						
Pennsylvania		X							
Rhode Island	X								
South Carolina				X					
South Dakota									X
Tennessee									<sup>4</sup> X
Texas			X						
Utah			X						
Vermont			<sup>5</sup> X						
Virginia	X								
Washington			X						
West Virginia			X						
Wisconsin				X					
Wyoming			X						

<sup>1</sup> If gestational age is unknown, weight of 350 grams or more<sup>2</sup> If gestational age is unknown, weight of 500 grams or more<sup>3</sup> If gestational age is unknown, weight of 400 grams or more, or crown-heel length of 28 centimeters or more<sup>4</sup> If weight is unknown, 22 completed weeks gestation or more<sup>5</sup> If gestational age is unknown, weight of 400 or more grams, 15 or more ounces

4,000–4,499 grams = 8 lb 14 oz – 9 lb 14 oz  
 4,500–4,999 grams = 9 lb 15 oz – 11 lb 0 oz  
 5,000 grams or more = 11 lb 1 oz or more

With the introduction of ICD-9, the birth-weight classification intervals for perinatal mortality statistics were shifted downward by 1 gram, as shown above. Previously, the intervals were, for example, 1,001–1,500; 1,501–2,000; and so forth.

**Race**—The race of the fetus is ordinarily classified based on the race of the parents. If the parents are of different races, the following rules apply: When only one parent is white, the fetus is assigned the other parent's race. When neither parent is white, the fetus is assigned the father's race, with one exception: If the mother is Hawaiian or part-Hawaiian, the fetus is classified as Hawaiian.

When the race of one parent is missing or ill defined, the race of the other determines that of the fetus. When the race of both parents is missing, the race of the fetus is allocated to the specific race of the fetus on the preceding record.

**Total-birth order**—Total-birth order refers to the sum of the live births and other terminations (including both spontaneous fetal deaths and induced terminations of pregnancy) that a woman has had, including the fetal death being recorded. For example, if a woman has previously given birth to two live babies and to one born dead, the next fetal death to occur is counted as number four in total-birth order.

In the 1978 revision of the Standard Report of Fetal Death, total-birth order is calculated from four items on pregnancy history: Number of previous live births, now living; number of previous live births, now dead; number of other terminations before 20 weeks; and number of other terminations after 20 weeks.

All registration areas use the two standard items pertaining to the number of previous live births. Most areas use the two standard items pertaining to the number of "other terminations" before and after 20 weeks' gestation, but some areas use other criteria. Total-birth order for all areas is calculated from the sum of available information. Thus, information on total-birth order may not be completely comparable among the registration areas.

**Marital status**—Table 3-4 shows fetal deaths and fetal-death ratios by mother's marital status. States excluded from this table are as follows: California, Connecticut, Maryland, Michigan, New York (including New York City), Ohio, Texas, and Vermont. Because live births comprise the denominator of the ratio, marital status must also be reported for mothers of live births. Marital status of the mother of the live birth is inferred for States that did not report it on the birth certificate.

There are no quantitative data on the characteristics of unmarried women who misreport their marital status or who fail to register fetal deaths. Underreporting may be greater for the unmarried group than for the married group.

**Age of mother**—The fetal-death report asks for the mother's "age (at time of delivery)," and the ages are edited in NCHS for upper and lower limits. When mothers are reported to be under 10 years of age or 50 years of age and over, the age of the mother is considered not stated and is assigned as follows: Age on all fetal-death records with age of mother not stated is allocated

according to the age appearing on the record previously processed for a mother of identical race and having the same total-birth order (total of live births and other terminations).

## Perinatal mortality

**Perinatal definitions**—Beginning with data year 1979, perinatal mortality data for the United States and each State have been published in section 4. The World Health Organization, in its ICD-9, recommends that "national perinatal statistics should include all fetuses and infants delivered weighing at least 500 grams (or when birth weight is unavailable, the corresponding gestational age (22 weeks) or body length (25 cm crown-heel)), whether alive or dead...." It further recommends that "countries should present, solely for international comparisons, 'standard perinatal statistics' in which both the numerator and denominator of all rates are restricted to fetuses and infants weighing 1,000 grams or more (or, where birth weight is unavailable, the corresponding gestational age (28 weeks) or body length (33 cm crown-heel))." Because birth weight and gestational age are not reported on the death certificate in the United States, NCHS was unable to recommend adopting these definitions. Three definitions of perinatal mortality are currently used by NCHS: Perinatal Definition I, generally used for international comparisons, which includes fetal deaths at 28 weeks' gestation or more and infant deaths of less than 7 days; Perinatal Definition II, which includes fetal deaths at 20 weeks' gestation or more and infant deaths of less than 28 days; and Perinatal Definition III, which includes fetal deaths at 20 weeks' gestation or more and infant deaths of less than 7 days.

Variations in fetal death reporting requirements and practices have implications for comparing perinatal rates among States. Because reporting is generally poorer near the lower limit of the reporting requirement, States that require reporting of all products of pregnancy regardless of gestation are likely to have more complete reporting of fetal deaths at 20 weeks or more than are other States. The larger number of fetal deaths reported by these "all periods" States may result in higher perinatal death rates than in States whose reporting is less complete. Accordingly, reporting completeness may account, in part, for differences among the State perinatal rates, particularly differences for Definitions II and III, which use data for fetal deaths at 20–27 weeks.

**Not stated**—Fetal deaths with gestational age not stated are presumed to be of 20 weeks' gestation or more if the State requires reporting of all fetal deaths at a gestational age of 20 weeks or more or the fetus weighed 500 grams or more in those States requiring reporting of all fetal deaths regardless of gestational age. For Definition I, fetal deaths at a gestation not stated but presumed to have been of 20 weeks or more are allocated to the category 28 weeks or more, according to the proportion of fetal deaths with stated gestational age that falls into that category. For Definitions II and III, fetal deaths at a presumed gestation of 20 weeks or more are included with those at a stated gestation of 20 weeks or more.

For all three definitions, following the distribution of gestation not stated described above, fetal deaths with not-stated sex are allocated within gestational age groups on the basis of the distribution of stated cases. The allocation of not-stated gestational age and sex for fetal deaths is made individually for each State, for metropolitan and nonmetropolitan areas, and separately for the United States as a whole. Accordingly, the sum of perinatal deaths for the areas according to Definition I may not equal the total number of perinatal deaths for the United States.

## QUALITY OF DATA

### Completeness of registration

All States have adopted laws that require the registration of births and deaths and the reporting of fetal deaths. It is believed that more than 99 percent of the births and deaths occurring in this country are registered.

Reporting requirements for fetal deaths vary somewhat from State to State (see "Comparability and completeness of data"). Overall reporting is not as complete for fetal deaths as for births and deaths, but it is believed to be relatively complete for fetal deaths at a gestation of 28 weeks or more. National statistical data on fetal deaths include only fetal deaths occurring at a stated or presumed gestation of 20 weeks or more.

### Massachusetts data

The 1964 statistics for deaths exclude approximately 6,000 events registered in Massachusetts, primarily to residents of that State. Microfilm copies of these records were not received by NCHS. Figures for the United States and the New England Division are also somewhat affected.

### Alabama data

The 1988 statistics for deaths show no deaths assigned to the City of Prattville in Autauga County. The death records that should have been assigned to this area were instead assigned to the Balance of County due to a processing error.

### Quality control procedures

*Demographic items on the death certificate*—As previously indicated, for 1988 the mortality data for these items were obtained from two sources: photocopies of the original certificates furnished by the Virgin Islands and Guam and records on data tape furnished by the 50 States, the District of Columbia, New York City, and Puerto Rico. For the Virgin Islands and Guam, which sent only copies of the original certificates, the demographic items were coded for 100 percent of the death certificates. The demographic coding for 100 percent of the certificates was independently verified.

As part of the quality control procedures for mortality data, each registration area goes through a calibration period, during which it must achieve the specified error tolerance level of 2 percent per item for 3 consecutive months, based on independent verification by NCHS of a 50-percent sample of that area's records. Once the area has achieved the required error

tolerance level, a sample of 70–80 records per month is used to monitor quality of coding. All areas providing data on computer tapes prior to 1988 have achieved the specified error tolerance; accordingly, the demographic items on about 70–80 records per area per month were independently verified by NCHS. The estimated average error rate for all demographic items in 1988 was 0.25 percent.

These verification procedures involve controlling for two types of error (coding and entering into the data record tape) at the same time, and the error rates are a combined measure of both types. It may be assumed that the entering errors are randomly distributed across all items on the record, but this assumption cannot be made as readily for coding errors. Although systematic errors in coding infrequent events may escape detection during sample verification, it is probable that some of these errors were detected during the initial period when 50 percent of the file was being verified, thus providing an opportunity to retrain the coders.

*Medical items on the death certificate*—As is true for demographic data, mortality medical data are subject to quality control procedures to control for errors of both coding and data entry. Each of the 27 registration areas that in 1988 furnished NCHS with coded medical information according to NCHS specifications first had to qualify for sample verification. During an initial calibration period, the area had to demonstrate that its staff could achieve a specified error tolerance level of less than 5 percent for coding all medical items. After the area had achieved the required error tolerance level, a sample of 70–80 records per month was used to monitor quality of medical coding. For these 27 States, the average coding error rate in 1988 was estimated at just over 4 percent.

For the remaining 23 States, the District of Columbia, New York City, Puerto Rico, the Virgin Islands, and Guam, NCHS coded the medical items for 100 percent of the death records. A 1-percent sample of the records was independently coded for quality control purposes. The estimated average error rate for these areas was about 3 percent.

The ACME system for selecting the underlying cause of death through computer application contributes to the quality control of medical items on the death certificate. (See section "Automated selection of underlying cause of death.")

*Demographic items on the report of fetal death*—For 1988, all data on fetal deaths, except for New York State (excluding New York City), were coded under contract by the U.S. Bureau of the Census. Coding and entering of information on data tapes were verified on a 100-percent basis because of the relatively small number of records involved.

*Other control procedures*—After coding and entering on data tape are completed, record counts are balanced against control totals for each shipment of records from a registration area. Editing procedures ensure that records with inconsistent or impossible codes are modified. Inconsistent codes are those, for example, indicating a contradiction between cause of death and age or sex of the decedent. Records so identified during the computer editing process are either corrected by reference to the source record or adjusted by arbitrary code assignment (28). Further, conditions specified on a list of infrequent or rare causes of death are confirmed by the certifier or a State Health

Officer. All subsequent operations in tabulating and in preparing tables are verified during the computer processing or by statistical clerks.

#### Estimates of errors arising from 50-percent sample for 1972

Death statistics for 1972 in this report (excluding fetal-death statistics) are based on a 50-percent sample of all deaths occurring in the 50 States and the District of Columbia. A description of the sample design and a table of the percent errors of the estimated numbers of deaths by size of estimate and total deaths in the area are shown in the Technical Appendix From *Vital Statistics of the United States, 1972*, Volume II, Mortality, Part A.

## COMPUTATION OF RATES AND OTHER MEASURES

### Population bases

The population bases from which death rates shown in this report are computed are prepared by the U.S. Bureau of the Census. Rates for 1940, 1950, 1960, 1970, and 1980 are based on the population enumerated as of April 1 in the censuses for those years. Rates for all other years use the estimated midyear (July 1) population. Death rates for the United States, individual States, and SMSA's are based on the total resident populations of the respective areas. Except as noted, these populations exclude the Armed Forces abroad but include the Armed Forces stationed in each area.

The resident populations of the birth- and death-registration States for 1900-32 and of the United States for 1900-88 are shown in table 7-1. In addition, the population including Armed Forces abroad is shown for the United States. Table C lists the sources for these populations.

**Population estimates for 1988**—The population of the United States estimated by age, race, and sex for 1988 is shown in table 7-2, and the population for each State by broad age groups follows in table 7-3. Population estimates for 1984-88 incorporate new estimation procedures for net migration and net undocumented immigration. The 1988 estimates are comparable with those for 1984-87 but are not strictly comparable with the postcensal estimates for 1981-83 shown in tables 7-2 and 7-3 of *Vital Statistics of the United States*, Volume II, for those years. Although the death rates and estimates of life expectancy for 1984-88 are not strictly comparable with those for previous years, the trends for the total population and most age-race-sex groups are not substantially affected. For additional details, see the Technical Appendix From *Vital Statistics of the United States, 1984*, Volume II, and the report of the U.S. Bureau of the Census (29). Population data by race are consistent with the modified (see below) 1980 population by race.

**Population for 1980**—The population of the United States by age, race, and sex and the population for each State by age are shown in tables 7-2 and 7-3, respectively, of *Vital Statistics of the United States, 1980*, Volume II. The figures by race have been modified as described below.

The racial counts in the 1980 census are affected by changes in reporting practices, particularly of the Hispanic population, and in coding and classifying. One particular change created a major inconsistency between the 1980 census data and historical data series, including censuses and vital statistics. About 40 percent of the Hispanic population counted in 1980, more than 5.8 million persons, did not mark one of the specified races listed on the census questionnaire but instead marked the "Other" category.

In the 1980 census, coding procedures were modified for persons who marked "Other" race and wrote in national origin designation of a Latin American country or a specific Hispanic-origin group in response to the racial question. These persons remained in the "Other" racial category in 1980 census data; in previous censuses and in vital statistics, such responses had almost always been coded into the "White" category.

To maintain comparability, the "Other" racial category in the 1980 census was reallocated to be consistent with previous procedures. Persons who marked the "Other" racial category and reported any Spanish origin on the Spanish origin question (5,840,648 persons) were distributed to white and black races in proportion to the distribution of persons of Hispanic origin who actually reported their race as "White" or "Black." This was done for each age-sex group.

As a result of this procedure, 5,705,155 persons (98 percent) were added to the white population and 135,493 persons (2 percent) to the black population. Persons who marked the "Other" racial category and reported that they were not of Spanish origin (916,338 persons) were distributed as follows: 20 percent in each age-sex group were added to the "Asian and Pacific Islander" category (183,268 persons), and 80 percent were added to the "White" category (733,070 persons). The count of American Indians, Eskimos, and Aleuts was not affected by these procedures. Unpublished tabulations of these modified census counts were obtained from the U.S. Bureau of the Census and used to compute the rates for this volume.

**Population estimates for 1971-79**—Death rates in this volume for 1971-79 used revised population estimates that are consistent with the 1980 census levels. The 1980 census enumerated approximately 5.5 million more persons than had previously been estimated for April 1, 1980 (30). These revised estimates for the United States by age, race, and sex are published by the U.S. Bureau of the Census in *Current Population Reports*, Series P-25, Number 917. Unpublished revised estimates for States were obtained from the U.S. Bureau of the Census. For Puerto Rico, the Virgin Islands, and Guam, revised estimates are published in *Current Population Reports*, Series P-25, Number 919.

**Population estimates for 1961-69**—Death rates in this volume for 1961-69 are based on revised estimates of the population and thus may differ slightly from rates published before 1976. The rates shown in tables 1-1 and 1-2, the life table values in table 6-5, and the population estimates in table 7-1 for each year in the period 1961-69 have been revised to reflect modified population bases, as published in the U.S. Bureau of the Census, *Current Population Reports*, Series P-25, Number 519. The data shown in table 1-10 for 1961-69 have not been revised.

Table C. Sources for resident population and population including Armed Forces abroad: Birth- and death-registration States, 1900-1932, and United States, 1900-1966

Year	Source
<b>United States</b>	
1988 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 1045, 1990
1986-87 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 1027, Mar. 1988
1985 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 1000, Feb. 1987
1984 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 985, Apr. 1986
1983 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 965, Mar. 1985
1982 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 949, May 1984
1981 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 929, May 1983
1980 -----	U.S. Bureau of the Census, <i>U.S. Census of Population: 1980, Number of Inhabitants</i> , PC80-1A1, United States Summary, 1983
1971-79 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 917, July 1982
1970 -----	U.S. Bureau of the Census, <i>U.S. Census of Population: 1970, Number of Inhabitants</i> Final Report, PC(1)-A1, United States Summary, 1971
1961-69 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 519, April, 1974
1960 -----	U.S. Bureau of the Census, <i>U.S. Census of Population: 1960, Number of Inhabitants</i> , PC(1)-A1, United States Summary, 1964
1951-59 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 310, June 30, 1965
1940-50 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 499, May 1973
1930-39 -----	U.S. Bureau of the Census, <i>Current Population Reports</i> , Series P-25, No. 499, May 1973, and National Office of Vital Statistics, <i>Vital Statistics Rates in the United States, 1900-1940</i> , 1947
1920-29 -----	National Office of Vital Statistics, <i>Vital Statistics Rates in the United States, 1900-1940</i> , 1947
1917-19 -----	Same as for 1930-39
1900-16 -----	Same as for 1920-29

*Rates and ratios based on live births*—Infant and maternal mortality rates, and fetal death and perinatal mortality ratios, are computed on the basis of the number of live births. Fetal death and perinatal mortality rates are computed on the basis of the number of live births and fetal deaths. Counts of live births are published annually in *Vital Statistics of the United States*, Volume I, Natality.

*New Jersey*—As previously indicated, data by race are not available for New Jersey for 1962 and 1963. Therefore, for 1962 and 1963, NCHS estimated a population by age, race, and sex that excluded New Jersey for rates shown by race. The methodology used to estimate the revised population excluding New Jersey is discussed in the Technical Appendixes of the 1962 and 1963 volumes.

#### Net census undercount

Just as the underenumeration of deaths and the misreporting of demographic characteristics on the death certificate can introduce error into the annual rates, so can enumeration errors in the latest decennial census. This is because annual population estimates for the intercensal interval, which are used in the denominator for calculating death rates, are computed using the decennial census count as a base (29). Net census undercount is the result of miscounting and misreporting of demographic characteristics such as age. Age-specific death rates are affected by both the net census undercount and the misreporting of age on the death certificate (31). To the extent that the net undercount is substantial and that it varies among subgroups and geographic areas, it may have important consequences for vital statistics measures.

Although death rates based on a population adjusted for net census undercount may be more accurate than rates based on an unadjusted population, rates in this volume are not

adjusted; rather, they are computed using population estimates that preserve the age pattern of the net census undercount across the intercensal interval. Thus, it is important to consider the possible impact of net census undercount on death rates.

The U.S. Bureau of the Census has conducted extensive research on the completeness of coverage of the U.S. population (including underenumeration and misstatement of age, race, and sex) in the last four decennial censuses—1950, 1960, 1970, and 1980. From this work have come estimates of the national population that was not counted by age, race, and sex (32, 33). The reports for 1980 include estimates of net census undercount using alternative methodological assumptions for age, race, and sex subgroups of the national population (34). These studies indicate that, although coverage was improved over previous censuses, there was differential coverage in the 1980 census among the population subgroups, that is, some age, race, and sex groups were more completely counted than others.

Net census undercounts can affect levels of the observed vital rates, differences among groups, and levels and group differences shown by summary measures such as age-adjusted death rates and life expectancy.

*Levels and differentials*—If adjustments were made for net census undercount, the size of denominators of the death rates generally would increase and the rates, therefore, would decrease. The adjusted rates for 1980 can be computed by multiplying the reported rates by ratios of the census-level resident population to the resident population adjusted for the estimated net census undercount (table 7-4). A ratio of less than 1.0 indicates a net census undercount and, when applied, results in a corresponding decrease in the death rate. A ratio greater than 1.0—indicating a net census overcount—multiplied by the reported rate results in an increase in the death rate.

Coverage ratios for all ages show that, in general, females were more completely enumerated than males and the white population more completely than the population of all other races in the 1980 Census of Population. The black population was undercounted relative to the total population of all other races.

For the total population, underenumeration varied by age group, with the greatest differences found for persons aged 80-84 and 85 years and over. All other age groups were overcounted or undercounted by less than 3 percent.

Among the age-sex-race groups, coverage was lowest for black males aged 40-44 and 45-49 years. Underenumeration for these groups was 19 percent. In contrast, white females in these age groups were essentially completely enumerated. For black females and white males in these same age groups, the undercount ranged from 3 to 6 percent. For the under-1-year age group, the white population was overenumerated by 2 percent, whereas infants of other races were underenumerated by 9 percent.

If vital statistics measures were calculated with adjustments for net census undercounts for each population subgroup, the resulting rates would be differentially reduced from their original levels; that is, rates for those groups with the greatest estimated undercounts would show the greatest relative reductions due to these adjustments. Similar effects would be evident in the opposite direction for groups with overcounts. As a consequence, the ratio of mortality between the rates for males and females, and between the rates for the white population and the population of other races, or the black population, usually would be reduced.

Similarly, the differences between the death rates among subgroups of the population by cause of death would be affected by adjustments for net census undercounts. For example, for the age group 35-39 years in 1980, the ratio of the death rate for Homicide and legal intervention for black males to that for white males is 7.3, whereas the ratio of the death rates adjusted for net census undercount is 6.2. For Ischemic heart disease for males aged 40-44 years, the ratio of the death rate for the population of all other races to that for the white population is 1.2 using the unadjusted rates, but it is 1.1 when adjusted for estimated underenumeration.

**Summary measures**—The effect of net census undercount on age-adjusted death rates depends on the underenumeration of each age group and on the distribution of deaths by age. Thus, the age-adjusted death rate in 1980 for All causes would decrease from 585.8 to 579.3 per 100,000 population if the age-specific death rates were corrected for net census undercount.

For Diseases of the heart, the age-adjusted death rate for white males would decrease from 277.5 to 273.0 per 100,000 population, a decline of 1.3 percent. For black males the change, from an unadjusted rate of 327.3 to an adjusted rate of 308.3, would amount to 5.8 percent.

If death rates by age were adjusted, then the corresponding life expectancy at birth computed from these rates would change. The importance of adjustments varies by age; that is, when calculating life expectancy, the impact of an undercount or overcount is greatest at the younger ages. In general, the effect of correcting the death rates is to increase the estimate of

life expectancy at birth. Differential underenumeration among race-sex groups would lead to greater changes in life expectancy for some groups than for others. For white females who were completely enumerated in 1980, revised estimates of life expectancy would remain roughly constant; those for black males would show the greatest increase.

### Age-adjusted death rates

Age-adjusted death rates shown in this volume are computed using the distribution in 10-year age intervals of the enumerated population of the United States in 1940 as the standard population. Each figure represents the rate that would have existed had the age-specific rates of the particular year prevailed in a population whose age distribution was the same as that of the United States in 1940. The rates for the total population and for each race-sex group were adjusted using the same standard population. It is important not to compare age-adjusted death rates with crude rates. The standard 1940 population, on the basis of 1 million total population, is as follows:

Age	Number
All ages	1,000,000
Under 1 year	15,343
1-4 years	64,718
5-14 years	170,355
15-24 years	181,677
25-34 years	162,066
35-44 years	139,237
45-54 years	117,811
55-64 years	80,294
65-74 years	48,426
75-84 years	17,303
85 years and over	2,770

### Life Tables

U.S. abridged life tables are constructed by reference to a standard table (35). Life tables for the decennial period 1979-81 are used as the standard life tables in constructing the 1980-88 abridged life tables. With the availability of the 1979-81 standard life tables, revised life table values were computed for 1980-82; these appeared for the first time in *Vital Statistics of the United States, 1983*.

Life tables for the decennial period 1969-71 are used as the standard life tables in constructing the 1970-79 abridged life tables. Life table values for 1970-73 were first revised in *Vital Statistics of the United States, 1977*; before 1977, life table values for 1970-73 were constructed using the 1959-61 decennial life tables. In addition, life table values for 1951-59, 1961-69, and 1971-79 appearing in this volume are based on revised intercensal estimates of the populations for those years. As such, these life table values may differ from life table values for those years published in previous volumes.

The change in the population estimation methodology (see above section "Population bases") results in life expectancies at certain 5-year age intervals for 1984-88 that are lower than those that would have resulted had they been based on the same methodology used to compute 1983 life expectancies.



For additional details, see Technical Appendix for *Vital Statistics of the United States, 1984*, Volume II.

There has been an increasing interest in data on the average length of life ( $e_0^p$ ) for single calendar years before the initiation of the annual abridged life table series for selected race-sex groups in 1945. The figures in table 6-5 for the race and sex groups for the following years were estimated to meet these needs (36).

Years	Race and sex groups
1900-45. . . . .	Total
1900-47. . . . .	Male
1900-47. . . . .	Female
1900-50. . . . .	White
1900-44. . . . .	White, male
1900-44. . . . .	White, female
1900-50. . . . .	All other
1900-44. . . . .	All other, male
1900-44. . . . .	All other, female

The geographic areas covered in life tables before 1929-31 were limited to the death-registration areas. Life tables for 1900-1902 and 1909-11 were constructed using mortality data from the 1900 death-registration States—10 States and the District of Columbia—and for 1919-21 from the 1920 death-registration States—34 States and the District of Columbia. The tables for 1929-31 through 1958 cover the conterminous United States. Decennial life table values for the 3-year period 1959-61 were derived from data that include both Alaska and Hawaii for each year (table 6-4). Data for each year shown in table 6-5 include Alaska beginning in 1959 and Hawaii beginning in 1960. It is believed that the inclusion of these two States does not materially affect life table values.

#### Random variation in numbers of deaths, death rates, and mortality rates and ratios

**Deaths and population-based rates**—Except for 1972, the numbers of deaths reported for a community represent complete counts of such events. As such, they are not subject to sampling error, although they are subject to errors in the registration process. However, when the figures are used for analytical purposes, such as the comparison of rates over a time period or for different areas, the number of events that actually occurred may be considered as one of a large series of possible results that could have arisen under the same circumstances (37). The probable range of values may be estimated from the actual figures according to certain statistical assumptions.

In general, distributions of vital events may be assumed to follow the binomial distribution. Estimates of standard error and tests of significance under this assumption are described in most standard statistics texts. When the number of events is

large, the standard error, expressed as a percent of the number or rate, is usually small.

When the number of events is small (perhaps less than 100) and the probability of such an event is small, considerable caution must be observed in interpreting the conditions described by the figures. This is particularly true for infant mortality rates, cause-specific death rates, and death rates for countries. Events of a rare nature may be assumed to follow a Poisson probability distribution. For this distribution, a simple approximation may be used to estimate a confidence interval, as follows.

If  $N$  is the number of registered deaths in the population and  $R$  is the corresponding rate, the chance is 19 in 20 that

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

covers the "true" number of events.

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

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 of significance, if it exceeds

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

For example, if the observed death rate for a community were 10.0 per 1,000 population and if this rate were based on 20 recorded deaths, then the chance is 19 in 20 that the "true" death rate for that community lies between 5.5 and 14.5 per 1,000 population. If the death rate for this community of 10.0 per 1,000 population were being compared with a rate of 20.0 per 1,000 population for a second community, which is based on 10 recorded deaths, then the difference between the rates for the two communities is 10.0. This difference is less than twice the standard error of the difference

$$2\sqrt{\frac{(10.0)^2}{20} + \frac{(20.0)^2}{10}}$$

of the two rates, which is computed to be 13.4. From this, it is concluded that the difference between the rates for the two communities is not statistically significant at the 0.05 level of significance.

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# APPENDIX B

## ICD Codes for the 8th and 9th Revision and Comparability Ratios, 72 Selected Causes

Comparable category numbers, estimated comparability ratios, and estimates of sampling variability of comparability ratios for 72 selected causes:  
based on a stratified random sample of 1976 deaths, United States

(For discussion of comparability ratios see Explanatory notes)

Cause of death (Ninth Revision International Classification of Diseases, 1975)		Category numbers according to the Eighth Revision	Estimated compara- bility ratio <sup>1</sup>	Error of the estimate of the ratio in (2)		95 percent con- fidence limits <sup>2</sup>		
				Standard error	Relative standard error	Upper	Lower	
			(1)	(2)	(3)	(4)	(5)	(6)
All causes				1.0000				
Shigellosis and amebiasis	004-006	004-006	0.9818	0.0378	3.9		1.0559	0.9077
Certain other intestinal infections	007-009	008-009	0.1821	0.0207	11.4		0.2227	0.1415
Tuberculosis	010-018	010-019	0.7688	0.0119	1.6		0.7901	0.7435
Tuberculosis of respiratory system	010-012	010-012	0.8429	0.0146	1.7		0.8715	0.8143
Other tuberculosis	013-018	013-019	0.5077	0.0167	3.3		0.5404	0.4750
Whooping cough	033	033	0.8571	0.0000	0.0		0.8571	0.8571
Streptococcal sore throat, scarlatina, and erysipelas	034-035	034	1.4286	0.0000	0.0		1.4286	1.4286
Meningococcal infection	036	036	0.9788	0.0124	1.3		1.0030	0.9548
Septicemia	038	038	0.8500	0.0180	2.1		0.8853	0.8147
Acute poliomyelitis	045	040-043	0.5000	0.0000	0.0		0.5000	0.5000
Measles	055	055	0.9167	0.0000	0.0		0.9167	0.9167
Viral hepatitis	070	070	1.3986	0.0820	5.9		1.5593	1.2373
Syphilis	090-097	090-097	1.0089	0.0259	2.6		1.0598	0.9582
All other infectious and parasitic diseases	001-003, 005, 020-032, 037, 039-041, 046-054, 056-066, 071-088, 098-139	Remainder of OC	36	1.0321	0.0634	6.1	1.1563	0.9078
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140-208	140-209	1.0026	0.0017	0.2		1.0059	0.9993
Malignant neoplasms of lip, oral cavity, and pharynx	140-149	140-149	1.0117	0.0087	0.9		1.0286	0.9948
Malignant neoplasms of digestive organs and peritoneum	150-159	150-159	1.0330	0.0035	0.3		1.0398	1.0262
Malignant neoplasms of respiratory and intrathoracic organs	160-165	160-163	1.0007	0.0033	0.3		1.0071	0.9943
Malignant neoplasm of breast	174-175	174	1.0089	0.0022	0.2		1.0131	1.0047
Malignant neoplasms of genital organs	179-187	180-187	1.0111	0.0031	0.3		1.0171	1.0051
Malignant neoplasms of urinary organs	188-189	188, 189	0.9924	0.0045	0.5		1.0011	0.9837
Malignant neoplasms of all other and unspecified sites	170-173, 190-199	170-173, 190-199	0.9557	0.0082	0.9		0.9718	0.9396
Leukemia	204-208	204-207	1.0070	0.0056	0.6		1.0180	0.9960
Other malignant neoplasms of lymphatic and hematopoietic tissues	200-203	200-203, 208, 209	0.9385	0.0069	0.7		0.9519	0.9251
Benign neoplasms, carcinoma in situ, and neoplasms of uncertain behavior and of unspecified nature	210-239	210-239	1.2085	0.0261	2.2		1.2595	1.1575
Diabetes mellitus	250	250	0.9991	0.0087	0.9		1.0162	0.9820
Nutritional deficiencies	260-269	260-269	0.7167	0.0262	3.7		0.7680	0.6654
Anemias	280-285	280-285	0.9296	0.0124	1.3		0.9538	0.9054
Meningitis	320-322	320	0.9459	0.0163	1.7		0.9777	0.9141
Major cardiovascular diseases	390-448	390-448	1.0069	0.0004	0.0		1.0076	1.0062
Diseases of heart	390-398, 402, 404-429	390-398, 402, 404, 410-429	1.0126	0.0039	0.4		1.0202	1.0050
Rheumatic fever and rheumatic heart disease	390-398	390-398	0.6648	0.0080	1.2		0.6804	0.6492
Hypertensive heart disease	402	402	3.3022	0.0557	1.7		3.4114	3.1930
Hypertensive heart and renal disease	404	404	1.2119	0.0438	3.6		1.2978	1.1260
Ischemic heart disease	410-414	410-413	0.8784	0.0038	0.4		0.8859	0.8709
Acute myocardial infarction	410	410	1.0003	0.0054	0.5		1.0108	0.9898
Other acute and subacute forms of ischemic heart disease	411	411	1.2274	0.0661	5.4		1.3519	1.0929
Angina pectoris	413	413	1.0484	0.0656	6.4		1.1785	0.9179
Old myocardial infarction and other forms of chronic ischemic heart disease	412, 414	412	0.7533	0.0055	0.7		0.7640	0.7426
Other diseases of endocardium	424	424, 428	1.2288	0.0227	1.8		1.2731	1.1841
All other forms of heart disease	415-423, 425-429	420-423, 425-427, 429	2.5035	0.0257	1.0		2.5539	2.4531
Hypertension with or without renal disease	401, 403	400, 401, 403	1.2703	0.0294	2.3		1.3280	1.2126
Cerebrovascular diseases	430-438	430-438	1.0049	0.0066	0.7		1.0178	0.9920
Intracerebral and other intracranial hemorrhage	431-432	431	0.9969	0.0068	0.7		1.0102	0.9836
Cerebral thrombosis and unspecified occlusion of cerebral arteries	434.0, 434.9	433	1.0340	0.0222	2.1		1.0774	0.9906

See footnotes at end of table

Comparable category numbers, estimated comparability ratios, and estimates of sampling variability of comparability ratios for 72 selected causes, based on a stratified random sample of 1976 deaths: United States—Con.

(For discussion of comparability ratios see Explanatory notes.)

Cause of death (Ninth Revision International Classification of Diseases 1975)	Category numbers according to the Eighth Revision	Estimated compara- bility ratio <sup>2</sup>	Error of the estimate of the ratio in (2)		95 percent con- fidence limits <sup>2</sup>	
			Standard error	Relative standard error	Upper	Lower
	(1)	(2)	(3)	(4)	(5)	(6)
Major cardiovascular diseases—Con.						
Cerebrovascular diseases—Con.						
Cerebral embolism..... 434.1	434	1.1211	0.0924	8.2	1.3022	0.9400
All other and late effects of cerebrovascular diseases..... 430, 432, 435-438	430, 432, 435-438	0.9948	0.0081	0.8	1.0067	0.9829
Atherosclerosis..... 440	440	1.0648	0.0248	2.3	1.1130	1.0168
Other diseases of arteries, arterioles, and capillaries... 441-448	441-448	0.7408	0.0088	1.3	0.7600	0.7218
Acute bronchitis and bronchiolitis..... 468	468	0.8888	0.0274	3.1	0.9425	0.8351
Pneumonia and influenza..... 480-487	470-474 480-486	0.9264	0.0087	0.7	0.9394	0.9134
Pneumonia..... 480-486	480-486	0.9199	0.0078	0.8	0.9347	0.9051
Influenza..... 487	470-474	0.9714	0.0078	0.8	0.9868	0.9562
Chronic obstructive pulmonary diseases and allied conditions..... 490-496	490-493	1.8846	0.0150	0.8	1.9141	1.8551
Bronchitis, chronic and unspecified..... 490-491	490-491	0.9383	0.0134	1.4	0.9648	0.9120
Emphysema..... 492	492	0.9770	0.0127	1.3	1.0018	0.9522
Asthma..... 493	493	1.3544	0.0638	4.7	1.4790	1.2298
Other chronic obstructive pulmonary diseases and allied conditions..... 494-496	3	3...	3...	3...	3...	3...
Ulcer of stomach and duodenum..... 531-533	531-533	1.1192	0.0247	2.2	1.1675	1.0709
Appendicitis..... 540-543	540-543	1.0080	0.0284	2.8	1.0697	0.9563
Hernia of abdominal cavity and intestinal obstruction without mention of hernia..... 550-553, 560	550-553, 560	0.9432	0.0169	1.8	0.9762	0.9102
Chronic liver disease and cirrhosis..... 571	571	1.0110	0.0069	0.7	1.0245	0.9975
Cholelithiasis and other disorders of gallbladder..... 574-575	574 575	1.0494	0.0445	4.2	1.1366	0.9622
Nephritis, nephrotic syndrome, and nephrosis..... 580-589	580-584	1.7397	0.0777	4.5	1.8970	1.5874
Acute glomerulonephritis and nephrotic syndrome... 580-581	580, 581	0.2422	0.0185	7.6	0.2783	0.2061
Chronic glomerulonephritis, nephritis and nephropathy, not specified as acute or chronic, and renal sclerosis, unspecified..... 582-583, 587	582-584	0.4954	0.0195	3.9	0.5335	0.4573
Renal failure, disorders resulting from impaired renal function, and small kidney of unknown cause..... 584-586, 588-589	582-584	1.6327	0.0958	5.9	1.8205	1.4449
Infections of kidney..... 590	590	0.9878	0.0091	0.9	1.0056	0.9700
Hyperplasia of prostate..... 600	600	1.0232	0.0226	2.2	1.0674	0.9790
Complications of pregnancy, childbirth, and the puerperium..... 630-676	630-678	1.1000	0.0435	4.0	1.1853	1.0147
Pregnancy with abortive outcome..... 630-638	640-645	3.8125	0.0000	0.0	3.8125	3.8125
Other complications of pregnancy, childbirth, and the puerperium..... 640-676	630-639, 650-678	0.9840	0.0454	4.6	1.0729	0.8951
Congenital anomalies..... 740-759	740-759	0.9984	0.0100	1.0	1.0179	0.9789
Certain conditions originating in the perinatal period... 760-778	760-769.2, 769 4-772, 774-778	1.0765	0.0238	2.2	1.1230	1.0300
Birth trauma, intrauterine hypoxia, birth asphyxia, and respiratory distress syndrome..... 767-769	764-768, 772, 776	0.7483	0.0306	4.1	0.8083	0.6883
Other conditions originating in the perinatal period..... 760-766, 770-778	Remainder of 760-778	1.4638	0.0371	2.5	1.5367	1.3911
Symptoms, signs, and ill-defined conditions..... 780-799	780-798	0.8102	0.0121	1.5	0.8338	0.7866
All other diseases..... Residual	Residual	0.7786	0.0082	1.1	0.7947	0.7625
Accidents and adverse effects..... E800-E949	E800-E949	0.9970	0.0030	0.3	1.0029	0.9911
Motor vehicle accidents..... E810-E825	E810-E823	1.0117	0.0027	0.3	1.0189	1.0065
All other accidents and adverse effects..... E800-E807, E826-849	E800-E807, E825-E949	0.9841	0.0051	0.5	0.9941	0.9741
Suicide..... E950-E959	E950-E959	1.0032	0.0042	0.4	1.0114	0.9950
Homicide and legal intervention..... E960-E978	E960-E978	1.0057	0.0030	0.3	1.0116	0.9999
All other external causes..... E980-E999	E980-E999	0.9676	0.0144	1.5	0.9957	0.9393

<sup>1</sup> Ratio of estimated number of deaths assigned according to the Ninth Revision to deaths assigned according to the Eighth Revision.

<sup>2</sup> The probability is 95 percent that the true comparability ratio will have a value between the upper and lower limits shown. These limits were computed before the estimated standard error was rounded to the fourth decimal.

<sup>3</sup> Chronic obstructive lung disease without mention of asthma, bronchitis, or emphysema (ICD No. "518.3") introduced by NCHS to be used with the Eighth Revision is comparable to Other chronic obstructive pulmonary diseases and allied conditions (ICD Nos. 494-496) of the Ninth Revision. The comparability ratio for this set of titles is 1.0054, with a standard error of 0.0118, a relative error of 1.2 percent, and 95 percent confidence limits of 1.0285 and 0.9823. These data are not shown in this table because there are no sample data for ICD No. "518.3."

## **APPENDIX C**

### **Description of the Population Estimates**

This section contains a detailed description of the population estimates on the CMF. Most of the national, state, and county population estimates on the CMF were prepared by the U.S. Bureau of the Census and have not been altered by NCHS. A description of the population files provided to NCHS by the U.S. Bureau of the Census and of the methodology used by the U.S. Bureau of the Census to derive the population estimates on these files is provided here.

The population estimates on the CMF are for the resident population of the United States. The 1990 Census definition of a resident is a person "usually resident" in that area. Estimates of the resident population of the U.S. exclude the U.S. Armed Forces stationed overseas as well as civilian U.S. citizens whose usual place of residence is outside the U.S.

To permit the calculation of infant mortality rates, NCHS live-birth data were substituted on the CMF for the U.S. Bureau of the Census estimates of the population under 1 year of age. The race code for the live-birth records was derived from "race of mother". Some of the U.S. Bureau of the Census files had estimates for the age group 0-4 years and others had estimates for the age groups under 1 year of age and 1-4 years of age. When the Census file had an estimate for the age group 0-4 years, an estimate of the age group 1-4 years was obtained for the CMF by multiplying the estimate for the 0-4 age group by 0.8.

The population estimates for the census years, 1970, 1980, and 1990, are from the age-race modified census counts.

The population estimates for 1971-79 and 1981-88 are intercensal population estimates. Intercensal population estimates are estimates made for years between two completed censuses. They measure population change between the two census years as the difference between the two census populations, with some method for distributing this change over the decade. In general, the U.S. Bureau of the Census has applied the difference between the two censuses to the postcensal estimates for the decade in order to preserve the pattern of change observed over the decade. Postcensal estimates depend upon a) a census base population, b) measures of population change from the date of the census base population to the date of the estimate. Measures of population change used by the U.S. Bureau of the Census include a) addition of live births, b) subtraction of deaths, c) inclusion of net international migration, and d) estimates of internal migration.

For the census years, the national, state, and county estimates on the CMF are derived from the same file. As a result, totals calculated from the national, state, and county estimates should agree with each other. For the non-censal years, the national, state, and county estimates on this file are from separate series of estimates. The estimates from each series are controlled against various totals, but because of rounding error (no fractional population estimates are used), sums of estimates from

one series may not equal equivalent sums of estimates from another series. For example, an estimate of a state population derived by summing county populations may be different from the estimate of that state's population from the state population series. Similarly, national population estimates obtained by summing state or county population estimates will produce different estimate than those in the national series of estimates. Thus, the user is advised to use national population estimates when calculating national death rates and state population estimates when calculating state death rates.

Estimates of U.S. population totals can be obtained on the CMF by summing the national estimates for age, race, and/or sex groups. Because the national population estimates for non-censal years are rounded to the nearest 1,000, forming totals by summing age-race-sex population estimates may result in rounding error. The U.S. population totals used by NCHS to calculate published death rates are rounded to the nearest 1,000 after aggregating across the age-race-sex groups rather than before aggregating. As a result, death rates calculated using U.S. population totals calculated from the CMF may differ from those published by NCHS..

The state and county population estimates have been provided for age-race-sex groups for the user's convenience in aggregating to various groups. However, the limitations of the methodology used to derive the state and county estimates are such that the U.S. Bureau of the Census does not consider the estimates to be accurate for each age-race-sex cell. Although special censuses give some indication of the quality of the intercensal county estimates, the exact degree of overall error is unknown. Further, although the county and state estimates are not rounded, the U.S. Bureau of the Census does not consider the estimates to be accurate to the last digit.

Specific details concerning the derivation and limitations of the population estimates follow:

1. **July 1, 1968 and July 1, 1969 estimates of the national resident population.** The estimates on the CMF are U.S. Bureau of the Census intercensal estimates, to the nearest 1,000, of the July 1, 1968 and July 1, 1969 resident population of the U.S. by 5-year age group (under 1, 1-4, 5-9, ..., 85 + years), sex, and race (White, Black, other races)). NCHS live-birth counts were substituted for the estimates of the population under 1 year of age; the live-birth counts were not rounded.

2. **July 1, 1968 and July 1, 1969 estimates of state and county resident populations.** These estimates (except for the population under 1 year for which live-birth counts were substituted) were calculated by NCHS using linear extrapolation from the corresponding state and county 1970 and 1971 estimates of the July 1 resident population.

3. **April 1, 1970 estimates of national, state, and county resident populations.** The estimates were from a special census file of the April 1, 1970 resident population by 5-year age group (0-4, 5-9, ..., 85 +), sex, and race (White, Black, other races). As for other years, NCHS live-birth counts were substituted for the estimates of the population under 1 year of age. National and state estimates were obtained by summing the appropriate county estimates.

**This special census file included modifications made to the original census count data by the U.S. Bureau of the Census:**

**a. Numerous small changes at the county and sub-county level were made to the original census file to correct errors discovered after publication of the original data. These changes resulted in an increase of 93,494 persons in the total U.S. population.**

**b. The race classifications for the 1970 and 1980 census data were adjusted to be consistent with each other and with vital statistics. Some 327,000 persons of Hispanic origin who reported their race as "Other" (race not specified) were transferred to "White". The Black population was not affected by the race adjustment.**

**c. Some 103,000 persons who reported their age as over 100 years had their age recoded to between 85 and 100 years. This adjustment did not affect this file because the oldest age group on the file is 85 years and over.**

**4. July 1, 1971-79 estimates of the national resident population.** These estimates are from a series of intercensal estimates of the July 1 resident population of the U.S. by age group (under 1, 1-4, 5-9, ..., 85+ years), sex, and race (White, Black, other races) for the years 1971-79 developed by the U.S. Bureau of the Census. NCHS live-birth counts were substituted for the estimates of the population under 1 year of age. The population estimates, except for the live-birth counts, were rounded to the nearest 1,000.

**5. July 1, 1971-79 estimates of state resident populations.** The U.S. Bureau of the Census did not produce intercensal state population estimates by age, race, and sex for the 1970's. Therefore, the state population estimates on the CMF for this period were obtained by summing the intercensal populations for the counties in each state (except for the population under 1 year of age for which live-birth counts were substituted).

**6. July 1, 1971-79 estimates of county resident populations.** These estimates are from a series of intercensal estimates of the July 1 resident population of counties in the U.S. (as defined in 1970) by 5-year age group (0-4, 5-9, ..., 85+ years), sex, and race (White, Black, other races) for the years 1970-80 prepared by the U.S. Bureau of the Census. Estimates of the population of the age group 1-4 years were obtained by multiplying the estimates for the age group 0-4 years by 0.8. NCHS live-birth counts were substituted on the CMF for estimates of the population under 1 year of age. The methodology used by the U.S. Bureau of the Census to produce these intercensal estimates is described briefly here.

The modified age-race versions of the 1970 census (see above) and of the 1980 census (description follows) were used by the U.S. Bureau of the Census in the derivation of the 1971-79 intercensal estimates. The intercensal estimates were produced by an extension of the methodology used to produce the postcensal estimates for the 70's.<sup>5,6</sup> The postcensal estimates were produced for two race groups (White, Black and other races) by sex. The revision of the postcensal estimates to take into account the 1980 census was done for these four race-sex



groups first. Briefly, the computer programs used to produce the postcensal estimates for 1970-75 and 1975-80 were rerun after revising the base input data and the methodology. These computer runs produced estimates for 1975 and 1980 using race controls for each county at the all-ages level. These estimates were consistent with both the 1970 and 1980 censuses. The age detail for each county was not controlled and the 1980 estimates produced from this process differed from the 1980 Census counts. The 1975 estimates were adjusted, at each age level, by a proportion of the difference between the 1980 estimate and the 1980 Census counts. The 1975 estimates were further adjusted to agree with previously prepared intercensal estimates of the total population of each county and with national age-race-sex estimates. The purpose of these procedures was to produce the best possible estimate for July 1, 1975. Separate series of estimates were made for 1) the civilian, non-college, noninstitutional population under age 65, 2) the population over age 65, and 3) special populations (military, college, institutional). Using the 1970, 1975, and 1980 estimates of the civilian non-college population under age 65, estimates for the years 1971-74 and 1976-79 were obtained by interpolation. Special estimates for the population over age 65 and for military and college populations were added to these estimates each year. Finally, as for the 1975 estimates, the intercensal estimates were adjusted to agree with intercensal estimates of the total population of each county and to generally agree with national intercensal estimates by age, race, and sex.

After obtaining a complete set of intercensal estimates for 1971-79, the Black population was estimated as a proportion of the Black and other races population. To do this, the proportion of the Black and other races population that is Black according to the 1970 and 1980 censuses was calculated for each county-age-sex group. Straight linear interpolation was used to obtain a set of proportions for each year. Estimates of the Black population were obtained by multiplying these proportions times the estimates for the corresponding Black and other races population. The estimates for the Black population were not controlled against other estimates.

Three independent cities in Virginia (Manassas, Manassas Park, and Poquoson) were not treated as separate counties in 1970 but were treated as separate entities in later years. Thus, there were no population estimates for these cities on the 1971-79 intercensal file. The resident population of these three cities in 1979 was calculated by NCHS so that the counties on the CMF would be consistent for 1979-90. Linear extrapolation from the July 1, 1980 and July 1, 1981 estimates of the resident population of these counties was used to calculate the 1979 population estimates by age, race, and sex. The populations of the counties from which these independent cities arose (Prince William for Manassas and Manassas Park and York for Poquoson) were recalculated by subtracting the estimated populations of the cities.

Limitations of the intercensal estimates included:

- 1) The military age distribution changed during the 1970's.: the 20-24 year age group decreased and the 25-29 year age group increased. The special adjustment for military populations did not take this change into account. As a result, the 20-24 year group is overestimated and the 25-29 year group is underestimated. The estimates for the counties of Liberty, Georgia; Chattahoochee, Georgia; Vernon, Louisiana; and Pulaski, Missouri were especially poor. A modification of the military adjustment was developed, but

was used only when the military and college populations exceeded the total county population for that age group. The modification helped, but the estimates for Liberty, Georgia were still not satisfactory, and those for the other counties mentioned were still irregular. The estimates for any county with a large military population should be reviewed before they are used.

2) Two problems with the Medicare based estimates of the population over 65 years were found. The first involved the incorrect assignment of some records with county of residence missing to the first (alphabetical) county of each State. This error was discovered in 1976 and the estimates for 1971-75 could not be changed. Beginning in 1976, however, cohort component estimates were substituted for the counties most affected:

<u>FIPS Code</u>	<u>County</u>
13001	Appling GA
18001	Adams IN
20001	Allen KS
21001	Adair KY
29001	Adair MO
39001	Adams OH
42001	Adams PA
48001	Anderson TX
49001	Beaver UT
53001	Adams WA
54001	Barbour WV
55001	Adams WI

For these counties, there is a break in the annual progression of estimates for the 65 and over age group. Better estimates for the years 1971-75 can be obtained by interpolating between 1970 and 1976.

The second problem with the Medicare data involved the assignment of county of residence for counties containing a large city at the expense of adjacent suburban counties. A study identified 16 counties and 9 independent cities where this was a serious problem. For these counties and cities, cohort component estimate was substituted after 1976:

<u>County</u>	<u>FIPS Code</u>	<u>County</u>	<u>FIPS code</u>
Baker, GA	13007	Spotsylvania, VA	51177
Crawford, GA	13079	Stafford, VA	51179
Jones, GA	13169		
Oglethorpe, GA	13221	<i>Independent cities of Virginia</i>	
Rankin, MS	28121		
Edgecombe, NC	37065	Bedford city, VA	51515
Nash, NC	37127	Covington city, VA	51580
Holmes, OH	39075	Fairfax city, VA	51600
Alleghany, VA	51005	Falls Church city, VA	51610

Bedford, VA	51019	Fredericksburg city, VA	51630
Fairfax, VA	51059	Galax city, VA	51640
Henry, VA	51089	Harrisonburg city, VA	51660
Roanoke, VA	51161	Martinsville city, VA	51690
Rockingham, VA	51165	Roanoke city, VA	51770

3) The "Black and Other" races estimates for Maverick, Texas are not correct. The estimates show a rapid increase in "Black and Other" Races beginning with 47 persons in 1970 and increasing to 789 persons in 1980. In fact, a group of several hundred American Indians moved into the county in one large group shortly before the 1980 census. Since the 1975 county population control by race was in part an interpolation between the 1970 and 1980 census data, the growth in the minority race population (being a very small proportion of total population) was fairly evenly spread through the decade by the estimating model.

7. **April 1, 1980 estimates of national, state, and county resident populations.** These estimates were from a special census file (a modified age-race or MARS file) of the April 1, 1980 resident population by 5-year age group (0-4, 5-9, ..., 85 +), sex, and race (White, Black, other races). As for other years, NCHS live-birth counts were substituted for the estimates of the population under 1 year of age. National and state estimates were obtained by summing the appropriate county estimates.

Population totals by age and sex calculated from this MARS file are essentially the same as those published in the regular Census volumes because the only age adjustment made to the original Census count data was an adjustment for an overcount of centenarians. This age adjustment was not discernible in this MARS file because the excess centenarians were redistributed to the 85 and over population which is the oldest age group on this file.

This special Census file does reflect the substantial race modification of the 1980 census count data. Many persons checked "Other" (race not specified) on the 1980 Census (more than in 1970). Of the 6.8 million persons reporting their race as "other", 5.8 million persons were of Hispanic origin. Persons of Mexican origin and race not specified were reassigned to White. Persons who gave other Hispanic origins and race not specified were transferred either to White or to Black according to the racial distribution of persons within their county of residence who were of the same Hispanic origin. The "Other" races category also included about 900,000 persons not of Hispanic origin. These persons were reassigned to White, Black, or Asian and Pacific Islander based on proportions taken from sample data. The net effect of the race modification was to increase the estimate of the White population by 6.3 million, to increase the estimate of the Black population by 188,000, and to assign 229,000 persons to the Asian/Pacific Islander race group (for this file, Asian/Pacific Islanders are in the the other races group).

Three Virginia independent cities (Manassas, Manassas Park, and Poquoson) did not appear on this 1980 Census file. Estimates of the populations of these three cities did exist for July 1, 1980 and for later years. Therefore, the April 1, 1980 populations of the three cities were calculated as a proportion of the April 1, 1980 county population (Prince William county for Manassas and Manassas Park and York county for Poquoson), where the proportion was calculated from the July 1, 1980 estimates of the city and county populations. The April 1 population estimates for the counties

containing the three cities were reduced by the cities' estimated populations.

**8. July 1, 1981-88 estimates of the national resident population.** These estimates are from a series of intercensal estimates of the July 1 resident population of the U.S. by single year of age (0 to 100+ years), sex, race (White; Black; American Indian, Eskimo, and Aleut; Asian and Pacific Islander), and Hispanic origin (Hispanic, non-Hispanic) for the years 1980- 89 produced by the Bureau of the Census. As for other years, NCHS live-birth data were substituted for the estimate of the population under 1 year of age. The estimates, except for the live-birth counts, were rounded to the nearest 1,000.

Postcensal methodology was employed to produce the intercensal estimates so that trends in births, deaths, and migration would be reflected in the distribution of the population over the decade<sup>7</sup>. The total change in the population for the decade was determined by comparing the 1980 and 1990 censuses. A series of postcensal estimates by age, race, sex, and Hispanic origin was developed based on the April 1, 1980 census and carried out to April 1, 1990. The postcensal estimates for each age-sex-race-Hispanic origin group were obtained by updating the resident population enumerated in the 1980 census with four components of population change: a) adding births to U.S. resident women, b) subtracting deaths to U.S. residents, c) adding net international migration, and d) adding net movement of U.S. Armed Forces and civilian residents of the U.S.

To convert the postcensal estimates for the 80's to intercensal estimates, the discrepancy between the postcensal estimate of the April 1, 1990 population and the census count for April 1, 1990 was distributed across the decade. This was done using the following formula which calculates the intercensal estimate as a function of time and the postcensal estimate<sup>8</sup>:

$$P_t = Q_t(P_{10}/Q_{10})^{t/10},$$

where:

t = time in years that has elapsed since the April 1, 1980 census ( $0 \leq t \leq 10$ ),

$Q_t$  = postcensal estimate at time t

$P_t$  = intercensal estimate at time t

$Q_{10}$  = postcensal estimate for April 1, 1990

$P_{10}$  = the enumerated population from the April 1, 1990 census

Monthly population change data was used to produce July 1 estimates from the April 1 estimates.

**9 July 1, 1981-88 estimates of state resident populations.** These estimates were from a series of intercensal estimates of the July 1 resident population of the 50 states of the United States and the District of Columbia by 5-year age group (0-4, 5-9, ..., 85 and over), sex, modified race (White; Black; American Indian, Eskimo, and Aleut; Asian and Pacific Islander), and Hispanic origin (Hispanic origin, non-Hispanic origin) for the years 1981-89 prepared by the Bureau of the Census. As for other years, NCHS live-birth data were substituted for the estimate of the population under 1 year of age.

These estimates were developed from intercensal county population estimates for the 80's. To do this, the proportion of the population in the 8 race-Hispanic origin groups for each state and the District of Columbia were interpolated. The proportions used as the anchor points for this interpolation were computed from special census files for April 1, 1980 and April 1, 1990. The interpolated proportions were applied to state population totals computed from the series of age-race-sex specific intercensal county estimates (see description below). The resulting population estimates were adjusted to be consistent with 1) state intercensal population estimates by age and sex, and 2) national intercensal estimates by age, sex, and race. Both the intercensal state estimates by age and sex and the intercensal national estimates were calculated by applying the formula above to the corresponding series of postcensal estimates.

**10. July 1, 1981-July 1, 1988 estimates of county resident populations.** The estimates in this series were intercensal estimates of the July 1 resident population of the 3,141 counties in the U.S. (as defined in 1990) by 5-year age group (0-4, 5-9, ..., 85 and over), sex (male, female), and race (White, Black, and other races) for the years 1980-89. As for other years, NCHS live-birth data were substituted for the estimate of the population under 1 year of age.

The estimates in this series were developed by interpolating the proportions of persons in the age-race-sex groups in each county. The proportions used as the anchor points for the interpolation were computed from special census files for April 1, 1980 and April 1, 1990. The interpolated proportions were applied to the intercensal estimates of the total county populations. The intercensal estimates of the total county population were calculated by applying the formula above to the postcensal series of estimates of total county populations. The age-race-sex specific county population estimates obtained were adjusted to be consistent with 1) intercensal population estimates for States by age and sex, and 2) intercensal estimates of the national population by age, sex, and race.

**11. April 1, 1990 estimates of the resident national, state, and county populations.** These estimates are from the MARS (modified age-race) census file by single year of age, sex, race (White; Black; American Indian, Eskimo, Aleut; Asian/Pacific Islander), Hispanic origin (Hispanic, non-Hispanic).

In the 1990 census, persons were asked to report their year of birth but not the quarter (within the year) of birth, and their age at their last birthday under the assumption that they answered the question on April 1. Review of the census age data revealed that many persons reported their age as of either the date they completed the census form or were interviewed by an enumerator, which may have been months after April 1. In addition, there may have been a tendency for respondents to round up their age if they were close to having a birthday. Thus, age was biased upward. It is likely that approximately 10 percent of persons in most age groups were actually 1 year younger than they reported. For most single years of age, the misstatements are largely offsetting. The problem is more pronounced at age 0 because persons lost to this age may not have been fully offset by the inclusion of babies born after April 1, 1990 and because there may have been more rounding up to age 1 to avoid reporting age 0 years. The reporting of age as one year older than the age on April 1, 1990 is likely to have occurred more often in areas where the census data was collected later. Modification of reported age was based, for most respondents, on a respecification of age using reported year of birth and an allocating

respondents to first quarter or last three quarters of the year based on an historical series of births by month. It was not considered necessary to correct for age overstatement and heaping in 1990 because the availability of age and year of birth on the census form had provided for the elimination of spurious year-of-birth reports in the data before the modification was performed. Approximately 100 million persons have an age in the modified file that is one year different than the age they reported on the 1990 census form.

The race modification for the 1990 census was substantial. Some 9.8 million persons did not report their race as one of the 15 race categories included on the census form. Over 95 percent of these persons were of Hispanic origin. Each of the persons with non-specified race was assigned to a specified race according to the following rule: each "other races" person was assigned to the specified race reported by a nearby person with identical response to the Hispanic origin question (not Spanish/Hispanic, Mexican, Puerto Rican, Cuban, and other Spanish/Hispanic). The results of the race modification procedure were overridden in four counties (Adams county, Washington; Harmon county, Oklahoma; Clark county, Indiana; and Washington county, Idaho). In these four counties the American Indian population grew by more than 100 percent and also became at least one percentage point more of the county's total population. In each of these counties, persons with race unspecified were assigned to White.

The race, origin, or sex of some persons also changed as a result of the assignment of a different age to them. The changed age sometimes caused the person to be allocated a different relationship and/or sex which resulted in the person receiving their race or origin from a different person in the household..

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## **APPENDIX D**

### **FIPS State and County Codes and Names**

The FIPS state and county codes were established by the National Bureau of Standards, U.S. Department of Commerce in 1968.<sup>9</sup> This standard set of codes provides names and codes for counties and county equivalents of the 50 states of the United States and the District of Columbia. Counties are considered to be the "first order subdivisions" of each State, regardless of their local designation (county, parish, borough). Washington, D.C.; the consolidated government of Columbus, Georgia; the independent cities of the States of Maryland, Missouri, Nevada, and Virginia; the census areas and boroughs of Alaska; and that part of Yellowstone Park in Montana are identified as county equivalents. The system is standard throughout the Federal Government. The State codes are ascending, two-digit numbers; the county codes are ascending three-digit numbers. For both the State and county codes, space has been left for new States or counties. Some changes in the FIPS codes have occurred since 1968.

A modified version of the FIPS codes is used to identify states and counties on the CMF. The modifications are described in this appendix. The FIPS codes and names are listed in Appendix F. For the years 1968-78, there are 3,080 unique FIPS codes on the CMF. For 1979-88 there are 3,114 unique FIPS codes on the CMF (with one extra code for Georgia in 1988).

The county codes on the mortality and population files are completely compatible. As described earlier, there is one record on the population file per geographic unit per year per race-sex group. There will be corresponding records on the mortality file if deaths occurred for the given geographic unit, year, and age-race-sex group.

#### **Modifications of FIPS State and County Codes**

1. **Alaska counties.** All Alaskan counties are aggregated into one county, called Alaska which was assigned the code 02900.
2. **La Paz, Az.** In January, 1983, La Paz county, Arizona (FIPS code = 04012) was formed from the northern portion of Yuma county (FIPS code = 04027). Yuma county still exists with reduced boundaries. La Paz county does not appear on this file. Death counts and population estimates for La Paz county have been aggregated with those for Yuma county.
3. **Columbus city and Muscogee county, GA.** The independent city Columbus, Georgia does not appear on this file. Death counts and population estimates for Columbus city (FIPS code = 13510) have been aggregated with those for Muscogee county (FIPS code = 13215).
4. **Georgia, unknown county.** In 1988, an additional county code (FIPS code = 13999) was created in Georgia. Deaths occurring in Georgia with an underlying cause of death of HIV infection were assigned this county code if three or fewer such deaths occurred to residents of a given county.



5. **Kalawao, Hawaii.** The Hawaiian county of Kalawao does not appear on this file. Death counts and population estimates for Kalawao, Hawaii (FIPS code = 15005) are aggregated with those for Maui county, Hawaii (FIPS code = 15009)
6. **Baltimore city and Baltimore county, MD.** The independent city of Baltimore, Maryland has been treated as a county. Death counts and population estimates are reported separately for Baltimore city (FIPS code = 24510) and Baltimore county (FIPS code = 24005).
7. **Ste. Genevieve, Mo.** In order to achieve alphabetical consistency, the FIPS code for Ste. Genevieve, Missouri was changed in 1979 from 29193 to 29186. The new code (29186) has been used throughout this file.
8. **St. Louis city and St. Louis county, MO.** The independent city of St. Louis, Missouri has been treated as a county. Death counts and population estimates are reported separately for St. Louis city (FIPS code = 29510) and St. Louis county (FIPS code = 29189).
9. **Carson City, NV.** The independent city of Carson City, Nevada (FIPS code = 32510) has been treated as a county. Death counts and population estimates are reported for Carson city.
10. **Cibola, NM.** In 1981, Cibola county, New Mexico (FIPS code = 35006) was formed when Valencia county, New Mexico (FIPS code = 35061) was divided into two parts. Valencia county still exists with reduced boundaries. Cibola county does not appear on this file. All death counts and population estimates for Cibola county have been aggregated with those for Valencia county.
11. **New York city boroughs.** The five boroughs of New York City have been treated as counties and maintained as separate entities on this file.

<u>Borough</u>	<u>County</u>	<u>FIPS Code</u>
Bronx	Bronx	36005
Brooklyn	Kings	36047
Manhattan	New York	46061
Queens	Queens	36081
Staten Island	Richmond	36085

12. **Jackson and Washabaugh, SD.** In 1979, Washabaugh county, South Dakota (FIPS code = 46131) merged with Jackson county, South Dakota (FIPS code = 46071). For all years, death counts and population estimates for Washabaugh county have been aggregated with those for Jackson county.
13. **Virginia independent cities.**
  - a. **Nansemond city, VA.** Nansemond city (FIPS = 51123) has been part of the independent city of Suffolk, Va (FIPS = 51800) since 1979. For all

years, death counts and population estimates for Nansemond have been aggregated with those for Suffolk city.

b. **1968-78:** For 1968-78, the following Virginia independent cities were treated as counties:

<u>Independent City</u>	<u>City FIPS code</u>
Alexandria	51510
Chesapeake	51550
Hampton	51650
Newport News	51700
Norfolk	51710
Suffolk	51800
Virginia Beach	51810

c. **1968-78:** For 1968-78, death counts and population estimates for the following Virginia independent cities were aggregated with those of the county containing them. A list of these cities and the counties with which they have been aggregated follows:

<u>Independent City</u>	<u>County</u>	<u>City FIPS Code</u>	<u>County FIPS CODE</u>
Bedford	Bedford	51515	51019
Bristol	Washington	51520	51191
Buena Vista	Rockbridge	51530	51163
Charlottesville	Albemarle	51540	51003
Clifton Forge	Alleghany	51560	51005
Colonial Heights	Chesterfield	51570	51041
Covington	Alleghany	51580	51005
Danville	Pittsylvania	515905	51143
Emporia	Greensville	51595	51081
Fairfax	Fairfax	51600	51059
Falls Church	Fairfax	51610	51059
Franklin	Southampton	51620	51175
Fredericksburg	Spotsylvania	51630	51177
Galax	Grayson	51640	51077
Harrisonburg	Rockingham	51660	51165
Hopewell	Prince George	51670	51149
Lexington	Rockbridge	51678	51163
Lynchburg	Campbell	51680	51031
Manassas	Prince William	51683	51153
Manassas Park	Prince William	51685	51153
Martinsville	Henry	51690	51089
Norton	Wise	51720	51195
Petersburg	Dinwiddie	51730	51053
Poquoson	York	51735	51199
Portsmouth	Norfolk city	51740	51710

Radford	Montgomery	51750	51121
Richmond	Henrico	51760	51087
Roanoke	Roanoke	51770	51161
Salem	Roanoke	51775	51161
South Boston	Halifax	51780	51083
Staunton	Augusta	51790	51015
Waynesboro	Augusta	51820	51015
Williamsburg	James City	51830	51095
Winchester	Frederick	51840	51069

d. **1979-88.** Beginning in 1979, the Virginia independent cities were treated as counties and retained as separate entities on the file. Thus, the cities listed above in b) and c) appear on the file with FIPS code as shown in the columns titled "city FIPS codes".

14. **Yellowstone National Park, Wy.** For 1968 and 1969, the FIPS coding system assigned two codes to Yellowstone National Park, one for the Montana section (FIPS code = 30113) and one for the Wyoming section (FIPS code = 56047). From 1970 on, only the code for the Montana section was retained in FIPS. For this file, any deaths or live birth counts attributed to the Wyoming section during 1968 or 1969 have been split and assigned to Park county, Wyoming (56029 and Teton county, Wyoming (56039) in proportional to the populations of these two counties..

## APPENDIX E

### Dictionary of FIPS State and County Codes and County Names

FIPS ST CNTY	STATE ABBRV	COUNTY NAME	FIPS ST CNTY	STATE ABBRV	COUNTY NAME
<b>ALABAMA</b>			01 087	AL	MACON
01 001	AL	AUTAUGA	01 089	AL	MADISON
01 003	AL	BALDWIN	01 091	AL	MARENGO
01 005	AL	BARBOUR	01 093	AL	MARION
01 007	AL	BIBB	01 095	AL	MARSHALL
01 009	AL	BLOUNT	01 097	AL	MOBILE
01 011	AL	BULLOCK	01 099	AL	MONROE
01 013	AL	BUTLER	01 101	AL	MONTGOMERY
01 015	AL	CALHOUN	01 103	AL	MORGAN
01 017	AL	CHAMBERS	01 105	AL	PERRY
01 019	AL	CHEROKEE	01 107	AL	PICKENS
01 021	AL	CHILTON	01 109	AL	PIKE
01 023	AL	CHOCTAW	01 111	AL	RANDOLPH
01 025	AL	CLARKE	01 113	AL	RUSSELL
01 027	AL	CLAY	01 115	AL	ST. CLAIR
01 029	AL	CLEBURNE	01 117	AL	SHELBY
01 031	AL	COFFEE	01 119	AL	SUMTER
01 033	AL	COLBERT	01 121	AL	TALLADEGA
01 035	AL	CONECUH	01 123	AL	TALLAPOOSA
01 037	AL	COOSA	01 125	AL	TUSCALCOSA
01 039	AL	COVINGTON	01 127	AL	WALKER
01 041	AL	CRENSHAW	01 129	AL	WASHINGTON
01 043	AL	CULLMAN	01 131	AL	WILCOX
01 045	AL	DALE	01 133	AL	WINSTON
01 047	AL	DALLAS	<b>ALASKA</b>		
01 049	AL	DE KALB	02 900	AK	ALASKA
01 051	AL	ELMORE	<b>ARIZONA</b>		
01 053	AL	ESCAMBIA	04 001	AZ	APACHE
01 055	AL	ETOWAH	04 003	AZ	COCHISE
01 057	AL	FAYETTE	04 005	AZ	COCONINO
01 059	AL	FRANKLIN	04 007	AZ	GILA
01 061	AL	GENEVA	04 009	AZ	GRAHAM
01 063	AL	GREENE	04 011	AZ	GREENLEE
01 065	AL	HALE	04 013	AZ	MARICOPA
01 067	AL	HENRY	04 015	AZ	MOHAVE
01 069	AL	HOUSTON	04 017	AZ	NAVAJO
01 071	AL	JACKSON	04 019	AZ	PIMA
01 073	AL	JEFFERSON	04 021	AZ	PINAL
01 075	AL	LAMAR	04 023	AZ	SANTA CRUZ
01 077	AL	LAUDERDALE	04 025	AZ	YAVAPAI
01 079	AL	LAWRENCE	04 027	AZ	YUMA
01 081	AL	LEE			
01 083	AL	LIMESTONE			
01 085	AL	LOWNDES			

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
<b>ARKANSAS</b>		
05 001	AR	ARKANSAS
05 003	AR	ASHLEY
05 005	AR	BAXTER
05 007	AR	BENTON
05 009	AR	BOONE
05 011	AR	BRADLEY
05 013	AR	CALHOUN
05 015	AR	CARROLL
05 017	AR	CHICOT
05 019	AR	CLARK
05 021	AR	CLAY
05 023	AR	CLEBURNE
05 025	AR	CLEVELAND
05 027	AR	COLUMBIA
05 029	AR	CONWAY
05 031	AR	CRAIGHEAD
05 033	AR	CRAWFORD
05 035	AR	CRITTENDEN
05 037	AR	CROSS
05 039	AR	DALLAS
05 041	AR	DESHA
05 043	AR	DREW
05 045	AR	FAULKNER
05 047	AR	FRANKLIN
05 049	AR	FULTON
05 051	AR	GARLAND
05 053	AR	GRANT
05 055	AR	GREENE
05 057	AR	HEMPSTEAD
05 059	AR	HOT SPRING
05 061	AR	HOWARD
05 063	AR	INDEPENDENCE
05 065	AR	IZARD
05 067	AR	JACKSON
05 069	AR	JEFFERSON
05 071	AR	JOHNSON
05 073	AR	LAFAYETTE
05 075	AR	LAWRENCE
05 077	AR	LEE
05 079	AR	LINCOLN
05 081	AR	LITTLE RIVER
05 083	AR	LOGAN
05 085	AR	LONOKE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
05 087	AR	MADISON
05 089	AR	MARION
05 091	AR	MILLER
05 093	AR	MISSISSIPPI
05 095	AR	MONROE
05 097	AR	MONTGOMERY
05 099	AR	NEVADA
05 101	AR	NEWTON
05 103	AR	OUACHITA
05 105	AR	PERRY
05 107	AR	PHILLIPS
05 109	AR	PIKE
05 111	AR	POINSETT
05 113	AR	POLK
05 115	AR	POPE
05 117	AR	PRAIRIE
05 119	AR	PULASKI
05 121	AR	RANDOLPH
05 123	AR	ST. FRANCIS
05 125	AR	SALINE
05 127	AR	SCOTT
05 129	AR	SEARCY
05 131	AR	SEBASTIAN
05 133	AR	SEVIER
05 135	AR	SHARP
05 137	AR	STONE
05 139	AR	UNION
05 141	AR	VAN BUREN
05 143	AR	WASHINGTON
05 145	AR	WHITE
05 147	AR	WOODRUFF
05 149	AR	YELL

**CALIFORNIA**

06 001	CA	ALAMEDA
06 003	CA	ALPINE
06 005	CA	AMADOR
06 007	CA	BUTTE
06 009	CA	CALAVERAS
06 011	CA	COLUSA
06 013	CA	CONTRA COSTA
06 015	CA	DEL NORTE
06 017	CA	EL DORADO
06 019	CA	FRESNO

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
06 021	CA	GLENN
06 023	CA	HUMBOLDT
06 025	CA	IMPERIAL
06 027	CA	INYO
06 029	CA	KERN
06 031	CA	KINGS
06 033	CA	LAKE
06 035	CA	LASSEN
06 037	CA	LOS ANGELES
06 039	CA	MADERA
06 041	CA	MARIN
06 043	CA	MARIPOSA
06 045	CA	MENDOCINO
06 047	CA	MERCED
06 049	CA	MODOC
06 051	CA	MONO
06 053	CA	MONTEREY
06 055	CA	NAPA
06 057	CA	NEVADA
06 059	CA	ORANGE
06 061	CA	PLACER
06 063	CA	PLUMAS
06 065	CA	RIVERSIDE
06 067	CA	SACRAMENTO
06 069	CA	SAN BENITO
06 071	CA	SAN BERNARDINO
06 073	CA	SAN DIEGO
06 075	CA	SAN FRANCISCO
06 077	CA	SAN JOAQUIN
06 079	CA	SAN LUIS OBISPO
06 081	CA	SAN MATEO
06 083	CA	SANTA BARBARA
06 085	CA	SANTA CLARA
06 087	CA	SANTA CRUZ
06 089	CA	SHASTA
06 091	CA	SIERRA
06 093	CA	SISKIYOU
06 095	CA	SOLANO
06 097	CA	SONOMA
06 099	CA	STANISLAUS
06 101	CA	SUTTER
06 103	CA	TEHAMA
06 105	CA	TRINITY
06 107	CA	TULARE
06 109	CA	TUOLUMNE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
06 111	CA	VENTURA
06 113	CA	YOLO
06 115	CA	YUBA

# **COLORADO**

08 001	CO	ADAMS
08 003	CO	ALAMOSA
08 005	CO	ARAPAHOE
08 007	CO	ARCHULETA
08 009	CO	BACA
08 011	CO	BENT
08 013	CO	BOULDER
08 015	CO	CHAFFEE
08 017	CO	CHEYENNE
08 019	CO	CLEAR CREEK
08 021	CO	CONEJOS
08 023	CO	COSTILLA
08 025	CO	CROWLEY
08 027	CO	CUSTER
08 029	CO	DELTA
08 031	CO	DENVER
08 033	CO	DOLORES
08 035	CO	DOUGLAS
08 037	CO	EAGLE
08 039	CO	ELBERT
08 041	CO	EL PASO
08 043	CO	FREMONT
08 045	CO	GARFIELD
08 047	CO	GILPIN
08 049	CO	GRAND
08 051	CO	GUNNISON
08 053	CO	HINSDALE
08 055	CO	HUERFANO
08 057	CO	JACKSON
08 059	CO	JEFFERSON
08 061	CO	KIOWA
08 063	CO	KIT CARSON
08 065	CO	LAKE
08 067	CO	LA PLATA
08 069	CO	LARIMER
08 071	CO	LAS ANIMAS
08 073	CO	LINCOLN
08 075	CO	LOGAN
08 077	CO	MESA

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
08 079	CO	MINERAL
08 081	CO	MOFFAT
08 083	CO	MONTEZUMA
08 085	CO	MONTROSE
08 087	CO	MORGAN
08 089	CO	OTERO
08 091	CO	OURAY
08 093	CO	PARK
08 095	CO	PHILLIPS
08 097	CO	PITKIN
08 099	CO	PROWERS
08 101	CO	PUEBLO
08 103	CO	RIO BLANCO
08 105	CO	RIO GRANDE
08 107	CO	ROUTT
08 109	CO	SAGUACHE
08 111	CO	SAN JUAN
08 113	CO	SAN MIGUEL
08 115	CO	SEDGWICK
08 117	CO	SUMMIT
08 119	CO	TELLER
08 121	CO	WASHINGTON
08 123	CO	WELD
08 125	CO	YUMA

#### CONNECTICUT

09 001	CT	FAIRFIELD
09 003	CT	HARTFORD
09 005	CT	LITCHFIELD
09 007	CT	MIDDLESEX
09 009	CT	NEW HAVEN
09 011	CT	NEW LONDON
09 013	CT	TOLLAND
09 015	CT	WINDHAM

#### DELAWARE

10 001	DE	KENT
10 003	DE	NEW CASTLE
10 005	DE	SUSSEX

#### DISTRICT OF COLUMBIA

11 001	DC	WASHINGTON
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FIPS ST CNTY	STATE ABBRV	COUNTY NAME
<b>FLORIDA</b>		
12 001	FL	ALACHUA
12 003	FL	BAKER
12 005	FL	BAY
12 007	FL	BRADFORD
12 009	FL	BREVARD
12 011	FL	BROWARD
12 013	FL	CALHOUN
12 015	FL	CHARLOTTE
12 017	FL	CITRUS
12 019	FL	CLAY
12 021	FL	COLLIER
12 023	FL	COLUMBIA
12 025	FL	DADE
12 027	FL	DE SOTO
12 029	FL	DIXIE
12 031	FL	DUVAL
12 033	FL	ESCAMBIA
12 035	FL	FLAGLER
12 037	FL	FRANKLIN
12 039	FL	GADSDEN
12 041	FL	GILCHRIST
12 043	FL	GLADES
12 045	FL	GULF
12 047	FL	HAMILTON
12 049	FL	HARDEE
12 051	FL	HENDRY
12 053	FL	HERNANDO
12 055	FL	HIGHLANDS
12 057	FL	HILLSBOROUGH
12 059	FL	HOLMES
12 061	FL	INDIAN RIVER
12 063	FL	JACKSON
12 065	FL	JEFFERSON
12 067	FL	LAFAYETTE
12 069	FL	LAKE
12 071	FL	LEE
12 073	FL	LEON
12 075	FL	LEVY
12 077	FL	LIBERTY
12 079	FL	MADISON
12 081	FL	MANATEE
12 083	FL	MARION
12 085	FL	MARTIN

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
12 087	FL	MONROE
12 089	FL	NASSAU
12 091	FL	OKALOOSA
12 093	FL	OKEECHOBEE
12 095	FL	ORANGE
12 097	FL	OSCEOLA
12 099	FL	PALM BEACH
12 101	FL	PASCO
12 103	FL	PINELLAS
12 105	FL	POLK
12 107	FL	PUTNAM
12 109	FL	ST. JOHNS
12 111	FL	ST. LUCIE
12 113	FL	SANTA ROSA
12 115	FL	SARASOTA
12 117	FL	SEMINOLE
12 119	FL	SUMTER
12 121	FL	SUWANNEE
12 123	FL	TAYLOR
12 125	FL	UNION
12 127	FL	VOLUSIA
12 129	FL	WAKULLA
12 131	FL	WALTON
12 133	FL	WASHINGTON

# **GEORGIA**

13 001	GA	APPLING
13 003	GA	ATKINSON
13 005	GA	BACON
13 007	GA	BAKER
13 009	GA	BALDWIN
13 011	GA	BANKS
13 013	GA	BARROW
13 015	GA	BARTOW
13 017	GA	BEN HILL
13 019	GA	BERRIEN
13 021	GA	BIBB
13 023	GA	BLECKLEY
13 025	GA	BRANTLEY
13 027	GA	BROOKS
13 029	GA	BRYAN
13 031	GA	BULLOCH
13 033	GA	BURKE
13 035	GA	BUTTS

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
13 037	GA	CALHOUN
13 039	GA	CAMDEN
13 043	GA	CANDLER
13 045	GA	CARROLL
13 047	GA	CATOOSA
13 049	GA	CHARLTON
13 051	GA	CHATHAM
13 053	GA	CHATTAHOOCHEE
13 055	GA	CHATTOOGA
13 057	GA	CHEROKEE
13 059	GA	CLARKE
13 061	GA	CLAY
13 063	GA	CLAYTON
13 065	GA	CLINCH
13 067	GA	COBB
13 069	GA	COFFEE
13 071	GA	COLQUITT
13 073	GA	COLUMBIA
13 075	GA	COOK
13 077	GA	COWETA
13 079	GA	CRAWFORD
13 081	GA	CRISP
13 083	GA	DADE
13 085	GA	DAWSON
13 087	GA	DECATUR
13 089	GA	DE KALB
13 091	GA	DODGE
13 093	GA	DOOLY
13 095	GA	DOUGHERTY
13 097	GA	DOUGLAS
13 099	GA	EARLY
13 101	GA	ECHOLS
13 103	GA	EFFINGHAM
13 105	GA	ELBERT
13 107	GA	EMANUEL
13 109	GA	EVANS
13 111	GA	FANNIN
13 113	GA	FAYETTE
13 115	GA	FLOYD
13 117	GA	FORSYTH
13 119	GA	FRANKLIN
13 121	GA	FULTON
13 123	GA	GILMER
13 125	GA	GLASCOCK
13 127	GA	GLYNN



FIPS ST CNTY	STATE ABBRV	COUNTY NAME
13 129	GA	GORDON
13 131	GA	GRADY
13 133	GA	GREENE
13 135	GA	GWINNETT
13 137	GA	HABERSHAM
13 139	GA	HALL
13 141	GA	HANCOCK
13 143	GA	HARALSON
13 145	GA	HARRIS
13 147	GA	HART
13 149	GA	HEARD
13 151	GA	HENRY
13 153	GA	HOUSTON
13 155	GA	IRWIN
13 157	GA	JACKSON
13 159	GA	JASPER
13 161	GA	JEFF DAVIS
13 163	GA	JEFFERSON
13 165	GA	JENKINS
13 167	GA	JOHNSON
13 169	GA	JONES
13 171	GA	LAMAR
13 173	GA	LANIER
13 175	GA	LAURENS
13 177	GA	LEE
13 179	GA	LIBERTY
13 181	GA	LINCOLN
13 183	GA	LONG
13 185	GA	LOWNDES
13 187	GA	LUMPKIN
13 189	GA	MCDUFFIE
13 191	GA	MCINTOSH
13 193	GA	MACON
13 195	GA	MADISON
13 197	GA	MARION
13 199	GA	MERIWETHER
13 201	GA	MILLER
13 205	GA	MITCHELL
13 207	GA	MONROE
13 209	GA	MONTGOMERY
13 211	GA	MORGAN
13 213	GA	MURRAY
13 215	GA	MUSCOGEE
13 217	GA	NEWTON
13 219	GA	OCONEE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
13 221	GA	OGLETHORPE
13 223	GA	PAULDING
13 225	GA	PEACH
13 227	GA	PICKENS
13 229	GA	PIERCE
13 231	GA	PIKE
13 233	GA	POLK
13 235	GA	PULASKI
13 237	GA	PUTNAM
13 239	GA	QUITMAN
13 241	GA	RABUN
13 243	GA	RANDOLPH
13 245	GA	RICHMOND
13 247	GA	ROCKDALE
13 249	GA	SCHLEY
13 251	GA	SCREVEN
13 253	GA	SEMINOLE
13 255	GA	SPALDING
13 257	GA	STEPHENS
13 259	GA	STEWART
13 261	GA	SUMTER
13 263	GA	TALBOT
13 265	GA	TALIAFERRO
13 267	GA	TATTNALL
13 269	GA	TAYLOR
13 271	GA	TELFAIR
13 273	GA	TERRELL
13 275	GA	THOMAS
13 277	GA	TIFT
13 279	GA	TOOMBS
13 281	GA	TOWNS
13 283	GA	TREUTLEN
13 285	GA	TROUP
13 287	GA	TURNER
13 289	GA	TWIGGS
13 291	GA	UNION
13 293	GA	UPSON
13 295	GA	WALKER
13 297	GA	WALTON
13 299	GA	WARE
13 301	GA	WARREN
13 303	GA	WASHINGTON
13 305	GA	WAYNE
13 307	GA	WEBSTER
13 309	GA	WHEELER

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
13 311	GA	WHITE
13 313	GA	WHITFIELD
13 315	GA	WILCOX
13 317	GA	WILKES
13 319	GA	WILKINSON
13 321	GA	WORTH
13 999	GA	UNKNOWN

#### **HAWAII**

15 001	HI	HAWAII
15 003	HI	HONOLULU
15 007	HI	KAUAI
15 009	HI	MAUI

#### **IDAHO**

16 001	ID	ADA
16 003	ID	ADAMS
16 005	ID	BANNOCK
16 007	ID	BEAR LAKE
16 009	ID	BENEWAH
16 011	ID	BINGHAM
16 013	ID	BLAINE
16 015	ID	BOISE
16 017	ID	BONNER
16 019	ID	BONNEVILLE
16 021	ID	BOUNDARY
16 023	ID	BUTTE
16 025	ID	CAMAS
16 027	ID	CANYON
16 029	ID	CARIBOU
16 031	ID	CASSIA
16 033	ID	CLARK
16 035	ID	CLEARWATER
16 037	ID	CUSTER
16 039	ID	ELMORE
16 041	ID	FRANKLIN
16 043	ID	FREMONT
16 045	ID	GEM
16 047	ID	GOODING
16 049	ID	IDAHO
16 051	ID	JEFFERSON
16 053	ID	JEROME
16 055	ID	KOOTENAI

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
16 057	ID	LATAH
16 059	ID	LEMHI
16 061	ID	LEWIS
16 063	ID	LINCOLN
16 065	ID	MADISON
16 067	ID	MINIDOKA
16 069	ID	NEZ PERCE
16 071	ID	ONEIDA
16 073	ID	OWYHEE
16 075	ID	PAYETTE
16 077	ID	POWER
16 079	ID	SHOSHONE
16 081	ID	TETON
16 083	ID	TWIN FALLS
16 085	ID	VALLEY
16 087	ID	WASHINGTON

#### **ILLINOIS**

17 001	IL	ADAMS
17 003	IL	ALEXANDER
17 005	IL	BOND
17 007	IL	BOONE
17 009	IL	BROWN
17 011	IL	BUREAU
17 013	IL	CALHOUN
17 015	IL	CARROLL
17 017	IL	CASS
17 019	IL	CHAMPAIGN
17 021	IL	CHRISTIAN
17 023	IL	CLARK
17 025	IL	CLAY
17 027	IL	CLINTON
17 029	IL	COLES
17 031	IL	COOK
17 033	IL	CRAWFORD
17 035	IL	CUMBERLAND
17 037	IL	DE KALB
17 039	IL	DE WITT
17 041	IL	DOUGLAS
17 043	IL	DU PAGE
17 045	IL	EDGAR
17 047	IL	EDWARDS
17 049	IL	EFFINGHAM
17 051	IL	FAYETTE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
17 053	IL	FORD
17 055	IL	FRANKLIN
17 057	IL	FULTON
17 059	IL	GALLATIN
17 061	IL	GREENE
17 063	IL	GRUNDY
17 065	IL	HAMILTON
17 067	IL	HANCOCK
17 069	IL	HARDIN
17 071	IL	HENDERSON
17 073	IL	HENRY
17 075	IL	IROQUOIS
17 077	IL	JACKSON
17 079	IL	JASPER
17 081	IL	JEFFERSON
17 083	IL	JERSEY
17 085	IL	JO DAVIESS
17 087	IL	JOHNSON
17 089	IL	KANE
17 091	IL	KANKAKEE
17 093	IL	KENDALL
17 095	IL	KNOX
17 097	IL	LAKE
17 099	IL	LA SALLE
17 101	IL	LAWRENCE
17 103	IL	LEE
17 105	IL	LIVINGSTON
17 107	IL	LOGAN
17 109	IL	MCDONOUGH
17 111	IL	MCHENRY
17 113	IL	MCLEAN
17 115	IL	MACON
17 117	IL	MACOUPIN
17 119	IL	MADISON
17 121	IL	MARION
17 123	IL	MARSHALL
17 125	IL	MASON
17 127	IL	MASSAC
17 129	IL	MENARD
17 131	IL	MERCER
17 133	IL	MONROE
17 135	IL	MONTGOMERY
17 137	IL	MORGAN
17 139	IL	MOULTRIE
17 141	IL	OGLE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
17 143	IL	PEORIA
17 145	IL	PERRY
17 147	IL	PIATT
17 149	IL	PIKE
17 151	IL	POPE
17 153	IL	PULASKI
17 155	IL	PUTNAM
17 157	IL	RANDOLPH
17 159	IL	RICHLAND
17 161	IL	ROCK ISLAND
17 163	IL	ST. CLAIR
17 165	IL	SALINE
17 167	IL	SANGAMON
17 169	IL	SCHUYLER
17 171	IL	SCOTT
17 173	IL	SHELBY
17 175	IL	STARK
17 177	IL	STEPHENSON
17 179	IL	TAZEWELL
17 181	IL	UNION
17 183	IL	VERMILION
17 185	IL	WABASH
17 187	IL	WARREN
17 189	IL	WASHINGTON
17 191	IL	WAYNE
17 193	IL	WHITE
17 195	IL	WHITESIDE
17 197	IL	WILL
17 199	IL	WILLIAMSON
17 201	IL	WINNEBAGO
17 203	IL	WOODFORD

# INDIANA

18 001	IN	ADAMS
18 003	IN	ALLEN
18 005	IN	BARTHOLOMEW
18 007	IN	BENTON
18 009	IN	BLACKFORD
18 011	IN	BOONE
18 013	IN	BROWN
18 015	IN	CARROLL
18 017	IN	CASS
18 019	IN	CLARK
18 021	IN	CLAY

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
18 023	IN	CLINTON
18 025	IN	CRAWFORD
18 027	IN	DAVIESS
18 029	IN	DEARBORN
18 031	IN	DECATUR
18 033	IN	DE KALB
18 035	IN	DELAWARE
18 037	IN	DUBOIS
18 039	IN	ELKHART
18 041	IN	FAYETTE
18 043	IN	FLOYD
18 045	IN	FOUNTAIN
18 047	IN	FRANKLIN
18 049	IN	FULTON
18 051	IN	GIBSON
18 053	IN	GRANT
18 055	IN	GREENE
18 057	IN	HAMILTON
18 059	IN	HANCOCK
18 061	IN	HARRISON
18 063	IN	HENDRICKS
18 065	IN	HENRY
18 067	IN	HOWARD
18 069	IN	HUNTINGTON
18 071	IN	JACKSON
18 073	IN	JASPER
18 075	IN	JAY
18 077	IN	JEFFERSON
18 079	IN	JENNINGS
18 081	IN	JOHNSON
18 083	IN	KNOX
18 085	IN	KOSCIUSKO
18 087	IN	LAGRANGE
18 089	IN	LAKE
18 091	IN	LA PORTE
18 093	IN	LAWRENCE
18 095	IN	MADISON
18 097	IN	MARION
18 099	IN	MARSHALL
18 101	IN	MARTIN
18 103	IN	MIAMI
18 105	IN	MONROE
18 107	IN	MONTGOMERY
18 109	IN	MORGAN
18 111	IN	NEWTON

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
18 113	IN	NOBLE
18 115	IN	OHIO
18 117	IN	ORANGE
18 119	IN	OWEN
18 121	IN	PARKE
18 123	IN	PERRY
18 125	IN	PIKE
18 127	IN	PORTER
18 129	IN	POSEY
18 131	IN	PULASKI
18 133	IN	PUTNAM
18 135	IN	RANDOLPH
18 137	IN	RIPLAND
18 139	IN	RUSH
18 141	IN	ST. JOSEPH
18 143	IN	SCOTT
18 145	IN	SHELBY
18 147	IN	SPENCER
18 149	IN	STARKE
18 151	IN	STEUBEN
18 153	IN	SULLIVAN
18 155	IN	SWITZERLAND
18 157	IN	TIPPECANOE
18 159	IN	TIPTON
18 161	IN	UNION
18 163	IN	VANDEBURGH
18 165	IN	VERMILLION
18 167	IN	VIGO
18 169	IN	WABASH
18 171	IN	WARREN
18 173	IN	WARRICK
18 175	IN	WASHINGTON
18 177	IN	WAYNE
18 179	IN	WELLS
18 181	IN	WHITE
18 183	IN	WHITLEY

# IOWA

19 001	IA	ADAIR
19 003	IA	ADAMS
19 005	IA	ALLAMAKEE
19 007	IA	APPANOOSE
19 009	IA	AUDUBON
19 011	IA	BENTON

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
19 013	IA	BLACK HAWK
19 015	IA	BOONE
19 017	IA	BREMER
19 019	IA	BUCHANAN
19 021	IA	BUENA VISTA
19 023	IA	BUTLER
19 025	IA	CALHOUN
19 027	IA	CARROLL
19 029	IA	CASS
19 031	IA	CEDAR
19 033	IA	CERRO GORDO
19 035	IA	CHEROKEE
19 037	IA	CHICKASAW
19 039	IA	CLARKE
19 041	IA	CLAY
19 043	IA	CLAYTON
19 045	IA	CLINTON
19 047	IA	CRAWFORD
19 049	IA	DALLAS
19 051	IA	DAVIS
19 053	IA	DECATUR
19 055	IA	DELAWARE
19 057	IA	DES MOINES
19 059	IA	DICKINSON
19 061	IA	DUBUQUE
19 063	IA	EMMET
19 065	IA	FAYETTE
19 067	IA	FLOYD
19 069	IA	FRANKLIN
19 071	IA	FREMONT
19 073	IA	GREENE
19 075	IA	GRUNDY
19 077	IA	GUTHRIE
19 079	IA	HAMILTON
19 081	IA	HANCOCK
19 083	IA	HARDIN
19 085	IA	HARRISON
19 087	IA	HENRY
19 089	IA	HOWARD
19 091	IA	HUMBOLDT
19 093	IA	IDA
19 095	IA	IOWA
19 097	IA	JACKSON
19 099	IA	JASPER
19 101	IA	JEFFERSON

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
19 103	IA	JOHNSON
19 105	IA	JONES
19 107	IA	KEOKUK
19 109	IA	KOSSUTH
19 111	IA	LEE
19 113	IA	LINN
19 115	IA	LOUISA
19 117	IA	LUCAS
19 119	IA	LYON
19 121	IA	MADISON
19 123	IA	MAHASKA
19 125	IA	MARION
19 127	IA	MARSHALL
19 129	IA	MILLS
19 131	IA	MITCHELL
19 133	IA	MONONA
19 135	IA	MONROE
19 137	IA	MONTGOMERY
19 139	IA	MUSCATINE
19 141	IA	O'BRIEN
19 143	IA	OSCEOLA
19 145	IA	PAGE
19 147	IA	PALO ALTO
19 149	IA	PLYMOUTH
19 151	IA	POCAHONTAS
19 153	IA	POLK
19 155	IA	POTTAWATTAMIE
19 157	IA	POWESHIEK
19 159	IA	RINGGOLD
19 161	IA	SAC
19 163	IA	SCOTT
19 165	IA	SHELBY
19 167	IA	SIOUX
19 169	IA	STORY
19 171	IA	TAMA
19 173	IA	TAYLOR
19 175	IA	UNION
19 177	IA	VAN BUREN
19 179	IA	WAPELLO
19 181	IA	WARREN
19 183	IA	WASHINGTON
19 185	IA	WAYNE
19 187	IA	WEBSTER
19 189	IA	WINNEBAGO
19 191	IA	WINNESHIEK

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
19 193	IA	WOODBURY
19 195	IA	WORTH
19 197	IA	WRIGHT

# **KANSAS**

20 001	KS	ALLEN
20 003	KS	ANDERSON
20 005	KS	ATCHISON
20 007	KS	BARBER
20 009	KS	BARTON
20 011	KS	BOURBON
20 013	KS	BROWN
20 015	KS	BUTLER
20 017	KS	CHASE
20 019	KS	CHAUTAUQUA
20 021	KS	CHEROKEE
20 023	KS	CHEYENNE
20 025	KS	CLARK
20 027	KS	CLAY
20 029	KS	CLOUD
20 031	KS	COFFEY
20 033	KS	COMANCHE
20 035	KS	COWLEY
20 037	KS	CRAWFORD
20 039	KS	DECATUR
20 041	KS	DICKINSON
20 043	KS	DONIPHAN
20 045	KS	DOUGLAS
20 047	KS	EDWARDS
20 049	KS	ELK
20 051	KS	ELLIS
20 053	KS	ELLSWORTH
20 055	KS	FINNEY
20 057	KS	FORD
20 059	KS	FRANKLIN
20 061	KS	GEARY
20 063	KS	GOVE
20 065	KS	GRAHAM
20 067	KS	GRANT
20 069	KS	GRAY
20 071	KS	GREELEY
20 073	KS	GREENWOOD
20 075	KS	HAMILTON
20 077	KS	HARPER

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
20 079	KS	HARVEY
20 081	KS	HASKELL
20 083	KS	HODGEMAN
20 085	KS	JACKSON
20 087	KS	JEFFERSON
20 089	KS	JEWELL
20 091	KS	JOHNSON
20 093	KS	KEARNY
20 095	KS	KINGMAN
20 097	KS	KIOWA
20 099	KS	LABETTE
20 101	KS	LANE
20 103	KS	LEAVENWORTH
20 105	KS	LINCOLN
20 107	KS	LINN
20 109	KS	LOGAN
20 111	KS	LYON
20 113	KS	MCPHERSON
20 115	KS	MARION
20 117	KS	MARSHALL
20 119	KS	MEADE
20 121	KS	MIAMI
20 123	KS	MITCHELL
20 125	KS	MONTGOMERY
20 127	KS	MORRIS
20 129	KS	MORTON
20 131	KS	NEMAHA
20 133	KS	NEOSHO
20 135	KS	NESS
20 137	KS	NORTON
20 139	KS	OSAGE
20 141	KS	OSBORNE
20 143	KS	OTTAWA
20 145	KS	PAWNEE
20 147	KS	PHILLIPS
20 149	KS	POTTAWATOMIE
20 151	KS	PRATT
20 153	KS	RAWLINS
20 155	KS	RENO
20 157	KS	REPUBLIC
20 159	KS	RICE
20 161	KS	RILEY
20 163	KS	ROOKS
20 165	KS	RUSH
20 167	KS	RUSSELL

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
20 169	KS	SALINE
20 171	KS	SCOTT
20 173	KS	SEDGWICK
20 175	KS	SEWARD
20 177	KS	SHAWNEE
20 179	KS	SHERIDAN
20 181	KS	SHERMAN
20 183	KS	SMITH
20 185	KS	STAFFORD
20 187	KS	STANTON
20 189	KS	STEVENS
20 191	KS	SUMNER
20 193	KS	THOMAS
20 195	KS	TREGO
20 197	KS	WABAUNSEE
20 199	KS	WALLACE
20 201	KS	WASHINGTON
20 203	KS	WICHITA
20 205	KS	WILSON
20 207	KS	WOODSON
20 209	KS	WYANDOTTE

# **KENTUCKY**

21 001	KY	ADAIR
21 003	KY	ALLEN
21 005	KY	ANDERSON
21 007	KY	BALLARD
21 009	KY	BARREN
21 011	KY	BATH
21 013	KY	BELL
21 015	KY	BOONE
21 017	KY	BOURBON
21 019	KY	BOYD
21 021	KY	BOYLE
21 023	KY	BRACKEN
21 025	KY	BREATHITT
21 027	KY	BRECKINRIDGE
21 029	KY	BULLITT
21 031	KY	BUTLER
21 033	KY	CALDWELL
21 035	KY	CALLOWAY
21 037	KY	CAMPBELL
21 039	KY	CARLISLE
21 041	KY	CARROLL

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
21 043	KY	CARTER
21 045	KY	CASEY
21 047	KY	CHRISTIAN
21 049	KY	CLARK
21 051	KY	CLAY
21 053	KY	CLINTON
21 055	KY	CRITTENDEN
21 057	KY	CUMBERLAND
21 059	KY	DAVIESS
21 061	KY	EDMONSON
21 063	KY	ELLIOTT
21 065	KY	ESTILL
21 067	KY	FAYETTE
21 069	KY	FLEMING
21 071	KY	FLOYD
21 073	KY	FRANKLIN
21 075	KY	FULTON
21 077	KY	GALLATIN
21 079	KY	GARRARD
21 081	KY	GRANT
21 083	KY	GRAVES
21 085	KY	GRAYSON
21 087	KY	GREEN
21 089	KY	GREENUP
21 091	KY	HANCOCK
21 093	KY	HARDIN
21 095	KY	HARLAN
21 097	KY	HARRISON
21 099	KY	HART
21 101	KY	HENDERSON
21 103	KY	HENRY
21 105	KY	HICKMAN
21 107	KY	HOPKINS
21 109	KY	JACKSON
21 111	KY	JEFFERSON
21 113	KY	JESSAMINE
21 115	KY	JOHNSON
21 117	KY	KENTON
21 119	KY	KNOTT
21 121	KY	KNOX
21 123	KY	LARUE
21 125	KY	LAUREL
21 127	KY	LAWRENCE
21 129	KY	LEE
21 131	KY	LESLIE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
21 133	KY	LETCHER
21 135	KY	LEWIS
21 137	KY	LINCOLN
21 139	KY	LIVINGSTON
21 141	KY	LOGAN
21 143	KY	LYON
21 145	KY	MCCRACKEN
21 147	KY	MCCREARY
21 149	KY	MCLEAN
21 151	KY	MADISON
21 153	KY	MAGOFFIN
21 155	KY	MARION
21 157	KY	MARSHALL
21 159	KY	MARTIN
21 161	KY	MASON
21 163	KY	MEADE
21 165	KY	MENIFEE
21 167	KY	MERCER
21 169	KY	METCALFE
21 171	KY	MONROE
21 173	KY	MONTGOMERY
21 175	KY	MORGAN
21 177	KY	MUHLENBERG
21 179	KY	NELSON
21 181	KY	NICHOLAS
21 183	KY	OHIO
21 185	KY	OLDHAM
21 187	KY	OWEN
21 189	KY	OWSLEY
21 191	KY	PENDLETON
21 193	KY	PERRY
21 195	KY	PIKE
21 197	KY	POWELL
21 199	KY	PULASKI
21 201	KY	ROBERTSON
21 203	KY	ROCKCASTLE
21 205	KY	ROWAN
21 207	KY	RUSSELL
21 209	KY	SCOTT
21 211	KY	SHELBY
21 213	KY	SIMPSON
21 215	KY	SPENCER
21 217	KY	TAYLOR
21 219	KY	TODD
21 221	KY	TRIGG

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
21 223	KY	TRIMBLE
21 225	KY	UNION
21 227	KY	WARREN
21 229	KY	WASHINGTON
21 231	KY	WAYNE
21 233	KY	WEBSTER
21 235	KY	WHITLEY
21 237	KY	WOLFE
21 239	KY	WOODFORD

# LOUISIANA

22 001	LA	ACADIA
22 003	LA	ALLEN
22 005	LA	ASCENSION
22 007	LA	ASSUMPTION
22 009	LA	AVOUELLES
22 011	LA	BEAUREGARD
22 013	LA	BIENVILLE
22 015	LA	BOSSIER
22 017	LA	CADDO
22 019	LA	CALCASIEU
22 021	LA	CALDWELL
22 023	LA	CAMERON
22 025	LA	CATAHOULA
22 027	LA	CLAIBORNE
22 029	LA	CONCORDIA
22 031	LA	DE SOTO
22 033	LA	EAST BATON ROUGE
22 035	LA	EAST CARROLL
22 037	LA	EAST FELICIANA
22 039	LA	EVANGELINE
22 041	LA	FRANKLIN
22 043	LA	GRANT
22 045	LA	IBERIA
22 047	LA	IBERVILLE
22 049	LA	JACKSON
22 051	LA	JEFFERSON
22 053	LA	JEFFERSON DAVIS
22 055	LA	LAFAYETTE
22 057	LA	LAFOURCHE
22 059	LA	LA SALLE
22 061	LA	LINCOLN
22 063	LA	LIVINGSTON
22 065	LA	MADISON



FIPS ST CNTY	STATE ABBRV	COUNTY NAME
22 067	LA	MOREHOUSE
22 069	LA	NATCHITOCHE
22 071	LA	ORLEANS
22 073	LA	OUACHITA
22 075	LA	PLAQUEMINES
22 077	LA	POINTE COUPEE
22 079	LA	RAPIDES
22 081	LA	RED RIVER
22 083	LA	RICHLAND
22 085	LA	SABINE
22 087	LA	ST. BERNARD
22 089	LA	ST. CHARLES
22 091	LA	ST. HELENA
22 093	LA	ST. JAMES
22 095	LA	ST. JOHN THE BAPTIST
22 097	LA	ST. LANDRY
22 099	LA	ST. MARTIN
22 101	LA	ST. MARY
22 103	LA	ST. TAMMANY
22 105	LA	TANGIPAHOA
22 107	LA	TENSAS
22 109	LA	TERREBONNE
22 111	LA	UNION
22 113	LA	VERMILION
22 115	LA	VERNON
22 117	LA	WASHINGTON
22 119	LA	WEBSTER
22 121	LA	WEST BATON ROUGE
22 123	LA	WEST CARROLL
22 125	LA	WEST FELICIANA
22 127	LA	WINN

#### MAINE

23 001	ME	ANDROSCOGGIN
23 003	ME	AROOSTOOK
23 005	ME	CUMBERLAND
23 007	ME	FRANKLIN
23 009	ME	HANCOCK
23 011	ME	KENNEBEC
23 013	ME	KNOX
23 015	ME	LINCOLN
23 017	ME	OXFORD
23 019	ME	PFNOBSCOT
23 021	ME	PISCATAQUIS

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
23 023	ME	SAGADAHOC
23 025	ME	SOMERSET
23 027	ME	WALDO
23 029	ME	WASHINGTON
23 031	ME	YORK

#### MARYLAND

24 001	MD	ALLEGANY
24 003	MD	ANNE ARUNDEL
24 005	MD	BALTIMORE
24 009	MD	CALVERT
24 011	MD	CAROLINE
24 013	MD	CARROLL
24 015	MD	CECIL
24 017	MD	CHARLES
24 019	MD	DORCHESTER
24 021	MD	FREDERICK
24 023	MD	GARRETT
24 025	MD	HARFORD
24 027	MD	HOWARD
24 029	MD	KENT
24 031	MD	MONTGOMERY
24 033	MD	PRINCE GEORGES
24 035	MD	QUEEN ANNES
24 037	MD	ST. MARYS
24 039	MD	SOMERSET
24 041	MD	TALBOT
24 043	MD	WASHINGTON
24 045	MD	WICOMICO
24 047	MD	WORCESTER
24 510	MD	BALTIMORE CITY

#### MASSACHUSETTS

25 001	MA	BARNSTABLE
25 003	MA	BERKSHIRE
25 005	MA	BRISTOL
25 007	MA	DUKES
25 009	MA	ESSEX
25 011	MA	FRANKLIN
25 013	MA	HAMPDEN
25 015	MA	HAMPSHIRE
25 017	MA	MIDDLESEX
25 019	MA	NANTUCKET

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
25 021	MA	NORFOLK
25 023	MA	PLYMOUTH
25 025	MA	SUFFOLK
25 027	MA	WORCESTER

# **MICHIGAN**

26 001	MI	ALCONA
26 003	MI	ALGER
26 005	MI	ALLEGAN
26 007	MI	ALPENA
26 009	MI	ANTRIM
26 011	MI	ARENAC
26 013	MI	BARAGA
26 015	MI	BARRY
26 017	MI	BAY
26 019	MI	BENZIE
26 021	MI	BERRIEN
26 023	MI	BRANCH
26 025	MI	CALHOUN
26 027	MI	CASS
26 029	MI	CHARLEVOIX
26 031	MI	CHEBOYGAN
26 033	MI	CHIPPEWA
26 035	MI	CLARE
26 037	MI	CLINTON
26 039	MI	CRAWFORD
26 041	MI	DELTA
26 043	MI	DICKINSON
26 045	MI	EATON
26 047	MI	EMMET
26 049	MI	GENESEE
26 051	MI	GLADWIN
26 053	MI	GOGEBIC
26 055	MI	GRAND TRAVERSE
26 057	MI	GRATIOT
26 059	MI	HILLSDALE
26 061	MI	HOUGHTON
26 063	MI	HURON
26 065	MI	INGHAM
26 067	MI	IONIA
26 069	MI	IOSCO
26 071	MI	IRON
26 073	MI	ISABELLA
26 075	MI	JACKSON

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
26 077	MI	KALAMAZOO
26 079	MI	KALKASKA
26 081	MI	KENT
26 083	MI	KEWEENAW
26 085	MI	LAKE
26 087	MI	LAPEER
26 089	MI	LEELANAU
26 091	MI	LENAWEE
26 093	MI	LIVINGSTON
26 095	MI	LUCE
26 097	MI	MACKINAC
26 099	MI	MACOMB
26 101	MI	MANISTEE
26 103	MI	MARQUETTE
26 105	MI	MASON
26 107	MI	MECOSTA
26 109	MI	MENOMINEE
26 111	MI	MIDLAND
26 113	MI	MISSAUKEE
26 115	MI	MONROE
26 117	MI	MONTCALM
26 119	MI	MONTMORENCY
26 121	MI	MUSKEGON
26 123	MI	NEWAYGO
26 125	MI	OAKLAND
26 127	MI	OCEANA
26 129	MI	OSCEOLA
26 131	MI	OSCEOLA
26 133	MI	OSCEOLA
26 135	MI	OSCEOLA
26 137	MI	OTSEGO
26 139	MI	OTTAWA
26 141	MI	PRESQUE ISLE
26 143	MI	ROSCOMMON
26 145	MI	SAGINAW
26 147	MI	ST. CLAIR
26 149	MI	ST. JOSEPH
26 151	MI	SANILAC
26 153	MI	SCHOOLCRAFT
26 155	MI	SHIAWASSEE
26 157	MI	TUSCOIA
26 159	MI	VAN BUREN
26 161	MI	WASHTENAW
26 163	MI	WAYNE
26 165	MI	WEXFORD

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
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**MINNESOTA**

27 001	MN	AITKIN
27 003	MN	ANOKA
27 005	MN	BECKER
27 007	MN	BELTRAMI
27 009	MN	BENTON
27 011	MN	BIG STONE
27 013	MN	BLUE EARTH
27 015	MN	BROWN
27 017	MN	CARLTON
27 019	MN	CARVER
27 021	MN	CASS
27 023	MN	CHIPPEWA
27 025	MN	CHISAGO
27 027	MN	CLAY
27 029	MN	CLEARWATER
27 031	MN	COOK
27 033	MN	COTTONWOOD
27 035	MN	CROW WING
27 037	MN	DAKOTA
27 039	MN	DODGE
27 041	MN	DOUGLAS
27 043	MN	FARIBAULT
27 045	MN	FILLMORE
27 047	MN	FREEBORN
27 049	MN	GOODHUE
27 051	MN	GRANT
27 053	MN	HENNEPIN
27 055	MN	HOUSTON
27 057	MN	HUBBARD
27 059	MN	ISANTI
27 061	MN	ITASCA
27 063	MN	JACKSON
27 065	MN	KANABEC
27 067	MN	KANDIYOH
27 069	MN	KITTSO
27 071	MN	KOOCHICHING
27 073	MN	LAC QUI PARLE
27 075	MN	LAKE
27 077	MN	LAKE OF THE WOODS
27 079	MN	LE SUEUR
27 081	MN	LINCOLN
27 083	MN	LYON
27 085	MN	MCLEOD

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
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27 087	MN	MAHNOMEN
27 089	MN	MARSHALL
27 091	MN	MARTIN
27 093	MN	MEEKER
27 095	MN	MILLE LACS
27 097	MN	MORRISON
27 099	MN	MOWER
27 101	MN	MURRAY
27 103	MN	NICOLLET
27 105	MN	NOBLES
27 107	MN	NORMAN
27 109	MN	OLMSTED
27 111	MN	OTTER TAIL
27 113	MN	PENNINGTON
27 115	MN	PINE
27 117	MN	PIPESTONE
27 119	MN	POLK
27 121	MN	POPE
27 123	MN	RAMSEY
27 125	MN	RED LAKE
27 127	MN	REDWOOD
27 129	MN	RENVILLE
27 131	MN	RICE
27 133	MN	ROCK
27 135	MN	ROSEAU
27 137	MN	ST. LOUIS
27 139	MN	SCOTT
27 141	MN	SHERBURNE
27 143	MN	SIBLEY
27 145	MN	STEARNS
27 147	MN	STEELE
27 149	MN	STEVENS
27 151	MN	SWIFT
27 153	MN	TODD
27 155	MN	TRAVERSE
27 157	MN	WABASHA
27 159	MN	WADENA
27 161	MN	WASECA
27 163	MN	WASHINGTON
27 165	MN	WATONWAN
27 167	MN	WILKIN
27 169	MN	WINONA
27 171	MN	WRIGHT
27 173	MN	YELLOW MEDICINE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
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**MISSISSIPPI**

28 001	MS	ADAMS
28 003	MS	ALCORN
28 005	MS	AMITE
28 007	MS	ATTALA
28 009	MS	BENTON
28 011	MS	BOLIVAR
28 013	MS	CALHOUN
28 015	MS	CARROLL
28 017	MS	CHICKASAW
28 019	MS	CHOCTAW
28 021	MS	CLAIBORNE
28 023	MS	CLARKE
28 025	MS	CLAY
28 027	MS	COAHOMA
28 029	MS	COPIAH
28 031	MS	COVINGTON
28 033	MS	DE SOTO
28 035	MS	FORREST
28 037	MS	FRANKLIN
28 039	MS	GEORGE
28 041	MS	GREENE
28 043	MS	GRENADA
28 045	MS	HANCOCK
28 047	MS	HARRISON
28 049	MS	HINDS
28 051	MS	HOLMES
28 053	MS	HUMPHREYS
28 055	MS	ISSAQUENA
28 057	MS	ITAWAMBA
28 059	MS	JACKSON
28 061	MS	JASPER
28 063	MS	JEFFERSON
28 065	MS	JEFFERSON DAVIS
28 067	MS	JONES
28 069	MS	KEMPER
28 071	MS	LAFAYETTE
28 073	MS	LAMAR
28 075	MS	LAUDERDALE
28 077	MS	LAWRENCE
28 079	MS	LEAKE
28 081	MS	LEE
28 083	MS	LEFLORE
28 085	MS	LINCOLN

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
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28 087	MS	LOWNDES
28 089	MS	MADISON
28 091	MS	MARION
28 093	MS	MARSHALL
28 095	MS	MONROE
28 097	MS	MONTGOMERY
28 099	MS	NESHOBA
28 101	MS	NEWTON
28 103	MS	NOXUBEE
28 105	MS	OKTIBBEHA
28 107	MS	PANOLA
28 109	MS	PEARL RIVER
28 111	MS	PERRY
28 113	MS	PIKE
28 115	MS	PONTOTOC
28 117	MS	PRENTISS
28 119	MS	QUITMAN
28 121	MS	RANKIN
28 123	MS	SCOTT
28 125	MS	SHARKEY
28 127	MS	SIMPSON
28 129	MS	SMITH
28 131	MS	STONE
28 133	MS	SUNFLOWER
28 135	MS	TALLAHATCHIE
28 137	MS	TATE
28 139	MS	TIPPAH
28 141	MS	TISHOMINGO
28 143	MS	TUNICA
28 145	MS	UNION
28 147	MS	WALTHALL
28 149	MS	WARREN
28 151	MS	WASHINGTON
28 153	MS	WAYNE
28 155	MS	WEBSTER
28 157	MS	WILKINSON
28 159	MS	WINSTON
28 161	MS	YALOBUSHA
28 163	MS	YAZOO

**MISSOURI**

29 001	MO	ADAIR
29 003	MO	ANDREW
29 005	MO	ATCHISON

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
29 007	MO	AUDRAIN
29 009	MO	BARRY
29 011	MO	BARTON
29 013	MO	BATES
29 015	MO	BENTON
29 017	MO	BOLLINGER
29 019	MO	BOONE
29 021	MO	BUCHANAN
29 023	MO	BUTLER
29 025	MO	CALDWELL
29 027	MO	CALLAWAY
29 029	MO	CAMDEN
29 031	MO	CAPE GIRARDEAU
29 033	MO	CARROLL
29 035	MO	CARTER
29 037	MO	CASS
29 039	MO	CEDAR
29 041	MO	CHARITON
29 043	MO	CHRISTIAN
29 045	MO	CLARK
29 047	MO	CLAY
29 049	MO	CLINTON
29 051	MO	COLE
29 053	MO	COOPER
29 055	MO	CRAWFORD
29 057	MO	DADE
29 059	MO	DALLAS
29 061	MO	DAVISS
29 063	MO	DE KALE
29 065	MO	DENT
29 067	MO	DOUGLAS
29 069	MO	DUNKLIN
29 071	MO	FRANKLIN
29 073	MO	GASCONADE
29 075	MO	GENTRY
29 077	MO	GREENE
29 079	MO	GRUNDY
29 081	MO	HARRISON
29 083	MO	HENRY
29 085	MO	HICKORY
29 087	MO	HOLT
29 089	MO	HOWARD
29 091	MO	HOWELL
29 093	MO	IRON
29 095	MO	JACKSON

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
29 097	MO	JASPER
29 099	MO	JEFFERSON
29 101	MO	JOHNSON
29 103	MO	KNOX
29 105	MO	LACLEDE
29 107	MO	LAFAYETTE
29 109	MO	LAWRENCE
29 111	MO	LEWIS
29 113	MO	LINCOLN
29 115	MO	LINN
29 117	MO	LIVINGSTON
29 119	MO	MCDONALD
29 121	MO	MACON
29 123	MO	MADISON
29 125	MO	MARIES
29 127	MO	MARION
29 129	MO	MERCER
29 131	MO	MILLER
29 133	MO	MISSISSIPPI
29 135	MO	MONITEAU
29 137	MO	MONROE
29 139	MO	MONTGOMERY
29 141	MO	MORGAN
29 143	MO	NEW MADRID
29 145	MO	NEWTON
29 147	MO	NODAWAY
29 149	MO	OREGON
29 151	MO	OSAGE
29 153	MO	OZARK
29 155	MO	PEMISCOT
29 157	MO	PERRY
29 159	MO	PETTIS
29 161	MO	PHELPS
29 163	MO	PIKE
29 165	MO	PLATTE
29 167	MO	POLK
29 169	MO	PULASKI
29 171	MO	PUTNAM
29 173	MO	RALLS
29 175	MO	RANDOLPH
29 177	MO	RAY
29 179	MO	REYNOLDS
29 181	MO	RIPLEY
29 183	MO	ST. CHARLES
29 185	MO	ST. CLAIR

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
29 186	MO	STE. GENEVIEVE
29 187	MO	ST. FRANCOIS
29 189	MO	ST. LOUIS
29 195	MO	SALINE
29 197	MO	SCHUYLER
29 199	MO	SCOTLAND
29 201	MO	SCOTT
29 203	MO	SHANNON
29 205	MO	SHELBY
29 207	MO	STODDARD
29 209	MO	STONE
29 211	MO	SULLIVAN
29 213	MO	TANEY
29 215	MO	TEXAS
29 217	MO	VERNON
29 219	MO	WARREN
29 221	MO	WASHINGTON
29 223	MO	WAYNE
29 225	MO	WEBSTER
29 227	MO	WORTH
29 229	MO	WRIGHT
29 510	MO	ST. LOUIS CITY

#### MONTANA

30 001	MT	BEAVERHEAD
30 003	MT	BIG HORN
30 005	MT	BLAINE
30 007	MT	BROADWATER
30 009	MT	CARBON
30 011	MT	CARTER
30 013	MT	CASCADE
30 015	MT	CHOUTEAU
30 017	MT	CUSTER
30 019	MT	DANIELS
30 021	MT	DAWSON
30 023	MT	DEER LODGE
30 025	MT	FALLON
30 027	MT	FERGUS
30 029	MT	FLATHEAD
30 031	MT	GALLATIN
30 033	MT	GARFIELD
30 035	MT	GLACIER
30 037	MT	GOLDEN VALLEY
30 039	MT	GRANITE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
30 041	MT	HILL
30 043	MT	JEFFERSON
30 045	MT	JUDITH BASIN
30 047	MT	LAKE
30 049	MT	LEWIS AND CLARK
30 051	MT	LIBERTY
30 053	MT	LINCOLN
30 055	MT	MCCONE
30 057	MT	MADISON
30 059	MT	MEAGHER
30 061	MT	MINERAL
30 063	MT	MISSOULA
30 065	MT	MUSSELSHELL
30 067	MT	PARK
30 069	MT	PETROLEUM
30 071	MT	PHILLIPS
30 073	MT	PONDERA
30 075	MT	POWDER RIVER
30 077	MT	POWELL
30 079	MT	PRAIRIE
30 081	MT	RAVALLI
30 083	MT	RICHLAND
30 085	MT	ROOSEVELT
30 087	MT	ROSELAND
30 089	MT	SANDERS
30 091	MT	SHERIDAN
30 093	MT	SILVER BOW
30 095	MT	STILLWATER
30 097	MT	SWEET GRASS
30 099	MT	TETON
30 101	MT	TOOLE
30 103	MT	TREASURE
30 105	MT	VALLEY
30 107	MT	WHEATLAND
30 109	MT	WIBAUX
30 111	MT	YELLOWSTONE
30 113	MT	YELLOWSTONE PARK

#### NEBRASKA

31 001	NE	ADAMS
31 003	NE	ANTELOPE
31 005	NE	ARTHUR
31 007	NE	BANNER
31 009	NE	BLAINE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
31 011	NE	BOONE
31 013	NE	BOX BUTTE
31 015	NE	BOYD
31 017	NE	BROWN
31 019	NE	BUFFALO
31 021	NE	BURT
31 023	NE	BUTLER
31 025	NE	CASS
31 027	NE	CEDAR
31 029	NE	CHASE
31 031	NE	CHERRY
31 033	NE	CHEYENNE
31 035	NE	CLAY
31 037	NE	COLFAX
31 039	NE	CUMING
31 041	NE	CUSTER
31 043	NE	DAKOTA
31 045	NE	DAWES
31 047	NE	DAWSON
31 049	NE	DEUEL
31 051	NE	DIXON
31 053	NE	DODGE
31 055	NE	DOUGLAS
31 057	NE	DUNDY
31 059	NE	FILLMORE
31 061	NE	FRANKLIN
31 063	NE	FRONTIER
31 065	NE	FURNAS
31 067	NE	GAGE
31 069	NE	GARDEN
31 071	NE	GARFIELD
31 073	NE	GOSPER
31 075	NE	GRANT
31 077	NE	GREELEY
31 079	NE	HALL
31 081	NE	HAMILTON
31 083	NE	HARLAN
31 085	NE	HAYES
31 087	NE	HITCHCOCK
31 089	NE	HOLT
31 091	NE	HOOVER
31 093	NE	HOWARD
31 095	NE	JEFFERSON
31 097	NE	JOHNSON
31 099	NE	KEARNEY

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
31 101	NE	KEITH
31 103	NE	KEYA PAHA
31 105	NE	KIMBALL
31 107	NE	KNOX
31 109	NE	LANCASTER
31 111	NE	LINCOLN
31 113	NE	LOGAN
31 115	NE	LOUP
31 117	NE	MCPHERSON
31 119	NE	MADISON
31 121	NE	MERRICK
31 123	NE	MORRILL
31 125	NE	NANCE
31 127	NE	NEMAH
31 129	NE	NUCKOLLS
31 131	NE	OTOE
31 133	NE	PAWNEE
31 135	NE	PERKINS
31 137	NE	PHELPS
31 139	NE	PIERCE
31 141	NE	PLATTE
31 143	NE	POLK
31 145	NE	RED WILLOW
31 147	NE	RICHARDSON
31 149	NE	ROCK
31 151	NE	SALINE
31 153	NE	SARPY
31 155	NE	SAUNDERS
31 157	NE	SCOTTS BLUFF
31 159	NE	SEWARD
31 161	NE	SHERIDAN
31 163	NE	SHERMAN
31 165	NE	SIOUX
31 167	NE	STANTON
31 169	NE	THAYER
31 171	NE	THOMAS
31 173	NE	THURSTON
31 175	NE	VALLEY
31 177	NE	WASHINGTON
31 179	NE	WAYNE
31 181	NE	WEBSTER
31 183	NE	WHEELER
31 185	NE	YORK

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
<b>NEVADA</b>		
32 001	NV	CHURCHILL
32 003	NV	CLARK
32 005	NV	DOUGLAS
32 007	NV	ELKO
32 009	NV	ESMERALDA
32 011	NV	EUREKA
32 013	NV	HUMBOLDT
32 015	NV	LANDER
32 017	NV	LINCOLN
32 019	NV	LYON
32 021	NV	MINERAL
32 023	NV	NYE
32 027	NV	PERSHING
32 029	NV	STOREY
32 031	NV	WASHOE
32 033	NV	WHITE PINE
32 510	NV	CARSON CITY CITY

**NEW HAMPSHIRE**

33 001	NH	BELKNAP
33 003	NH	CARROLL
33 005	NH	CHESHIRE
33 007	NH	COOS
33 009	NH	GRAFTON
33 011	NH	HILLSBOROUGH
33 013	NH	MERRIMACK
33 015	NH	ROCKINGHAM
33 017	NH	STRAFFORD
33 019	NH	SULLIVAN

**NEW JERSEY**

34 001	NJ	ATLANTIC
34 003	NJ	BURGEN
34 005	NJ	BURLINGTON
34 007	NJ	CAMDEN
34 009	NJ	CAPE MAY
34 011	NJ	CUMBERLAND
34 013	NJ	ESSEX
34 015	NJ	GLOUCESTER
34 017	NJ	HUDSON
34 019	NJ	HUNTERDON

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
34 021	NJ	MERCER
34 023	NJ	MIDDLESEX
34 025	NJ	MONMOUTH
34 027	NJ	MORRIS
34 029	NJ	OCEAN
34 031	NJ	PASSAIC
34 033	NJ	SALEM
34 035	NJ	SOMERSET
34 037	NJ	SUSSEX
34 039	NJ	UNION
34 041	NJ	WARREN

**NEW MEXICO**

35 001	NM	BERNALILLO
35 003	NM	CATRON
35 005	NM	CHAVES
35 007	NM	COLFAX
35 009	NM	CURRY
35 011	NM	DE BACA
35 013	NM	DONA ANA
35 015	NM	EDDY
35 017	NM	GRANT
35 019	NM	GUADALUPE
35 021	NM	HARDING
35 023	NM	HIDALGO
35 025	NM	LEA
35 027	NM	LINCOLN
35 028	NM	LOS ALAMOS
35 029	NM	LUNA
35 031	NM	MCKINLEY
35 033	NM	MORA
35 035	NM	OTERO
35 037	NM	QUAY
35 039	NM	RIO ARriba
35 041	NM	ROOSEVELT
35 043	NM	SANDOVAL
35 045	NM	SAN JUAN
35 047	NM	SAN MIGUEL
35 049	NM	SANTA FE
35 051	NM	SIERRA
35 053	NM	SOCORRO
35 055	NM	TAOS
35 057	NM	TORRANCE
35 059	NM	UNION



FIPS ST CNTY	STATE ABBRV	COUNTY NAME
35 061	NM	VALENCIA
<b>NEW YORK</b>		
36 001	NY	ALBANY
36 003	NY	ALLEGANY
36 005	NY	BRONX
36 007	NY	BROOME
36 009	NY	CATTARAUGUS
36 011	NY	CAYUGA
36 013	NY	CHAUTAUQUA
36 015	NY	CHEMUNG
36 017	NY	CHENANGO
36 019	NY	CLINTON
36 021	NY	COLUMBIA
36 023	NY	CORTLAND
36 025	NY	DELAWARE
36 027	NY	DUTCHESS
36 029	NY	ERIE
36 031	NY	ESSEX
36 033	NY	FRANKLIN
36 035	NY	FULTON
36 037	NY	GENESEE
36 039	NY	GREENE
36 041	NY	HAMILTON
36 043	NY	HERKIMER
36 045	NY	JEFFERSON
36 047	NY	KINGS
36 049	NY	LEWIS
36 051	NY	LIVINGSTON
36 053	NY	MADISON
36 055	NY	MONROE
36 057	NY	MONTGOMERY
36 059	NY	NASSAU
36 061	NY	NEW YORK CITY
36 063	NY	NIAGARA
36 065	NY	ONEIDA
36 067	NY	ONONDAGA
36 069	NY	ONTARIO
36 071	NY	ORANGE
36 073	NY	ORLEANS
36 075	NY	OSWEGO
36 077	NY	OTSEGO
36 079	NY	PUTNAM
36 081	NY	QUEENS

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
36 083	NY	RENSSELAER
36 085	NY	RICHMOND
36 087	NY	ROCKLAND
36 089	NY	ST. LAWRENCE
36 091	NY	SARATOGA
36 093	NY	SCHENECTADY
36 095	NY	SCHOHARIE
36 097	NY	SCHUYLER
36 099	NY	SENECA
36 101	NY	STEUBEN
36 103	NY	SUFFOLK
36 105	NY	SULLIVAN
36 107	NY	TIOGA
36 109	NY	TOMPKINS
36 111	NY	ULSTER
36 113	NY	WARREN
36 115	NY	WASHINGTON
36 117	NY	WAYNE
36 119	NY	WESTCHESTER
36 121	NY	WYOMING
36 123	NY	YATES

**NORTH CAROLINA**

37 001	NC	ALAMANCE
37 003	NC	ALEXANDER
37 005	NC	ALLEGHANY
37 007	NC	ANSON
37 009	NC	ASHE
37 011	NC	AVERY
37 013	NC	BEAUFORT
37 015	NC	BERTIE
37 017	NC	BLADEN
37 019	NC	BRUNSWICK
37 021	NC	BUNCOMBE
37 023	NC	BURKE
37 025	NC	CABARRUS
37 027	NC	CALDWELL
37 029	NC	CAMDEN
37 031	NC	CARTERET
37 033	NC	CASWELL
37 035	NC	CATAWBA
37 037	NC	CHATHAM
37 039	NC	CHEROKEE
37 041	NC	CHOWAN

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
37 043	NC	CLAY
37 045	NC	CLEVELAND
37 047	NC	COLUMBUS
37 049	NC	CRAVEN
37 051	NC	CUMBERLAND
37 053	NC	CURRITUCK
37 055	NC	DARE
37 057	NC	DAVIDSON
37 059	NC	DAVIE
37 061	NC	DUPLIN
37 063	NC	DURHAM
37 065	NC	EDGECOMBE
37 067	NC	FORSYTH
37 069	NC	FRANKLIN
37 071	NC	GASTON
37 073	NC	GATES
37 075	NC	GRAHAM
37 077	NC	GRANVILLE
37 079	NC	GREENE
37 081	NC	GUILFORD
37 083	NC	HALIFAX
37 085	NC	HARNETT
37 087	NC	HAYWOOD
37 089	NC	HENDERSON
37 091	NC	HERTFORD
37 093	NC	HOKE
37 095	NC	HYDE
37 097	NC	IREDELL
37 099	NC	JACKSON
37 101	NC	JOHNSTON
37 103	NC	JONES
37 105	NC	LEE
37 107	NC	LENOIR
37 109	NC	LINCOLN
37 111	NC	MCDOWELL
37 113	NC	MACON
37 115	NC	MADISON
37 117	NC	MARTIN
37 119	NC	MECKLENBURG
37 121	NC	MITCHELL
37 123	NC	MONTGOMERY
37 125	NC	MOORE
37 127	NC	NASH
37 129	NC	NEW HANOVER
37 131	NC	NORTHAMPTON

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
37 133	NC	ONSLOW
37 135	NC	ORANGE
37 137	NC	PAMLICO
37 139	NC	PASQUOTANK
37 141	NC	PENDER
37 143	NC	PERQUIMANS
37 145	NC	PERSON
37 147	NC	PITT'
37 149	NC	POLK
37 151	NC	RANDOLPH
37 153	NC	RICHMOND
37 155	NC	ROBESON
37 157	NC	ROCKINGHAM
37 159	NC	ROWAN
37 161	NC	RUTHERFORD
37 163	NC	SAMPSON
37 165	NC	SCOTLAND
37 167	NC	STANLY
37 169	NC	STOKES
37 171	NC	SURRY
37 173	NC	SWAIN
37 175	NC	TRANSYLVANIA
37 177	NC	TYRRELL
37 179	NC	UNION
37 181	NC	VANCE
37 183	NC	WAKE
37 185	NC	WARREN
37 187	NC	WASHINGTON
37 189	NC	WATAUGA
37 191	NC	WAYNE
37 193	NC	WILKES
37 195	NC	WILSON
37 197	NC	YADKIN
37 199	NC	YANCEY

# **NORTH DAKOTA**

38 001	ND	ADAMS
38 003	ND	BARNES
38 005	ND	BENSON
38 007	ND	BILLINGS
38 009	ND	BOTTINEAU
38 011	ND	BOWMAN
38 013	ND	BURKE
38 015	ND	BURLEIGH

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
38 017	ND	CASS
38 019	ND	CAVALIER
38 021	ND	DICKEY
38 023	ND	DIVIDE
38 025	ND	DUNN
38 027	ND	EDDY
38 029	ND	EMMONS
38 031	ND	FOSTER
38 033	ND	GOLDEN VALLEY
38 035	ND	GRAND FORKS
38 037	ND	GRANT
38 039	ND	GRIGGS
38 041	ND	HETTINGER
38 043	ND	KIDDER
38 045	ND	LA MOURE
38 047	ND	LOGAN
38 049	ND	MCHENRY
38 051	ND	MCINTOSH
38 053	ND	MCKENZIE
38 055	ND	MCLEAN
38 057	ND	MERCER
38 059	ND	MORTON
38 061	ND	MOUNTRAIL
38 063	ND	NELSON
38 065	ND	OLIVER
38 067	ND	PEMBINA
38 069	ND	PIERCE
38 071	ND	RAMSEY
38 073	ND	RANSOM
38 075	ND	RENVILLE
38 077	ND	RICHLAND
38 079	ND	ROLETTE
38 081	ND	SARGENT
38 083	ND	SHERIDAN
38 085	ND	SIOUX
38 087	ND	SLOPE
38 089	ND	STARK
38 091	ND	STEELE
38 093	ND	STUTSMAN
38 095	ND	TOWNER
38 097	ND	TFAILL
38 099	ND	WALSH
38 101	ND	WARD
38 103	ND	WELLS
38 105	ND	WILLIAMS

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
OHIO		
39 001	OH	ADAMS
39 003	OH	ALLEN
39 005	OH	ASHLAND
39 007	OH	ASHTABULA
39 009	OH	ATHENS
39 011	OH	AUGLAIZE
39 013	OH	BELMONT
39 015	OH	BROWN
39 017	OH	BUTLER
39 019	OH	CARROLL
39 021	OH	CHAMPAIGN
39 023	OH	CLARK
39 025	OH	CLERMONT
39 027	OH	CLINTON
39 029	OH	COLUMBIANA
39 031	OH	COSHOCTON
39 033	OH	CRAWFORD
39 035	OH	CUYAHOGA
39 037	OH	DARKE
39 039	OH	DEFIANCE
39 041	OH	DELAWARE
39 043	OH	ERIE
39 045	OH	FAIRFIELD
39 047	OH	FAYETTE
39 049	OH	FRANKLIN
39 051	OH	FULTON
39 053	OH	GALLIA
39 055	OH	GEAUGA
39 057	OH	GREENE
39 059	OH	GUERNSEY
39 061	OH	HAMILTON
39 063	OH	HANCOCK
39 065	OH	HARDIN
39 067	OH	HARRISON
39 069	OH	HENRY
39 071	OH	HIGHLAND
39 073	OH	HOCKING
39 075	OH	HOLMES
39 077	OH	HURON
39 079	OH	JACKSON
39 081	OH	JEFFERSON
39 083	OH	KNOX
39 085	OH	LAKE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
39 087	OH	LAWRENCE
39 089	OH	LICKING
39 091	OH	LOGAN
39 093	OH	LORAIN
39 095	OH	LUCAS
39 097	OH	MADISON
39 099	OH	MAHONING
39 101	OH	MARION
39 103	OH	MEDINA
39 105	OH	MEIGS
39 107	OH	MERCER
39 109	OH	MIAMI
39 111	OH	MONROE
39 113	OH	MONTGOMERY
39 115	OH	MORGAN
39 117	OH	MORROW
39 119	OH	MUSKINGUM
39 121	OH	NOBLE
39 123	OH	OTTAWA
39 125	OH	PAULDING
39 127	OH	PERRY
39 129	OH	PICKAWAY
39 131	OH	PIKE
39 133	OH	PORTAGE
39 135	OH	PREBLE
39 137	OH	PUTNAM
39 139	OH	RICHLAND
39 141	OH	ROSS
39 143	OH	SANDUSKY
39 145	OH	SCIOTO
39 147	OH	SENECA
39 149	OH	SHELBY
39 151	OH	STARK
39 153	OH	SUMMIT
39 155	OH	TRUMBULL
39 157	OH	TUSCARAWAS
39 159	OH	UNION
39 161	OH	VAN WERT
39 163	OH	VINTON
39 165	OH	WARREN
39 167	OH	WASHINGTON
39 169	OH	WAYNE
39 171	OH	WILLIAMS
39 173	OH	WOOD
39 175	OH	WYANDOT

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
<b>OKLAHOMA</b>		
40 001	OK	ADAIR
40 003	OK	ALFALFA
40 005	OK	ATOKA
40 007	OK	BEAVER
40 009	OK	BECKHAM
40 011	OK	BLAINE
40 013	OK	BRYAN
40 015	OK	CADDO
40 017	OK	CANADIAN
40 019	OK	CARTER
40 021	OK	CHEROKEE
40 023	OK	CHOCTAW
40 025	OK	CIMARRON
40 027	OK	CLEVELAND
40 029	OK	COAL
40 031	OK	COMANCHE
40 033	OK	COTTON
40 035	OK	CRAIG
40 037	OK	CREEK
40 039	OK	CUSTER
40 041	OK	DELAWARE
40 043	OK	DEWEY
40 045	OK	ELLIS
40 047	OK	GARFIELD
40 049	OK	GARVIN
40 051	OK	GRADY
40 053	OK	GRANT
40 055	OK	GREER
40 057	OK	HARMON
40 059	OK	HARPER
40 061	OK	HASKELL
40 063	OK	HUGHES
40 065	OK	JACKSON
40 067	OK	JEFFERSON
40 069	OK	JOHNSTON
40 071	OK	KAY
40 073	OK	KINGFISHER
40 075	OK	KIOWA
40 077	OK	LATIMER
40 079	OK	LE FLORE
40 081	OK	LINCOLN
40 083	OK	LOGAN
40 085	OK	LOVE

FIPS ST	CNTY	STATE ABBRV	COUNTY NAME
40	087	OK	MCCLAIN
40	089	OK	MCCURTAIN
40	091	OK	MCINTOSH
40	093	OK	MAJOR
40	095	OK	MARSHALL
40	097	OK	MAYES
40	099	OK	MURRAY
40	101	OK	MUSKOGEE
40	103	OK	NOBLE
40	105	OK	NOWATA
40	107	OK	OKFUSKEE
40	109	OK	OKLAHOMA
40	111	OK	OKMULGEE
40	113	OK	OSAGE
40	115	OK	OTTAWA
40	117	OK	PAWNEE
40	119	OK	PAYNE
40	121	OK	PITTSBURG
40	123	OK	PONTOTOC
40	125	OK	POTTAWATOMIE
40	127	OK	PUSHMATAHA
40	129	OK	ROGER MILLS
40	131	OK	ROGERS
40	133	OK	SEMINOLE
40	135	OK	SEQUOYAH
40	137	OK	STEPHENS
40	139	OK	TEXAS
40	141	OK	TILLMAN
40	143	OK	TULSA
40	145	OK	WAGONER
40	147	OK	WASHINGTON
40	149	OK	WASHITA
40	151	OK	WOODS
40	153	OK	WOODWARD

#### OREGON

41	001	OR	BAKER
41	003	OR	BENTON
41	005	OR	CLACKAMAS
41	007	OR	CLATSOP
41	009	OR	COLUMBIA
41	011	OR	COOS
41	013	OR	CROOK
41	015	OR	CURRY

FIPS ST	CNTY	STATE ABBRV	COUNTY NAME
41	017	OR	DESCHUTES
41	019	OR	DOUGLAS
41	021	OR	GILLIAM
41	023	OR	GRANT
41	025	OR	HARNEY
41	027	OR	HOOD RIVER
41	029	OR	JACKSON
41	031	OR	JEFFERSON
41	033	OR	JOSEPHINE
41	035	OR	KLAMATH
41	037	OR	LAKE
41	039	OR	LANE
41	041	OR	LINCOLN
41	043	OR	LINN
41	045	OR	MALHEUR
41	047	OR	MARION
41	049	OR	MORROW
41	051	OR	MULTNOMAH
41	053	OR	POLK
41	055	OR	SHERMAN
41	057	OR	TILLAMOOK
41	059	OR	UMATILLA
41	061	OR	UNION
41	063	OR	WALLOWA
41	065	OR	WASCO
41	067	OR	WASHINGTON
41	069	OR	WHEELER
41	071	OR	YAMHILL

#### PENNSYLVANIA

42	001	PA	ADAMS
42	003	PA	ALLEGHENY
42	005	PA	ARMSTRONG
42	007	PA	BEAVER
42	009	PA	BEDFORD
42	011	PA	BERKS
42	013	PA	BLAIR
42	015	PA	BRADFORD
42	017	PA	BUCKS
42	019	PA	BUTLER
42	021	PA	CAMBERIA
42	023	PA	CAMERON
42	025	PA	CARBON
42	027	PA	CENTRE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
42 029	PA	CHESTER
42 031	PA	CLARION
42 033	PA	CLEARFIELD
42 035	PA	CLINTON
42 037	PA	COLUMBIA
42 039	PA	CRAWFORD
42 041	PA	CUMBERLAND
42 043	PA	DAUPHIN
42 045	PA	DELAWARE
42 047	PA	ELK
42 049	PA	ERIE
42 051	PA	FAYETTE
42 053	PA	FOREST
42 055	PA	FRANKLIN
42 057	PA	FULTON
42 059	PA	GREENE
42 061	PA	HUNTINGDON
42 063	PA	INDIANA
42 065	PA	JEFFERSON
42 067	PA	JUNIATA
42 069	PA	LACKAWANNA
42 071	PA	LANCASTER
42 073	PA	LAWRENCE
42 075	PA	LEBANON
42 077	PA	LEHIGH
42 079	PA	LUZERNE
42 081	PA	LYCOMING
42 083	PA	MCKEAN
42 085	PA	MERCER
42 087	PA	MIFFLIN
42 089	PA	MONROE
42 091	PA	MONTGOMERY
42 093	PA	MONTOUR
42 095	PA	NORTHAMPTON
42 097	PA	NORTHUMBERLAND
42 099	PA	PERRY
42 101	PA	PHILADELPHIA
42 103	PA	PIKE
42 105	PA	POTTER
42 107	PA	SCHUYLKILL
42 109	PA	SNYDER
42 111	PA	SOMERSET
42 113	PA	SULLIVAN
42 115	PA	SUSQUEHANNA
42 117	PA	TIOGA

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
42 119	PA	UNION
42 121	PA	VENANGO
42 123	PA	WARREN
42 125	PA	WASHINGTON
42 127	PA	WAYNE
42 129	PA	WESTMORELAND
42 131	PA	WYOMING
42 133	PA	YORK

#### RHODE ISLAND

44 001	RI	BRISTOL
44 003	RI	KENT
44 005	RI	NEWPORT
44 007	RI	PROVIDENCE
44 009	RI	WASHINGTON

#### SOUTH CAROLINA

45 001	SC	ABBEVILLE
45 003	SC	AIKEN
45 005	SC	ALLENDALE
45 007	SC	ANDERSON
45 009	SC	BAMBERG
45 011	SC	BARNWELL
45 013	SC	BEAUFORT
45 015	SC	BERKELEY
45 017	SC	CALHOUN
45 019	SC	CHARLESTON
45 021	SC	CHEROKEE
45 023	SC	CHESTER
45 025	SC	CHESTERFIELD
45 027	SC	CLARENDON
45 029	SC	COLLETON
45 031	SC	DARLINGTON
45 033	SC	DILLON
45 035	SC	DORCHESTER
45 037	SC	EDGEFIELD
45 039	SC	FAIRFIELD
45 041	SC	FLORENCE
45 043	SC	GEORGETOWN
45 045	SC	GREENVILLE
45 047	SC	GREENWOOD
45 049	SC	HAMPTON
45 051	SC	HORRY

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
45 053	SC	JASPER
45 055	SC	KERSHAW
45 057	SC	LANCASTER
45 059	SC	LAURENS
45 061	SC	LEE
45 063	SC	LEXINGTON
45 065	SC	MCCORMICK
45 067	SC	MARION
45 069	SC	MARLBORO
45 071	SC	NEWBERRY
45 073	SC	OCONEE
45 075	SC	ORANGEBURG
45 077	SC	PICKENS
45 079	SC	RICHLAND
45 081	SC	SALUDA
45 083	SC	SPARTANBURG
45 085	SC	SUMTER
45 087	SC	UNION
45 089	SC	WILLIAMSBURG
45 091	SC	YORK

#### SOUTH DAKOTA

46 003	SD	AURORA
46 005	SD	BEADLE
46 007	SD	BENNETT
46 009	SD	BON HOMME
46 011	SD	BROOKINGS
46 013	SD	BROWN
46 015	SD	BRULE
46 017	SD	BUFFALO
46 019	SD	BUTTE
46 021	SD	CAMPBELL
46 023	SD	CHARLES MIX
46 025	SD	CLARK
46 027	SD	CLAY
46 029	SD	CODINGTON
46 031	SD	CORSON
46 033	SD	CUSTER
46 035	SD	DAVISON
46 037	SD	DAY
46 039	SD	DEUEL
46 041	SD	DEWEY
46 043	SD	DOUGLAS
46 045	SD	EDMUNDS

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
46 047	SD	FALL RIVER
46 049	SD	FAULK
46 051	SD	GRANT
46 053	SD	GREGORY
46 055	SD	HAAKON
46 057	SD	HAMLIN
46 059	SD	HAND
46 061	SD	HANSON
46 063	SD	HARDING
46 065	SD	HUGHES
46 067	SD	HUTCHINSON
46 069	SD	HYDE
46 071	SD	JACKSON
46 073	SD	JERAULD
46 075	SD	JONES
46 077	SD	KINGSBURY
46 079	SD	LAKE
46 081	SD	LAWRENCE
46 083	SD	LINCOLN
46 085	SD	LYMAN
46 087	SD	MCCOOK
46 089	SD	MCPHERSON
46 091	SD	MARSHALL
46 093	SD	MEADE
46 095	SD	MELLETTE
46 097	SD	MINER
46 099	SD	MINNEHAHA
46 101	SD	MOODY
46 103	SD	PENNINGTON
46 105	SD	PERKINS
46 107	SD	POTTER
46 109	SD	ROBERTS
46 111	SD	SANBORN
46 113	SD	SHANNON
46 115	SD	SPINK
46 117	SD	STANLEY
46 119	SD	SULLY
46 121	SD	TODD
46 123	SD	TRIPP
46 125	SD	TURNER
46 127	SD	UNION
46 129	SD	WALWORTH
46 135	SD	YANKTON
46 137	SD	ZIEBACH

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
47 177	TN	WARREN
47 179	TN	WASHINGTON
47 181	TN	WAYNE
47 183	TN	WEAKLEY
47 185	TN	WHITE
47 187	TN	WILLIAMSON
47 189	TN	WILSON

**TEXAS**

48 001	TX	ANDERSON
48 003	TX	ANDREWS
48 005	TX	ANGELINA
48 007	TX	ARANSAS
48 009	TX	ARCHER
48 011	TX	ARMSTRONG
48 013	TX	ATASCOSA
48 015	TX	AUSTIN
48 017	TX	BAILEY
48 019	TX	BANDERA
48 021	TX	BASTROP
48 023	TX	BAYLOR
48 025	TX	BEE
48 027	TX	BELL
48 029	TX	BEXAR
48 031	TX	BLANCO
48 033	TX	BORDEN
48 035	TX	BOSQUE
48 037	TX	BOWIE
48 039	TX	BRAZORIA
48 041	TX	BRAZOS
48 043	TX	BREWSTER
48 045	TX	BRISCOE
48 047	TX	BROOKS
48 049	TX	BROWN
48 051	TX	BURLESON
48 053	TX	BURNET
48 055	TX	CALDWELL
48 057	TX	CALHOUN
48 059	TX	CALLAHAN
48 061	TX	CAMERON
48 063	TX	CAMP
48 065	TX	CARSON
48 067	TX	CASS
48 069	TX	CASTRO

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
48 071	TX	CHAMBERS
48 073	TX	CHEROKEE
48 075	TX	CHILDRESS
48 077	TX	CLAY
48 079	TX	COCHRAN
48 081	TX	COKE
48 083	TX	COLEMAN
48 085	TX	COLLIN
48 087	TX	COLLINGSWORTH
48 089	TX	COLORADO
48 091	TX	COMAL
48 093	TX	COMANCHE
48 095	TX	CONCHO
48 097	TX	COOKE
48 099	TX	CORYELL
48 101	TX	COTTLE
48 103	TX	CRANE
48 105	TX	CROCKETT
48 107	TX	CROSBY
48 109	TX	CULBERSON
48 111	TX	DALLAM
48 113	TX	DALLAS
48 115	TX	DAWSON
48 117	TX	DEAF SMITH
48 119	TX	DELTA
48 121	TX	DENTON
48 123	TX	DE WITT
48 125	TX	DICKENS
48 127	TX	DIMMIT
48 129	TX	DONLEY
48 131	TX	DUVAL
48 133	TX	EASTLAND
48 135	TX	ECTOR
48 137	TX	EDWARDS
48 139	TX	ELLIS
48 141	TX	EL PASO
48 143	TX	ERATH
48 145	TX	FALLS
48 147	TX	FANNIN
48 149	TX	FAYETTE
48 151	TX	FISHER
48 153	TX	FLOYD
48 155	TX	FOARD
48 157	TX	FORT BEND
48 159	TX	FRANKLIN



FIPS ST CNTY	STATE ABBRV	COUNTY NAME
<b>TENNESSEE</b>		
47 001	TN	ANDERSON
47 003	TN	BEDFORD
47 005	TN	BENTON
47 007	TN	BLED SOE
47 009	TN	BLOUNT
47 011	TN	BRADLEY
47 013	TN	CAMPBELL
47 015	TN	CANNON
47 017	TN	CARROLL
47 019	TN	CARTER
47 021	TN	CHEATHAM
47 023	TN	CHESTER
47 025	TN	CLAIBORNE
47 027	TN	CLAY
47 029	TN	COCKE
47 031	TN	COFFEE
47 033	TN	CROCKETT
47 035	TN	CUMBERLAND
47 037	TN	DAVIDSON
47 039	TN	DECATUR
47 041	TN	DE KALB
47 043	TN	DICKSON
47 045	TN	DYER
47 047	TN	FAYETTE
47 049	TN	FENTRESS
47 051	TN	FRANKLIN
47 053	TN	GIBSON
47 055	TN	GILES
47 057	TN	GRAINGER
47 059	TN	GREENE
47 061	TN	GRUNDY
47 063	TN	HAMBLEN
47 065	TN	HAMILTON
47 067	TN	HANCOCK
47 069	TN	HARDMAN
47 071	TN	HARDIN
47 073	TN	HAWKINS
47 075	TN	HAYWOOD
47 077	TN	HENDERSON
47 079	TN	HENRY
47 081	TN	HICKMAN
47 083	TN	HOUSTON
47 085	TN	HUMPHREYS

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
47 087	TN	JACKSON
47 089	TN	JEFFERSON
47 091	TN	JOHNSON
47 093	TN	KNOX
47 095	TN	LAKE
47 097	TN	LAUDERDALE
47 099	TN	LAWRENCE
47 101	TN	LEWIS
47 103	TN	LINCOLN
47 105	TN	LOUDON
47 107	TN	MC MINN
47 109	TN	MC NAIRY
47 111	TN	MACON
47 113	TN	MADISON
47 115	TN	MARION
47 117	TN	MARSHALL
47 119	TN	MAURY
47 121	TN	MEIGS
47 123	TN	MONROE
47 125	TN	MONTGOMERY
47 127	TN	MOORE
47 129	TN	MORGAN
47 131	TN	OBION
47 133	TN	OVERTON
47 135	TN	PERRY
47 137	TN	PICKETT
47 139	TN	POLK
47 141	TN	PUTNAM
47 143	TN	RHEA
47 145	TN	ROANE
47 147	TN	ROBERTSON
47 149	TN	RUTHERFORD
47 151	TN	SCOTT
47 153	TN	SEQUATCHIE
47 155	TN	SEVIER
47 157	TN	SHELBY
47 159	TN	SMITH
47 161	TN	STEWART
47 163	TN	SULLIVAN
47 165	TN	SUMNER
47 167	TN	TIPTON
47 169	TN	TROUSDALE
47 171	TN	UNICOI
47 173	TN	UNION
47 175	TN	VAN BUREN

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
48 161	TX	FREESTONE
48 163	TX	FRIO
48 165	TX	GAINES
48 167	TX	GALVESTON
48 169	TX	GARZA
48 171	TX	GILLESPIE
48 173	TX	GLASSCOCK
48 175	TX	GOLIAD
48 177	TX	GONZALES
48 179	TX	GRAY
48 181	TX	GRAYSON
48 183	TX	GREGG
48 185	TX	GRIMES
48 187	TX	GUADALUPE
48 189	TX	HALE
48 191	TX	HALL
48 193	TX	HAMILTON
48 195	TX	HANSFORD
48 197	TX	HARDEMAN
48 199	TX	HARDIN
48 201	TX	HARRIS
48 203	TX	HARRISON
48 205	TX	HARTLEY
48 207	TX	HASKELL
48 209	TX	HAYS
48 211	TX	HEMPHILL
48 213	TX	HENDERSON
48 215	TX	HIDALGO
48 217	TX	HILL
48 219	TX	HOCKLEY
48 221	TX	HOOD
48 223	TX	HOPKINS
48 225	TX	HOUSTON
48 227	TX	HOWARD
48 229	TX	HUDSPETH
48 231	TX	HUNT
48 233	TX	HUTCHINSON
48 235	TX	IRION
48 237	TX	JACK
48 239	TX	JACKSON
48 241	TX	JASPER
48 243	TX	JEFF DAVIS
48 245	TX	JEFFERSON
48 247	TX	JIM HOGG
48 249	TX	JIM WELLS

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
48 251	TX	JOHNSON
48 253	TX	JONES
48 255	TX	KARNES
48 257	TX	KAUFMAN
48 259	TX	KENDALL
48 261	TX	KENEDY
48 263	TX	KENT
48 265	TX	KERR
48 267	TX	KIMBLE
48 269	TX	KING
48 271	TX	KINNEY
48 273	TX	KLEBERG
48 275	TX	KNOX
48 277	TX	LAMAR
48 279	TX	LAMB
48 281	TX	LAMPASAS
48 283	TX	LA SALLE
48 285	TX	LAVACA
48 287	TX	LEE
48 289	TX	LEON
48 291	TX	LIBERTY
48 293	TX	LIMESTONE
48 295	TX	LIPSCOMB
48 297	TX	LIVE OAK
48 299	TX	LLANO
48 301	TX	LOVING
48 303	TX	LUBBOCK
48 305	TX	LYNN
48 307	TX	MCCULLOCH
48 309	TX	MCLENNAN
48 311	TX	MCMULLEN
48 313	TX	MADISON
48 315	TX	MARION
48 317	TX	MARTIN
48 319	TX	MASON
48 321	TX	MATAGORDA
48 323	TX	MAVERICK
48 325	TX	MEDINA
48 327	TX	MENARD
48 329	TX	MIDLAND
48 331	TX	MILAM
48 333	TX	MILLS
48 335	TX	MITCHELL
48 337	TX	MONTAGUE
48 339	TX	MONTGOMERY

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
48 341	TX	MOORE
48 343	TX	MORRIS
48 345	TX	MOTLEY
48 347	TX	NACOGDOCHES
48 349	TX	NAVARRO
48 351	TX	NEWTON
48 353	TX	NOLAN
48 355	TX	NUECES
48 357	TX	OCHILTREE
48 359	TX	OLDHAM
48 361	TX	ORANGE
48 363	TX	PALO PINTO
48 365	TX	PANOLA
48 367	TX	PARKER
48 369	TX	PARMER
48 371	TX	PECOS
48 373	TX	POLK
48 375	TX	POTTER
48 377	TX	PRESIDIO
48 379	TX	RAINS
48 381	TX	RANDALL
48 383	TX	REAGAN
48 385	TX	REAL
48 387	TX	RED RIVER
48 389	TX	REEVES
48 391	TX	REFUGIO
48 393	TX	ROBERTS
48 395	TX	ROBERTSON
48 397	TX	ROCKWALL
48 399	TX	RUNNELS
48 401	TX	RUSK
48 403	TX	SABINE
48 405	TX	SAN AUGUSTINE
48 407	TX	SAN JACINTO
48 409	TX	SAN PATRICIO
48 411	TX	SAN SABA
48 413	TX	SCHLEICHER
48 415	TX	SCURRY
48 417	TX	SHACKELFORD
48 419	TX	SHELBY
48 421	TX	SHERMAN
48 423	TX	SMITH
48 425	TX	SOMERVELL
48 427	TX	STARR
48 429	TX	STEPHENS

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
48 431	TX	STERLING
48 433	TX	STONEWALL
48 435	TX	SUTTON
48 437	TX	SWISHER
48 439	TX	TARRANT
48 441	TX	TAYLOR
48 443	TX	TERRELL
48 445	TX	TERRY
48 447	TX	THROCKMORTON
48 449	TX	TITUS
48 451	TX	TOM GREEN
48 453	TX	TRAVIS
48 455	TX	TRINITY
48 457	TX	TYLER
48 459	TX	UPSHUR
48 461	TX	UPTON
48 463	TX	UVALDE
48 465	TX	VAL VERDE
48 467	TX	VAN ZANDT
48 469	TX	VICTORIA
48 471	TX	WALKER
48 473	TX	WALLER
48 475	TX	WARD
48 477	TX	WASHINGTON
48 479	TX	WEBB
48 481	TX	WHARTON
48 483	TX	WHEELER
48 485	TX	WICHITA
48 487	TX	WILBARGER
48 489	TX	WILLACY
48 491	TX	WILLIAMSON
48 493	TX	WILSON
48 495	TX	WINKLER
48 497	TX	WISE
48 499	TX	WOOD
48 501	TX	YOAKUM
48 503	TX	YOUNG
48 505	TX	ZAPATA
48 507	TX	ZAVALA

# UTAH

49 001	UT	BEAVER
49 003	UT	BOX ELDER
49 005	UT	CACHE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
49 007	UT	CARBON
49 009	UT	DAGGETT
49 011	UT	DAVIS
49 013	UT	DUCHESNE
49 015	UT	EMERY
49 017	UT	GARFIELD
49 019	UT	GRAND
49 021	UT	IRON
49 023	UT	JUAB
49 025	UT	KANE
49 027	UT	MILLARD
49 029	UT	MORGAN
49 031	UT	PIUTE
49 033	UT	RICH
49 035	UT	SALT LAKE
49 037	UT	SAN JUAN
49 039	UT	SANPETE
49 041	UT	SEVIER
49 043	UT	SUMMIT
49 045	UT	TOOELE
49 047	UT	UINTAH
49 049	UT	UTAH
49 051	UT	WASATCH
49 053	UT	WASHINGTON
49 055	UT	WAYNE
49 057	UT	WEBER

#### VERMONT

50 001	VT	ADDISON
50 003	VT	BENNINGTON
50 005	VT	CALEDONIA
50 007	VT	CHITTENDEN
50 009	VT	ESSEX
50 011	VT	FRANKLIN
50 013	VT	GRAND ISLE
50 015	VT	LAMOILLE
50 017	VT	ORANGE
50 019	VT	ORLEANS
50 021	VT	RUTLAND
50 023	VT	WASHINGTON
50 025	VT	WINDHAM
50 027	VT	WINDSOR

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
<b>VIRGINIA</b>		
51 001	VA	ACCOMACK
51 003	VA	ALBEMARLE
51 005	VA	ALLEGHANY
51 007	VA	AMELIA
51 009	VA	AMHERST
51 011	VA	APPOMATTOX
51 013	VA	ARLINGTON
51 015	VA	AUGUSTA
51 017	VA	BATH
51 019	VA	BEDFORD
51 021	VA	BLAND
51 023	VA	BOTETOURT
51 025	VA	BRUNSWICK
51 027	VA	BUCHANAN
51 029	VA	BUCKINGHAM
51 031	VA	CAMPBELL
51 033	VA	CAROLINE
51 035	VA	CARROLL
51 036	VA	CHARLES CITY
51 037	VA	CHARLOTTE
51 041	VA	CHESTERFIELD
51 043	VA	CLARKE
51 045	VA	CRAIG
51 047	VA	CULPEPER
51 049	VA	CUMBERLAND
51 051	VA	DICKENSON
51 053	VA	DINWIDDIE
51 057	VA	ESSEX
51 059	VA	FAIRFAX
51 061	VA	FAUQUIER
51 063	VA	FLOYD
51 065	VA	FLUVANNA
51 067	VA	FRANKLIN
51 069	VA	FREDERICK
51 071	VA	GILES
51 073	VA	GLOUCESTER
51 075	VA	GOOCHLAND
51 077	VA	GRAYSON
51 079	VA	GREENE
51 081	VA	GREENSVILLE
51 083	VA	HALIFAX
51 085	VA	HANOVER
51 087	VA	HENRICO

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
51 089	VA	HENRY
51 091	VA	HIGHLAND
51 093	VA	ISLE OF WIGHT
51 095	VA	JAMES CITY
51 097	VA	KING AND QUEEN
51 099	VA	KING GEORGE
51 101	VA	KING WILLIAM
51 103	VA	LANCASTER
51 105	VA	LEE
51 107	VA	LOUDOUN
51 109	VA	LOUISA
51 111	VA	LUNENBURG
51 113	VA	MADISON
51 115	VA	MATHEWS
51 117	VA	MECKLENBURG
51 119	VA	MIDDLESEX
51 121	VA	MONTGOMERY
51 125	VA	NELSON
51 127	VA	NEW KENT
51 131	VA	NORTHAMPTON
51 133	VA	NORTHUMBERLAND
51 135	VA	NOTTOWAY
51 137	VA	ORANGE
51 139	VA	PAGE
51 141	VA	PATRICK
51 143	VA	PITTSYLVANIA
51 145	VA	POWHATAN
51 147	VA	PRINCE EDWARD
51 149	VA	PRINCE GEORGE
51 153	VA	PRINCE WILLIAM
51 155	V	PULASKI
51 157	VA	RAPPAHANNOCK
51 159	VA	RICHMOND
51 161	VA	ROANOKE
51 163	VA	ROCKBRIDGE
51 165	VA	ROCKINGHAM
51 167	VA	RUSSELL
51 169	VA	SCOTT
51 171	VA	SHENANDOAH
51 173	VA	SMYTH
51 175	VA	SOUTHAMPTON
51 177	VA	SPOTSYLVANIA
51 179	VA	STAFFORD
51 181	VA	SURRY
51 183	VA	SUSSEX

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
51 185	VA	TAZEWELL
51 187	VA	WARREN
51 191	VA	WASHINGTON
51 193	VA	WESTMORELAND
51 195	VA	WISE
51 197	VA	WYTHE
51 199	VA	YORK
51 510	VA	ALEXANDRIA CITY
51 515	VA	BEDFORD CITY
51 520	VA	BRISTOL CITY
51 530	VA	BUENA VISTA CITY
51 540	VA	CHARLOTTESVILLE CITY
51 550	VA	CHESAPEAKE CITY
51 560	VA	CLIFTON FORGE CITY
51 570	VA	COLONIAL HEIGHTS CTY
51 580	VA	COVINGTON CITY
51 590	VA	DANVILLE CITY
51 595	VA	EMPORIA CITY
51 600	VA	FAIRFAX CITY
51 610	VA	FALLS CHURCH CITY
51 620	VA	FRANKLIN CITY
51 630	VA	FREDERICKSBURG CITY
51 640	VA	GALAX CITY
51 650	VA	HAMPTON CITY
51 660	VA	HARRISONBURG CITY
51 670	VA	HOPEWELL CITY
51 678	VA	LEXINGTON CITY
51 680	VA	LYNCHBURG CITY
51 683	VA	MANASSAS CITY
51 685	VA	MANASSAS PARK CITY
51 690	VA	MARTINSVILLE CITY
51 700	VA	NEWPORT NEWS CITY
51 710	VA	NORFOLK CITY
51 720	VA	NORTON CITY
51 730	VA	PETERSBURG CITY
51 735	VA	POQUOSON CITY
51 740	VA	PORTSMOUTH CITY
51 750	VA	RADFORD CITY
51 760	VA	RICHMOND CITY
51 770	VA	ROANOKE CITY
51 775	VA	SALEM CITY
51 780	VA	SOUTH BOSTON CITY
51 790	VA	STAUNTON CITY
51 800	VA	SUFFOLK CITY
51 810	VA	VIRGINIA BEACH CITY

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
51 820	VA	WAYNESBORO CITY
51 830	VA	WILLIAMSBURG CITY
51 840	VA	WINCHESTER CITY

#### WASHINGTON

53 001	WA	ADAMS
53 003	WA	ASOTIN
53 005	WA	BENTON
53 007	WA	CHELAN
53 009	WA	CLALLAM
53 011	WA	CLARK
53 013	WA	COLUMBIA
53 015	WA	COWLITZ
53 017	WA	DOUGLAS
53 019	WA	FERRY
53 021	WA	FRANKLIN
53 023	WA	GARFIELD
53 025	WA	GRANT
53 027	WA	GRAYS HARBOR
53 029	WA	ISLAND
53 031	WA	JEFFERSON
53 033	WA	KING
53 035	WA	KITSAP
53 037	WA	KITTITAS
53 039	WA	KLICKITAT
53 041	WA	LEWIS
53 043	WA	LINCOLN
53 045	WA	MASON
53 047	WA	OKANOGAN
53 049	WA	PACIFIC
53 051	WA	PEND OREILLE
53 053	WA	PIERCE
53 055	WA	SAN JUAN
53 057	WA	SKAGIT
53 059	WA	SKAMANIA
53 061	WA	SNOHOMISH
53 063	WA	SPOKANE
53 065	WA	STEVENS
53 067	WA	THURSTON
53 069	WA	WAHIAKUM
53 071	WA	WALLA WALLA
53 073	WA	WHATCOM
53 075	WA	WHITMAN
53 077	WA	YAKIMA

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
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#### WEST VIRGINIA

54 001	WV	BARBOUR
54 003	WV	PERKELEY
54 005	WV	BOONE
54 007	WV	BRAXTON
54 009	WV	BROOKE
54 011	WV	CABELL
54 013	WV	CALHOUN
54 015	WV	CLAY
54 017	WV	DODDRIDGE
54 019	WV	FAYETTE
54 021	WV	GILMER
54 023	WV	GRANT
54 025	WV	GREENBRIER
54 027	WV	HAMPSHIRE
54 029	WV	HANCOCK
54 031	WV	HARDY
54 033	WV	HARRISON
54 035	WV	JACKSON
54 037	WV	JEFFERSON
54 039	WV	KANAWHA
54 041	WV	LEWIS
54 043	WV	LINCOLN
54 045	WV	LOGAN
54 047	WV	MCDOWELL
54 049	WV	MARION
54 051	WV	MARSHALL
54 053	WV	MASON
54 055	WV	MERCER
54 057	WV	MINERAL
54 059	WV	MINGO
54 061	WV	MONONGALIA
54 063	WV	MONROE
54 065	WV	MORGAN
54 067	WV	NICHOLAS
54 069	WV	OHIO
54 071	WV	PENDLETON
54 073	WV	PLEASANTS
54 075	WV	POCAHONTAS
54 077	WV	PRESTON
54 079	WV	PUTNAM
54 081	WV	RALEIGH
54 083	WV	RANDOLPH
54 085	WV	RITCHIE

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
54 087	WV	ROANE
54 089	WV	SUMMERS
54 091	WV	TAYLOR
54 093	WV	TUCKER
54 095	WV	TYLER
54 097	WV	UPSHUR
54 099	WV	WAYNE
54 101	WV	WEBSTER
54 103	WV	WETZEL
54 105	WV	WIRT
54 107	WV	WOOD
54 109	WV	WYOMING

# WISCONSIN

55 001	WI	ADAMS
55 003	WI	ASHLAND
55 005	WI	BARRON
55 007	WI	BAYFIELD
55 009	WI	BROWN
55 011	WI	BUFFALO
55 013	WI	BURNETT
55 015	WI	CALUMET
55 017	WI	CHIPPEWA
55 019	WI	CLARK
55 021	WI	COLUMBIA
55 023	WI	CRAWFORD
55 025	WI	DANE
55 027	WI	DODGE
55 029	WI	DOOR
55 031	WI	DOUGLAS
55 033	WI	DUNN
55 035	WI	EAU CLAIRE
55 037	WI	FLORENCE
55 039	WI	FOND DU LAC
55 041	WI	FOREST
55 043	WI	GRANT
55 045	WI	GREEN
55 047	WI	GREEN LAKE
55 049	WI	IOWA
55 051	WI	IRON
55 053	WI	JACKSON
55 055	WI	JEFFERSON
55 057	WI	JUNEAU
55 059	WI	KENOSHA

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
55 061	WI	KEWAUNEE
55 063	WI	LA CROSSE
55 065	WI	LAFAYETTE
55 067	WI	LANGLADE
55 069	WI	LINCOLN
55 071	WI	MANITOWOC
55 073	WI	MARATHON
55 075	WI	MARINETTE
55 077	WI	MARQUETTE
55 078	WI	MENOMINEE
55 079	WI	MILWAUKEE
55 081	WI	MONROE
55 083	WI	OCONTO
55 085	WI	ONEIDA
55 087	WI	OUTAGAMIE
55 089	WI	OZAUKEE
55 091	WI	PEPIN
55 093	WI	PIERCE
55 095	WI	POLK
55 097	WI	PORTAGE
55 099	WI	PRICE
55 101	WI	RACINE
55 103	WI	RICHLAND
55 105	WI	ROCK
55 107	WI	RUSK
55 109	WI	ST. CROIX
55 111	WI	SAUK
55 113	WI	SAWYER
55 115	WI	SHAWANO
55 117	WI	SHEBOYGAN
55 119	WI	TAYLOR
55 121	WI	TREMPEALEAU
55 123	WI	VERNON
55 125	WI	VILAS
55 127	WI	WALWORTH
55 129	WI	WASHBURN
55 131	WI	WASHINGTON
55 133	WI	WAUKESHA
55 135	WI	WAUPACA
55 137	WI	WAUSHARA
55 139	WI	WINNEBAGO
55 141	WI	WOOD

FIPS ST CNTY	STATE ABBRV	COUNTY NAME
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**WYOMING**

56 001	WY	ALBANY
56 003	WY	BIG HORN
56 005	WY	CAMPBELL
56 007	WY	CARBON
56 009	WY	CONVERSE
56 011	WY	CROOK
56 013	WY	FREMONT
56 015	WY	GOSHEN
56 017	WY	HOT SPRINGS
56 019	WY	JOHNSON
56 021	WY	LARAMIE
56 023	WY	LINCOLN
56 025	WY	NATRONA
56 027	WY	NIOBRARA
56 029	WY	PARK
56 031	WY	PLATTE
56 033	WY	SHERIDAN
56 035	WY	SUBLETTE
56 037	WY	SWEETWATER
56 039	WY	TETON
56 041	WY	UINTA
56 043	WY	WASHAKIE
56 045	WY	WESTON



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