
Compressed Mortality File

1968-88

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ASCII Version



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I. Introduction

The Compressed Mortality File 1968-88 (CMF 1968-88) is a county-level mortality and population data file for the United States spanning the years 1968-88. The file permits the calculation of national, state, and county death rates for race-sex-age groups of interest. The mortality file contains only a select set of key analysis variables, namely, 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. The national, state, and county population estimates on the CMF are from the U.S. Bureau of the Census. The age, race, and sex detail of the population file matches that of the mortality file.

II. NCHS Data Use Agreement

The Public Health Service Act (Section 308) (d) provides that the data collected by the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC), may be used only for the purpose of health statistical reporting and analysis.

Any effort to determine the identity of any reported case is prohibited by this law.

NCHS does all it can to assure that the identity of data subjects cannot be disclosed. All direct identifiers, as well as any characteristics that might lead to identification, are omitted from the dataset. Any intentional identification or disclosure of a person or establishment violates the assurances of confidentiality given to the providers of the information. Therefore, users will:

1. Use the data in these datasets for statistical reporting and analysis only.
2. Make no use of the identity of any person or establishment discovered inadvertently and advise the Director, NCHS, of any such discovery.
3. Not link these datasets with individually identifiable data from other NCHS or non-NCHS datasets.

III. Description of the Mortality Files

The mortality data, 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 records were condensed to 23-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) codes¹. Cause-of-death for the years 1979-88 is classified in accordance with the *International Classification of Disease, Ninth Revision* (ICD-9) codes². For a further description of the ICD codes see Appendix B or Volume II of the annual mortality volumes produced by the NCHS, such as *Vital Statistics of the United States, 1978, Volume II-Mortality, Part A*,³ or *Vital Statistics of the United States, 1988, Volume II-Mortality, Part A*⁴. For a list of comparable ICD codes for the 8th and 9th revisions and estimated comparability ratios, see Appendix B.

2. The fourth digit of the ICD code can assume the values 0-9 and blank. If the fourth digit is a "blank", it is a blank on this file. Care must be taken when reading the file to distinguish between blanks and zeros.
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. For 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 *O42-*O44, 796.8) cited as a cause-of-death (underlying or non-underlying cause), these records were assigned a "missing" place of residence code (FIPS code = 13999). See Appendix E.
5. The FIPS state and county codes contain leading zeros in both the 2-byte state code and the 3-byte county code.

File Specifications for the Mortality Files

File names	Years	Number of records	Record Length	Format
MORT6878	1968-78	8,774,864	23	ASCII
MORT7988	1979-88	10,065,467	23	ASCII

The files are sorted by locations 6-9, 1-5, 10, 11-12, 13-16.

Location	Field Size	Item and Code Outline	Format
		<u>FIPS Codes</u> (See Appendices E and F)	
1-2	2	FIPS state code	Numeric
3-5	3	FIPS county code	Numeric
6-9	4	<u>Year of death</u>	Numeric
10	1	<u>Race-sex</u>	Numeric
		1 White male	
		2 White female	
		3 Black male	
		4 Black female	
		5 Other male	
		6 Other female	
11-12	2	<u>Age at death</u>	Numeric
		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	

Location	Field Size	Item and Code Outline	Format
13-16	4	<u>ICD code for underlying cause-of-death</u> 1968-78: ICDA-8 1979-88: ICD-9	Numeric
17-19	3	<u>Cause-of-death recode</u> (See Appendix B) 1968-78: 69 Cause-of-death recode 1979-88: 72 Cause-of-death recode	Numeric
20-23	4	<u>Number of deaths</u>	Numeric

IV. Description of the Population File

There are national, state, and county population estimates on the population file of the CMF. The population estimates are based on U.S. Bureau of the Census estimates of U.S. national, state, and county resident populations. The 1968-69 national estimates and all of 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 (modified age-race-sex) 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 more detailed description is provided in Appendix D.

Specific details

1. There is one record on the file for each geographic unit (total U.S., state, county) x year x race-sex group.
2. Modifications of the population estimates 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. For non-censal years prior to 1992, the NCHS Division of Vital Statistics uses national population estimates rounded to the nearest 1,000 to calculate published death rates. On the CMF, the national population estimates for 1968-69 and 1971-79 are rounded to the nearest 1,000 in accordance with this practice. However, this means that calculation of rates for aggregate age, race, and/or sex groups involves using population estimates that were rounded before aggregation rather than after aggregation. As a result, national death rates for aggregate groups calculated using the rounded estimates on the CMF may differ slightly from those published by NCHS. The national population estimates for 1981-88 on the CMF are not rounded so that the user can round them after aggregating across subgroups and avoid the rounding error problem.
3. National, state, and county population estimates can be identified by using the FIPS code or the record type variable in location 140. 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" (see Appendix E). The record type variable assumes the value "1" for national records, "2" for state records, and "3" for county records.

It is necessary to provide separate sets of estimates for each geographic level because the methodology used to produce the intercensal estimates (1971-79 and 1981-88) did not smooth them sufficiently. Thus, for the intercensal years, 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 estimates. For these years, 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.

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

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

6. Brief description of population estimates for individual years

1968-69 population estimates - National population estimates are U.S. Bureau of the Census intercensal estimates of the July 1 resident population. 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 to correct: 1) errors discovered in the data, 2) race misclassification - persons of Hispanic origin who reported their race as "other" were recoded 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 prior to 1981. 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, with the proportion obtained from the

July 1, 1980 city/county estimates. The April 1 population estimates for the counties containing the three cities were reduced by the estimated April 1 city populations.

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

File Specifications for the Population Files

File name	Years	Number of records	Record length	Format
POP6878	1968-78	206,712	140	ASCII
POP7988	1979-88	189,966	140	ASCII

The files are sorted by locations 6-9, 1-5, 10.

Location	Field Size	Item and Code Outline	Format
		<u>FIPS codes</u> (See Appendices E and F)	
1-2	2	FIPS state code	Numeric
3-5	3	FIPS county code	Numeric
6-9	4	<u>Year</u>	Numeric
10	1	<u>Race-sex</u>	Numeric
		1 White male	
		2 White female	
		3 Black male	
		4 Black female	
		5 Other male	
		6 Other female	
11-18	8	<u>Number of live births</u>	Numeric
19-26	8	<u>Population in age group: 1-4 years</u>	Numeric
27-34	8	<u>Population in age group: 5-9 years</u>	Numeric
35-42	8	<u>Population in age group: 10-14 years</u>	Numeric
43-50	8	<u>Population in age group: 15-19 years</u>	Numeric
51-58	8	<u>Population in age group: 20-24 years</u>	Numeric
59-66	8	<u>Population in age group: 25-34 years</u>	Numeric
67-74	8	<u>Population in age group: 35-44 years</u>	Numeric
75-82	8	<u>Population in age group: 45-54 years</u>	Numeric
83-90	8	<u>Population in age group: 55-64 years</u>	Numeric

Location	Field Size	Item and Code Outline	Format
91-98	8	<u>Population in age group: 65-74 years</u>	Numeric
99-106	8	<u>Population in age group: 75-84 years</u>	Numeric
107-114	8	<u>Population in age group: 85+ years</u>	Numeric
115-139	25	<u>County name</u> (See Appendix F)	Character
140	1	<u>Record type</u> 1 National population record 2 State population record 3 County population record	Numeric

APPENDIX A

Technical Details for Mortality Data

Technical details for the mortality data can be found in Volume II, Part A of the *Vital Statistics of the United States* published annually by NCHS. The information below was derived from these Technical Appendices.

Sources of mortality data

Mortality statistics for 1968-88, except for 1972 (based on a half sample), are based on information from records for all deaths occurring in the United States. The death registration system of the United States encompasses the 50 States, the District of Columbia, New York city (which is independent of New York State for purpose of death registration), Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands. The CMF only includes records for deaths that occur in the United States, that is, within the aggregate of the 50 states (including New York City) and the District of Columbia.

Procedures used by NCHS to collect death statistics have changed over the years. Before 1971, tabulations of deaths were based solely on information obtained by NCHS from copies of the original death 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 provided NCHS with computer tapes of data coded according to NCHS specifications and provided to NCHS through the Vital Statistics Cooperative Program. By 1988, 27 states provided such data. Some states code medical items for other states under contract.

For the years prior to 1988, 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. 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 have been published ⁵.

Standard certificates

The U.S. Standard Certificate of Death, issued by the Public Health Service, has

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 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.

Classification of data

The principal value of vital statistics data is realized through the presentation of rates, which are computed by relating the vital events of a class to the population of a similarly defined class. Vital statistics and population statistics must therefore be classified according to similarly defined systems and tabulated in comparable groups. Even when the variables common to both, such as geographic area, age, sex, and race, have been similarly classified and tabulated, differences between the enumeration method of obtaining population data and the registration method of obtaining vital statistics data may result in significant discrepancies.

Classification by occurrence and residence. Mortality data on the CMF are by place of residence. Resident mortality statistics for the United States include all deaths occurring in the United States, except deaths of "nonresidents of the United States". "Deaths of nonresidents of the United States" refers to deaths that occur in the United States of nonresident aliens, nationals residing abroad, and residents of Puerto Rico, the Virgin Islands, Guam, and other territories of the United States.

Geographic classification. 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.

Classification of 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 should be excluded.

Classification of race. There are three race categories on the CMF: 1) white, 2) black, and 3) all other races. These three categories were obtained by collapsing the more detailed race categories coded from the death certificate. The white category

includes, in addition to persons reported as white, those reported as Mexican, Puerto Rican, Cuban, and all other Caucasians. The all other races category includes American Indian (American, Alaskan, Canadian, Eskimo, and Aleut), Chinese, Hawaiian, Japanese, Filipino, Other Asian or Pacific Islander, and Other.

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.

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. For 1978, 0.1 percent of the total deaths had race not stated; for 1988, 0.2 percent of the total deaths had race not stated.

Cause-of-death

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"⁶. 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.

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.

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 inter-coder 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.

Quality of data

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

Errors in data due to amended records. Numbers of deaths occurring in Alaska for 1988 are in error for all causes of death combined and for selected causes of death because NCHS did not receive changes resulting from amended records. An estimate of the effect of these omissions can be derived by comparing the NCHS counts of records processed through the VSCP with counts prepared by Alaska (see Table 1). Differences are concentrated among selected causes of death, principally Symptoms, signs, and ill-defined conditions (ICD-9 Nos. 780-799) and external causes.

Quality of reporting of cause-of-death. 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 NCHS⁷, 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. 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. 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.

Table 1. Numbers of deaths and ratios of deaths for selected causes according to Alaska and NCHS, 1990

Causes	ICD Codes	Number of deaths		Ratio
		Alaska	NCHS	AK/NCHS
All causes		2214	2216	1.00
Symptoms, signs, and ill-defined conditions	780-799	48	54	0.89
Motor vehicle accidents	E810-825	118	102	1.16
All other accidents	E800-809 E826-849	277	344	0.81
Suicide	E950-959	122	71	1.72
Homicide and legal intervention	E960-978	45	31	1.45
All other external causes	E980-999	2	6	0.33

*Deaths are by place of occurrence and include deaths to nonresidents.

Quality control procedures.

1). Demographic items on the death certificate-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.

2) 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, and New York City, 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.")

3) 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 assignment¹². Further, conditions specified on a list of infrequent or rare causes of death are confirmed by the certifier or a State Health Officer.

APPENDIX B

Cause-of-Death Coding: ICDA-8 and ICD-9

International Classification of Diseases

ICDA-8. For the data years 1968-78, cause-of-death data were coded in accordance with the Eighth Revision International Classification of Diseases, Adapted for Use in the United States (ICDA) ¹, which is based on the 1965 Revision of the International Classification of Diseases (ICD). The ICDA gives greater detail and specificity in some categories than is provided by the Eighth Revision of the ICD. Complete correspondence between the ICDA and ICD was maintained at the three-digit level, but new four-digit subdivisions were created in various parts of the ICDA. Where necessary, existing four-digit subdivisions were renumbered to accommodate the additional subcategories in logical sequence. In the ICDA, subdivisions which do not correspond exactly with the ICD are identified by asterisks.

ICD-9. For the data years 1979-88, cause-of-death data were coded in accordance with the 1975 Revision International Classification of Diseases, generally referred to as the Ninth Revision (ICD-9) ². Since the implementation of ICD-9, several coding changes have been introduced. The more important changes are discussed below. For data years 1981-86, a change was made in the coding of acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) infection. 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-111/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." For the 1988 data year, minor content changes were made to the HIV infection codes. Detailed discussions of these changes may be found in the Technical Appendix of the *Vital Statistics of the United States, Volume II, Part A* for each year.

Tabulation lists of underlying cause-of-death

ICDA-8. In addition to specifying that the ICD be used, the World Health Organization recommended special lists for mortality tabulations. These recommended

tabulation lists were modified by NCHS to form the Each Cause list, the List of 281 Selected Causes of Death, the List of 69 Selected Causes of Death (see Table 2), and the List of 34 Selected Causes of Death. The 69 Cause-of-death codes are included on the CMF; definitions of these codes are provided in a table below.

ICD-9. 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 system recommended for tabulating data in the Ninth Revision allows countries to construct their own mortality tabulation lists from the rubrics of the WHO Basic Tabulation List (BTL).

The BTL recommended under the Ninth Revision consists of 57 two-digit rubrics that sum 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 sum 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 47 through 56 (nature-of-injury causes) 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 is not used 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.

NCHS developed five lists of causes for tabulation of mortality data: The Each-Cause List, List of 282 Selected Causes of Death, List of 72 Selected Causes of Death (see Table 3), List of 61 Selected Causes of Infant Death, and List of 34 Selected Causes of Death. 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. These lists were designed to be as comparable as possible with the NCHS lists used under the Eighth Revision. However, complete comparability could not always be achieved.

Comparability of ICDA-8 and ICD-9

Each revision of the ICD has produced some break in comparability of cause-of-death statistics. To measure the extent of discontinuity in Cause-of-death statistics resulting from the introduction of the Ninth Revision, a dual coding study was undertaken that compared the coding under the Ninth and the Eighth Revisions. The results of the study for the List of 72 Selected Causes of Death has been published⁸. The results are summarized in Table 4.

Table 2. Definitions of 69 cause-of-death recode

69 Recode	ICD-8 Cause-of-Death Codes Represented	Title
010	004,006	Bacillary dysentery and amebiasis
020	008,009	Enteritis and other diarrheal diseases
040	010-012	Tuberculosis of respiratory system
050	013-019	Tuberculosis, other forms
060	033	Whooping cough
070	034	Streptococcal sore throat and scarlet fever
080	036	Meningococcal infections
090	038	Septicemia
100	040-043	Acute poliomyelitis
110	055	Measles
120	090-097	Syphilis and its sequelae
130	Remainder of 000-136	Other infective and parasitic diseases
150	140-149	Malignant neoplasms of buccal cavity and pharynx
160	150-159	Malignant neoplasms of digestive organs and peritoneum
170	160-163	Malignant neoplasms of respiratory system
180	174	Malignant neoplasms of breast
190	180-187	Malignant neoplasms of genital organs
200	188,189	Malignant neoplasms of urinary organs
210	170-173, 190-199	Malignant neoplasms of all other and unspecified sites
220	204-207	Leukemia
230	200-203, 208, 209	Other neoplasms of lymphatic and hematopoietic tissues
240	210-239	Benign neoplasms and neoplasms of unspecified nature
250	250	Diabetes mellitis
260	260-269	Avitaminoses and other nutritional deficiencies
270	280-285	Anemias
280	320	Meningitis
310	390-398	Active rheumatic fever and chronic rheumatic heart disease

Table 2 (Contd..)

69 Recode	ICD-8 Cause-of-Death Codes Represented	Title
330	404	Hypertensive heart and renal disease
350	410	Acute myocardial infarction
360	411	Other acute and subacute forms of ischemic heart disease
370	412	Chronic ischemic heart disease
380	413	Angina pectoris
390	424, 428	Chronic diseases of endocardium and other myocardial insufficiencies
400	420-423, 425-427, 429	All other forms of heart disease
410	400, 401, 403	Hypertension
430	431	Cerebral hemorrhage
440	433	Cerebral thrombosis
450	434	Cerebral embolism
460	430, 432, 435-438	All other cerebrovascular accidents
470	440	Atherosclerosis
480	441-448	Other diseases of arteries, arterioles, and capillaries
490	466	Acute bronchitis and bronchiolitis
510	470-474	Influenza
520	480-486	Pneumonia
540	490, 491	Chronic and unqualified bronchitis
550	492	Emphysema
560	493	Asthma
570	531-533	Peptic ulcer
580	540-543	Appendicitis
590	550-553, 560	Hernia and intestinal obstruction
600	571	Cirrhosis of liver
610	574, 575	Cholelithiasis, cholecystitis, and cholangitis
630	580, 581	Acute nephritis and nephrotic syndrome
640	582-584	Chronic and unspecified nephritis and renal sclerosis
650	590	Infections of kidney
660	600	Hyperplasia of prostate
680	640-645	Abortions
690	630-639, 650-678	Other complications of pregnancy, childbirth, and the puerperium
700	740-759	Congenital anomalies
720	764-768, 772, 776	Birth injury, difficult labor, and other anoxic and hypoxic conditions
730	Remainder of 760-778	Other causes of mortality in early infancy

Table 2 (contd..)

69 Recode	ICD-8 Cause-of-Death Codes Represented	Title
740	780-796	Symptoms and ill-defined conditions
750	Residual	All other diseases
770	E810-E823	Motor vehicle accidents
780	E800-E807, E825-E949	All other accidents
790	E950-E959	Suicide
800	E960-E978	Homicide
810	E980-E999	Other external causes

Table 3. Definition of 72 cause-of-death recode

72 Recode	ICD-9 Cause-of-Death Codes Represented	Title
010	004,006	Shigellosis and amebiasis
020	007-009	Certain other intestinal infections
040	010-012	Tuberculosis of respiratory system
050	013-018	Other tuberculosis
060	033	Whooping cough
070	034-035	Streptococcal sore throat, scarlatina, and erysipelas
080	036	Meningococcal infection
090	038	Septicemia
100	045	Acute poliomyelitis
110	055	Measles
120	070	Viral hepatitis
130	090-097	Syphilis
140	001-003, 005, 020-032, 037, 039-041, 046-054, 056-066, 071-088, 098-139	All other infectious and parasitic diseases
160	140-149	Malignant neoplasms of lip, oral cavity, and pharynx
170	150-159	Malignant neoplasms of digestive organs and peritoneum
180	160-165	Malignant neoplasms of respiratory and intrathoracic organs
190	174-175	Malignant neoplasm of breast
200	179-187	Malignant neoplasms of genital organs
210	188-189	Malignant neoplasms of urinary organs
220	170-173,190-199	Malignant neoplasms of all other and unspecified sites
230	204-208	Leukemia
240	200-203	Other malignant neoplasms of lymphatic and hematopotent tissues
250	210-239	Benign neoplasms, carcinoma in situ, and neoplasms of uncertain nature
260	250	Diabetes mellitus
270	260-269	Nutritional deficiencies
280	280-285	Anemias
290	320-322	Meningitis

Table 3 (contd..)

72 Recode	ICD-9 Cause-of-Death Codes Represented	Title
320	390-398	Rheumatic fever and rheumatic heart disease
330	402	Hypertensive heart disease
340	404	Hypertensive heart and renal disease
360	410	Acute myocardial infarction
370	411	Other acute and subacute forms of ischemic heart disease
380	413	Angina pectoris
390	412, 414	Old myocardial infarction and other forms of chronic ischemic heart disease
400	424	Other diseases of endocardium
410	415-423, 425-429	All other forms of heart disease
420	401, 403	Hypertension with or without renal disease
440	431-432	Intracerebral and other intracranial hemorrhage
450	434.0, 434.9	Cerebral thrombosis and unspecified occlusion of cerebral arteries
460	434.1	Cerebral embolism
470	430, 433, 435-438	All other and late effects of cerebrovascular diseases
480	440	Atherosclerosis
490	441-448	Other diseases of arteries, arterioles, capillaries
500	466	Acute bronchitis and bronchiolitis
520	480-486	Pneumonia
530	487	Influenza
550	490-491	Bronchitis, chronic and unspecified
560	492	Emphysema
570	493	Asthma
580	494-496	Other chronic obstructive pulmonary diseases and allied conditions
590	531-533	Ulcer of stomach and duodenum
600	540-543	Appendicitis
610	550-553, 560	Hernia of abdominal cavity and intestinal obstruction without mention of hernia
620	571	Chronic liver disease and cirrhosis
630	574-575	Cholelithiasis and other disorders of gall bladder
650	580-581	Acute glomerulonephritis and nephrotic syndrome

Table 3(contd..)

72 Recode	ICD-9 Cause-of-Death Codes Represented	Title
660	582-583, 587	Chronic glomerulonephritis, nephritis and nephropathy, not specified as acute or chronic, and renal sclerosis, unspecified
670	584-586, 588-589	Renal failure, disorders resulting from impaired renal function, and small kidney of unknown cause
680	590	Infections of kidney
690	600	Hyperplasia of prostate
710	630-638	Pregnancy with abortive outcome
720	640-676	Other complications of pregnancy, childbirth, and the puerperium
730	740-759	Congenital anomalies
750	767-769	Birth trauma, intrauterine hypoxia, birth asphyxia, and respiratory distress syndrome
760	760-766, 770-779	Other conditions originating in the perinatal period
770	780-799	Symptoms, signs, and ill-defined conditions
780	Residual	All other diseases
800	E810-E825	Motor vehicle accidents
810	E800-E807, E826-E949	All other accidents and adverse effects
820	E950-E959	Suicide
830	E960-E978	Homicide and legal intervention
840	E980-E999	All other external causes

Table 4. 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 ¹	Error of the estimate of the ratio in (2)		95 percent con- fidence limits ²		
			Standard error	Relative standard error	Upper	Lower	
			(3)	(4)	(5)	(6)	
All causes		1.0000	
Shigellosis and amebiasis	004, 006	0.9818	0.0378	3.9	1.0559	0.9077	
Certain other intestinal infections	007-009	0.1821	0.0207	11.4	0.2227	0.1415	
Tuberculosis	010-018	0.7668	0.0119	1.6	0.7901	0.7435	
Tuberculosis of respiratory system	010-012	0.8429	0.0146	1.7	0.8715	0.8143	
Other tuberculosis	013-018	0.5077	0.0167	3.3	0.5404	0.4750	
Whooping cough	033	0.8571	0.0000	0.0	0.8571	0.8571	
Streptococcal sore throat, scarlatina, and erysipelas	034-035	1.4286	0.0000	0.0	1.4286	1.4286	
Meningococcal infection	036	0.9788	0.0124	1.3	1.0030	0.9546	
Septicemia	038	0.8500	0.0180	2.1	0.8853	0.8147	
Acute poliomyelitis	045	0.5000	0.0000	0.0	0.5000	0.5000	
Measles	055	0.9167	0.0000	0.0	0.9167	0.9167	
Viral hepatitis	070	1.3986	0.0820	5.9	1.5593	1.2379	
Syphilis	090-097	1.0089	0.0259	2.6	1.0596	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 000-136	1.0321	0.0634	6.1	1.1563	0.9079
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140-208	1.0026	0.0017	0.2	1.0059	0.9993	
Malignant neoplasms of lip, oral cavity, and pharynx	140-149	1.0117	0.0087	0.9	1.0286	0.9948	
Malignant neoplasms of digestive organs and peritoneum	150-159	1.0330	0.0035	0.3	1.0398	1.0262	
Malignant neoplasms of respiratory and intrathoracic organs	160-165	1.0007	0.0033	0.3	1.0071	0.9943	
Malignant neoplasm of breast	174-175	1.0089	0.0022	0.2	1.0131	1.0047	
Malignant neoplasms of genital organs	179-187	1.0111	0.0031	0.3	1.0171	1.0051	
Malignant neoplasms of urinary organs	188-189	0.9924	0.0045	0.5	1.0011	0.9837	
Malignant neoplasms of all other and unspecified sites	170-173, 190-199	0.9557	0.0082	0.9	0.9718	0.9396	
Leukemia	204-208	1.0070	0.0056	0.6	1.0180	0.9960	
Other malignant neoplasms of lymphatic and hematopoietic tissues	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	1.2085	0.0261	2.2	1.2595	1.1575	
Diabetes mellitus	250	0.9991	0.0087	0.9	1.0162	0.9820	
Nutritional deficiencies	260-269	0.7167	0.0262	3.7	0.7680	0.6654	
Anemias	280-285	0.9296	0.0124	1.3	0.9538	0.9054	
Meningitis	320-322	0.9459	0.0163	1.7	0.9777	0.9141	
Major cardiovascular diseases	390-448	1.0069	0.0004	0.0	1.0076	1.0062	
Diseases of heart	390-398, 402, 404, 410-429	1.0126	0.0039	0.4	1.0202	1.0050	
Rheumatic fever and rheumatic heart disease	390-398	0.6648	0.0080	1.2	0.6804	0.6492	
Hypertensive heart disease	402	3.3022	0.0557	1.7	3.4114	3.1930	
Hypertensive heart and renal disease	404	1.2119	0.0438	3.6	1.2978	1.1260	
Ischemic heart disease	410-414	0.8784	0.0038	0.4	0.8859	0.8709	
Acute myocardial infarction	410	1.0003	0.0054	0.5	1.0108	0.9898	
Other acute and subacute forms of ischemic heart disease	411	1.2224	0.0661	5.4	1.3519	1.0929	
Angina pectoris	413	1.0484	0.0666	6.4	1.1789	0.9179	
Old myocardial infarction and other forms of chronic ischemic heart disease	412, 414	0.7533	0.0055	0.7	0.7640	0.7426	
Other diseases of endocardium	424, 428	1.2286	0.0227	1.8	1.2731	1.1841	
All other forms of heart disease	415-423, 425-429	2.5035	0.0257	1.0	2.5539	2.4531	
Hypertension with or without renal disease	401, 403	1.2703	0.0294	2.3	1.3280	1.2126	
Cerebrovascular diseases	430-438	1.0049	0.0066	0.7	1.0178	0.9920	
Intracerebral and other intracranial hemorrhage	431	0.9969	0.0068	0.7	1.0102	0.9836	
Cerebral thrombosis and unspecified occlusion of cerebral arteries	434.0, 434.9	1.0340	0.0222	2.1	1.0774	0.9906	

See footnotes at end of table.

Table 4 (Contd..)

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 comparability ratio ²	Error of the estimate of the ratio in (2)		95 percent confidence limits ²	
			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, 433, 435–438	430, 432, 435–438	0.9948	0.0061	0.6	1.0067 0.9829
Atherosclerosis	440	440	1.0649	0.0246	2.3	1.1130 1.0168
Other diseases of arteries, arterioles, and capillaries	441–448	441–448	0.7409	0.0098	1.3	0.7600 0.7218
Acute bronchitis and bronchiolitis	466	466	0.8888	0.0274	3.1	0.9425 0.8351
Pneumonia and influenza	480–487	470–474, 480–486	0.9264	0.0067	0.7	0.9394 0.9134
Pneumonia	480–486	480–486	0.9199	0.0076	0.8	0.9347 0.9051
Influenza	487	470–474	0.9714	0.0078	0.8	0.9866 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	0.9646 0.9120
Emphysema	492	492	0.9770	0.0127	1.3	1.0018 0.9522
Asthma	493	493	1.3544	0.0636	4.7	1.4790 1.2298
Other chronic obstructive pulmonary diseases and allied conditions	494–496	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	0.0264	2.6	1.0597 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	1.8920 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	760–779	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, 770–779	Remainder of 760–778	1.4639	0.0371	2.5	1.5367 1.3911
Symptoms, signs, and ill-defined conditions	780–799	780–796	0.9102	0.0121	1.3	0.9338 0.8866
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	1.0169 1.0065
All other accidents and adverse effects	E800–E807, E826–949	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	1.0115 0.9999
All other external causes	E980–E999	E980–E999	0.9675	0.0144	1.5	0.9957 0.9393

¹Ratio of estimated number of deaths assigned according to the Ninth Revision to deaths assigned according to the Eighth Revision.
²The 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.
³Chronic obstructive lung disease without mention of asthma, bronchitis, or emphysema (ICDA No. *519.3), 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 ICDA No. *519.3.

APPENDIX C

Computation of Rates

Population bases for computing rates

Except for infant and maternal mortality rates, the population used for computing rates is the resident population of the specified geographic area. Death rates generally are expressed as deaths per 100,000 resident population. See Appendix D for details about the population estimates.

Infant mortality rates 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^{9,10}. 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^{11,12}. Small numbers of infant deaths for specific groups can result in infant mortality rates subject to relatively large random variation.

In contrast to infant mortality rates based on live births, infant death rates, which are used 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. Infant death rates cannot be calculated from the CMF.

Maternal mortality rates are computed on the basis of the number of live births. The maternal mortality rate indicates the likelihood of a pregnant woman dying of maternal causes. Maternal mortality rates are calculated by dividing the number of maternal deaths in a calendar year by the number of live births registered for the same period and are presented as rates per 100,000 live births. 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.

Age-adjustment of death rates

Age-adjusted death rates are weighted averages of the age-specific death rates, where the weights represent the fixed population by age. They are used to compare mortality risk across groups and over time. Each rate 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 fixed

population. Age-adjusted rates should be viewed as constructs or indexes rather than as direct or actual measures of mortality risk. Age-adjusted death rates tabulated by NCHS have been computed using the relative age distribution of the 1940 enumerated population of the United States as the standard population. Note that it is important not to compare age-adjusted rates with crude rates.

Table 5. The 1940 standard population, on the basis of 1 million total population

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

Random variation in numbers of deaths and death 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 circumstances¹³. 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 data. This is particularly true for infant mortality rates, cause-specific death rates, and death rates for counties. Events of a rare nature may be assumed to follow a Poisson probability distribution. For this distribution, the relative standard error (RSE) is a measure of the variability. The following formula may be used for computing RSEs in percent.

$$1. \text{RSE}(D) = \text{RSE}(R) = 100 \sqrt{\frac{1}{D}}$$

where D = number of deaths
 R = rate.

Rates based on fewer than 20 deaths, the equivalent of an $\text{RSE}(R)$ of 23 percent or more are considered statistically unreliable.

2. The 95% confidence interval for the number of deaths (D) can be obtained from the following formula:

$$2. D - 1.96 \cdot D \cdot \frac{\text{RSE}(D)}{100} \quad \text{and} \quad D + 1.96 \cdot D \cdot \frac{\text{RSE}(D)}{100}$$

3. The 95% confidence interval for an age-specific death rate (R_i) and for a crude death rate (R) can be obtained from the following formula:

$$3. R - 1.96 \cdot R \cdot \frac{\text{RSE}(R)}{100} \quad \text{and} \quad R + 1.96 \cdot R \cdot \frac{\text{RSE}(R)}{100}$$

4. For testing the difference between two rates (R_1 and R_2 , each based on 100 deaths or more), the following z-test may be used to define a significance test statistic:

$$4. \quad z = \frac{R_1 - R_2}{\sqrt{R_1^2 \left(\frac{\text{RSE}(R_1)}{100}\right)^2 + R_2^2 \left(\frac{\text{RSE}(R_2)}{100}\right)^2}}$$

if $|z| \geq 1.96$, the difference is statistically significant at the 0.05 level; and if $|z| < 1.96$, the difference is not significant.

5. To obtain a 95% confidence interval for an age-adjusted death rate (R') or a test of significance for the difference between two age-adjusted rates, the RSEs in formulas 3 and 4 are substituted by the following formula:

$$5. \quad \text{RSE}(R') = 100 \frac{\sqrt{\sum \left\{ w_i^2 R_i^2 \left(\frac{1}{D_i} \right) \right\}}}{R'}$$

where

R_i = age specific death rate for the i th age group

W_i = the age-specific U.S. standard population such that the $\sum (w_i) = 1.000000$

D_i = number of deaths for the i th age group

6. For infant mortality rates (the number of live births used as the denominator), MR, the RSEs in formulas 3 and 4 would be substituted by the following formula:

$$6. \text{RSE(IMR)} = 100 \sqrt{\frac{1}{D} + \frac{1}{B}}$$

where B is the number of live births.

APPENDIX D

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 brief 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 below.

General Notes

Resident population estimates. The population estimates on the CMF are for the ***resident*** population of the United States. For census years, the estimates are of the April 1 resident population. For non-censal years, the estimates are of the July 1 resident population. 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.

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

Intercensal estimates. The population estimates for 1971-79 and 1981-89 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.

National versus state versus county population estimates. There are national, state, and county population estimates on the CMF. It is necessary to include these three sets of estimates rather than just including county-level estimates and obtaining state and national estimates by aggregation because for the intercensal years the sum of the county estimates does differ from the state or national estimates and the sum of the state estimates differs from the national estimates. This is because the methodology used by the U.S. Bureau of the Census to produce the intercensal estimates did not smooth the estimates sufficiently to prevent this “rounding error”. Thus,

- 1) For the intercensal years, the Bureau of the Census advises users to use national population estimates when calculating national death rates and state population estimates when calculating state death rates. Note that for 1971-79 the U.S. Bureau of the Census did not produce state population estimates. For these years, the state estimates on the CMF are aggregates of county estimates.

2) For the census years, the national, state, and county estimates on the CMF are obtained from modified age-race-sex (MARS) census counts. As a result, aggregates calculated from the national, state, and county estimates agree with each other.

Rounding national estimates to the nearest 1,000. Prior to the 1992 data year, the NCHS used national population estimates rounded to the nearest 1,000 to calculate death rates for non-censal years. Originally all of the national population estimates for non-censal years on the CMF were rounded to the nearest 1,000 in accordance with this NCHS practice. However, this meant that when aggregating across age, race, and/or sex groups, death rates calculated using the CMF could differ slightly from those published by NCHS. The disparity is attributable to rounding error that occurs because the population estimates on the CMF are rounded prior to aggregation whereas the population estimates used by NCHS are rounded after aggregation. Therefore, **for 1981-88 the national estimates on the CMF are not rounded to the nearest 1,000.** This permits the user to aggregate across age, race and/or sex groups and then round the population estimates if desired. Unrounded population estimates for the other non-censal years (1968-69 and 1971-79) were not available. Therefore, **for 1968-69 and 1971-79, the national population estimates on the CMF are rounded to the nearest 1,000** and death rates calculated after aggregating across subgroups may differ slightly from published rates.

Limitations of state and county population estimates. 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.

Population under one year of age. 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.

Specific details: The derivation and limitations of the population estimates

1. **July 1, 1968 and July 1, 1969 estimates of the resident population.**

a. **National estimates.** The estimates on the CMF are U.S. Bureau of the Census intercensal estimates (*Current Population Reports, Series P-2, Number 519*), rounded 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.

b. **State and county estimates.** 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.

2. **April 1, 1970 estimates of national, state, and county resident populations.** The estimates are 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.

3. **July 1, 1971-79 estimates of the resident population.**

a. **National estimates.** 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 (*Current Population Reports, Series P-25, Number 917*). 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.

b. **State estimates.** 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)..

c. **County estimates.** 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.^{14,15} 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.

4. April 1, 1980 estimates of national, state, and county resident populations. These estimates are from a special census file (a modified age-race or MARES 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). The original census counts were modified by the U.S. Bureau of the Census to correct for an overcount of centenarians and to modify the race coding. 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 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.

5. July 1, 1981-88 estimates of the resident population.

a. **National estimates.** 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 U.S. Bureau of the Census (*Current Population Reports*, P-25, Number 1095). As for other years, NCHS live-birth data were substituted for the estimate of the population under 1 year of age.

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 decade¹⁶. 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 estimate¹⁷;

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

where:

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

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.

b. **State estimates.** These estimates are 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 U.S. 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.

c. **County estimates.** The estimates in this series are 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, and race (White, Black, and Other races) for the years 1980-89 prepared by the U.S. 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 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.

APPENDIX E

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 1968.¹⁸ 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 for the counties on the CMF are listed in Appendix F. For the years 1968-78, there are 3,080 counties on the CMF each with a unique FIPS code. For 1979-88 there are 3,114 counties on the CMF each with a unique FIPS code (with one extra code for Georgia for 1988). In addition to county-level records, the population file also has state and national-level records which also have unique FIPS codes (51 codes for the state records and 1 code for the national records).

The county codes on the mortality and population files are completely compatible. However, because there are no state or national-level records on the mortality file, the FIPS codes associated with the state and national-level records on the population file do not appear on the mortality file. Further, while there is a record on the population file for each geographic unit- year-race-sex subpopulation, there may not be a record on the mortality file for a given county-year-race-sex-age-ICD code group. If no deaths occurred for the given group, no record appears on the mortality file for that group. Thus, care must be taken when matching the mortality and population files.

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. On the population file, the population estimates on the records with a FIPS code of 02900 are the sum of the populations of the Alaskan counties. The population estimates on the records with a FIPS code of 02000 are the population estimates from the state series of population estimates.
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.** For 988, an additional county code (FIPS code = 13999) was created in Georgia. Deaths occurring in Georgia with HIV infection cited as a cause-of-death 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	36061
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:

Independent City	County	City FIPS code	County FIPS code
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 column 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 F
Dictionary of FIPS State and County Codes and Names

A. State FIPS codes and names

Entries are sorted by state FIPS code.

State FIPS	State Abbrev	State Name	State FIPS	State Abbrev	State Name
01	AL	Alabama	30	MT	Montana
02	AK	Alaska	31	NE	Nebraska
04	AZ	Arizona	32	NV	Nevada
05	AR	Arkansas	33	NH	New Hampshire
06	CA	California	34	NJ	New Jersey
08	CO	Colorado	35	NM	New Mexico
09	CT	Connecticut	36	NY	New York
10	DE	Delaware	37	NC	North Carolina
11	DC	District of Columbia	38	ND	North Dakota
12	FL	Florida	39	OH	Ohio
13	GA	Georgia	40	OK	Oklahoma
15	HI	Hawaii	41	OR	Oregon
16	ID	Idaho	42	PA	Pennsylvania
17	IL	Illinois	44	RI	Rhode Island
18	IN	Indiana	45	SC	South Carolina
19	IA	Iowa	46	SD	South Dakota
20	KS	Kansas	47	TN	Tennessee
21	KY	Kentucky	48	TX	Texas
22	LA	Louisiana	49	UT	Utah
23	ME	Maine	50	VT	Vermont
24	MD	Maryland	51	VA	Virginia
25	MA	Massachusetts	53	WA	Washington
26	MI	Michigan	54	WV	West Virginia
27	MN	Minnesota	55	WI	Wisconsin
28	MS	Mississippi	56	WY	Wyoming
29	MO	Missouri			

B. Dictionary of FIPS State and County Codes and County Names

Entries in this dictionary are sorted by state and county FIPS code. Independent cities (Maryland, Missouri, Nevada, Virginia) have county codes of 500 and higher and thus, appear at the end of a state's list.

FIPS St Cnty	State Abbrv	County Name	FIPS St Cnty	State Abbrv	County Name
ALABAMA			01 081	AL	LEE
01 000	AL	STATE TOTAL	01 083	AL	LIMESTONE
01 001	AL	AUTAUGA	01 085	AL	LOWNDES
01 003	AL	BALDWIN	01 087	AL	MACON
01 005	AL	BARBOUR	01 089	AL	MADISON
01 007	AL	BIBB	01 091	AL	MARENGO
01 009	AL	BLOUNT	01 093	AL	MARION
01 011	AL	BULLOCK	01 095	AL	MARSHALL
01 013	AL	BUTLER	01 097	AL	MOBILE
01 015	AL	CALHOUN	01 099	AL	MONROE
01 017	AL	CHAMBERS	01 101	AL	MONTGOMERY
01 019	AL	CHEROKEE	01 103	AL	MORGAN
01 021	AL	CHILTON	01 105	AL	PERRY
01 023	AL	CHOCTAW	01 107	AL	PICKENS
01 025	AL	CLARKE	01 109	AL	PIKE
01 027	AL	CLAY	01 111	AL	RANDOLPH
01 029	AL	CLEBURNE	01 113	AL	RUSSELL
01 031	AL	COFFEE	01 115	AL	ST. CLAIR
01 033	AL	COLBERT	01 117	AL	SHELBY
01 035	AL	CONECUH	01 119	AL	SUMTER
01 037	AL	COOSA	01 121	AL	TALLADEGA
01 039	AL	COVINGTON	01 123	AL	TALLAPOOSA
01 041	AL	CRENSHAW	01 125	AL	TUSCALOOSA
01 043	AL	CULLMAN	01 127	AL	WALKER
01 045	AL	DALE	01 129	AL	WASHINGTON
01 047	AL	DALLAS	01 131	AL	WILCOX
01 049	AL	DE KALB	01 133	AL	WINSTON
01 051	AL	ELMORE			
01 053	AL	ESCAMBIA	ALASKA		
01 055	AL	ETOWAH	02 000	AK	STATE TOTAL
01 057	AL	FAYETTE	02 900	AK	ALASKA
01 059	AL	FRANKLIN			
01 061	AL	GENEVA	ARIZONA		
01 063	AL	GREENE	04 000	AZ	STATE TOTAL
01 065	AL	HALE	04 001	AZ	APACHE
01 067	AL	HENRY	04 003	AZ	COCHISE
01 069	AL	HOUSTON	04 005	AZ	COCONINO
01 071	AL	JACKSON	04 007	AZ	GILA
01 073	AL	JEFFERSON	04 009	AZ	GRAHAM
01 075	AL	LAMAR	04 011	AZ	GREENLEE
01 077	AL	LAUDERDALE	04 013	AZ	MARICOPA
01 079	AL	LAWRENCE	04 015	AZ	MOHAVE

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
04 017	AZ	NAVAJO	05 081	AR	LITTLE RIVER
04 019	AZ	PIMA	05 083	AR	LOGAN
04 021	AZ	PINAL	05 085	AR	LONOKE
04 023	AZ	SANTA CRUZ	05 087	AR	MADISON
04 025	AZ	YAVAPAI	05 089	AR	MARION
04 027	AZ	YUMA	05 091	AR	MILLER
ARKANSAS			05 093	AR	MISSISSIPPI
05 000	AR	STATE TOTAL	05 095	AR	MONROE
05 001	AR	ARKANSAS	05 097	AR	MONTGOMERY
05 003	AR	ASHLEY	05 099	AR	NEVADA
05 005	AR	BAXTER	05 101	AR	NEWTON
05 007	AR	BENTON	05 103	AR	OUACHITA
05 009	AR	BOONE	05 105	AR	PERRY
05 011	AR	BRADLEY	05 107	AR	PHILLIPS
05 013	AR	CALHOUN	05 109	AR	PIKE
05 015	AR	CARROLL	05 111	AR	POINSETT
05 017	AR	CHICOT	05 113	AR	POLK
05 019	AR	CLARK	05 115	AR	POPE
05 021	AR	CLAY	05 117	AR	PRAIRIE
05 023	AR	CLEBURNE	05 119	AR	PULASKI
05 025	AR	CLEVELAND	05 121	AR	RANDOLPH
05 027	AR	COLUMBIA	05 123	AR	ST. FRANCIS
05 029	AR	CONWAY	05 125	AR	SALINE
05 031	AR	CRAIGHEAD	05 127	AR	SCOTT
05 033	AR	CRAWFORD	05 129	AR	SEARCY
05 035	AR	CRITTENDEN	05 131	AR	SEBASTIAN
05 037	AR	CROSS	05 133	AR	SEVIER
05 039	AR	DALLAS	05 135	AR	SHARP
05 041	AR	DESHA	05 137	AR	STONE
05 043	AR	DREW	05 139	AR	UNION
05 045	AR	FAULKNER	05 141	AR	VAN BUREN
05 047	AR	FRANKLIN	05 143	AR	WASHINGTON
05 049	AR	FULTON	05 145	AR	WHITE
05 051	AR	GARLAND	05 147	AR	WOODRUFF
05 053	AR	GRANT	05 149	AR	YELL
05 055	AR	GREENE	CALIFORNIA		
05 057	AR	HEMPSTEAD	06 000	CA	STATE TOTAL
05 059	AR	HOT SPRING	06 001	CA	ALAMEDA
05 061	AR	HOWARD	06 003	CA	ALPINE
05 063	AR	INDEPENDENCE	06 005	CA	AMADOR
05 065	AR	IZARD	06 007	CA	BUTTE
05 067	AR	JACKSON	06 009	CA	CALAVERAS
05 069	AR	JEFFERSON	06 011	CA	COLUSA
05 071	AR	JOHNSON	06 013	CA	CONTRA COSTA
05 073	AR	LAFAYETTE	06 015	CA	DEL NORTE
05 075	AR	LAWRENCE	06 017	CA	EL DORADO
05 077	AR	LEE	06 019	CA	FRESNO
05 079	AR	LINCOLN	06 021	CA	GLENN

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
06 023	CA	HUMBOLDT	COLORADO		
06 025	CA	IMPERIAL	08 000	CO	STATE TOTAL
06 027	CA	INYO	08 001	CO	ADAMS
06 029	CA	KERN	08 003	CO	ALAMOSA
06 031	CA	KINGS	08 005	CO	ARAPAHOE
06 033	CA	LAKE	08 007	CO	ARCHULETA
06 035	CA	LASSEN	08 009	CO	BACA
06 037	CA	LOS ANGELES	08 011	CO	BENT
06 039	CA	MADERA	08 013	CO	BOULDER
06 041	CA	MARIN	08 015	CO	CHAFFEE
06 043	CA	MARIPOSA	08 017	CO	CHEYENNE
06 045	CA	MENDOCINO	08 019	CO	CLEAR CREEK
06 047	CA	MERCED	08 021	CO	CONEJOS
06 049	CA	MODOC	08 023	CO	COSTILLA
06 051	CA	MONO	08 025	CO	CROWLEY
06 053	CA	MONTEREY	08 027	CO	CUSTER
06 055	CA	NAPA	08 029	CO	DELTA
06 057	CA	NEVADA	08 031	CO	DENVER
06 059	CA	ORANGE	08 033	CO	DOLORES
06 061	CA	PLACER	08 035	CO	DOUGLAS
06 063	CA	PLUMAS	08 037	CO	EAGLE
06 065	CA	RIVERSIDE	08 039	CO	ELBERT
06 067	CA	SACRAMENTO	08 041	CO	EL PASO
06 069	CA	SAN BENITO	08 043	CO	FREMONT
06 071	CA	SAN BERNARDINO	08 045	CO	GARFIELD
06 073	CA	SAN DIEGO	08 047	CO	GILPIN
06 075	CA	SAN FRANCISCO	08 049	CO	GRAND
06 077	CA	SAN JOAQUIN	08 051	CO	GUNNISON
06 079	CA	SAN LUIS OBISPO	08 053	CO	HINSDALE
06 081	CA	SAN MATEO	08 055	CO	HUERFANO
06 083	CA	SANTA BARBARA	08 057	CO	JACKSON
06 085	CA	SANTA CLARA	08 059	CO	JEFFERSON
06 087	CA	SANTA CRUZ	08 061	CO	KIOWA
06 089	CA	SHASTA	08 063	CO	KIT CARSON
06 091	CA	SIERRA	08 065	CO	LAKE
06 093	CA	SISKIYOU	08 067	CO	LA PLATA
06 095	CA	SOLANO	08 069	CO	LARIMER
06 097	CA	SONOMA	08 071	CO	LAS ANIMAS
06 099	CA	STANISLAUS	08 073	CO	LINCOLN
06 101	CA	SUTTER	08 075	CO	LOGAN
06 103	CA	TEHAMA	08 077	CO	MESA
06 105	CA	TRINITY	08 079	CO	MINERAL
06 107	CA	TULARE	08 081	CO	MOFFAT
06 109	CA	TUOLUMNE	08 083	CO	MONTEZUMA
06 111	CA	VENTURA	08 085	CO	MONTROSE
06 113	CA	YOLO	08 087	CO	MORGAN
06 115	CA	YUBA	08 089	CO	OTERO

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
08 091	CO	OURAY	12 015	FL	CHARLOTTE
08 093	CO	PARK	12 017	FL	CITRUS
08 095	CO	PHILLIPS	12 019	FL	CLAY
08 097	CO	PITKIN	12 021	FL	COLLIER
08 099	CO	PROWERS	12 023	FL	COLUMBIA
08 101	CO	PUEBLO	12 025	FL	DADE
08 103	CO	RIO BLANCO	12 027	FL	DE SOTO
08 105	CO	RIO GRANDE	12 029	FL	DIXIE
08 107	CO	ROUTT	12 031	FL	DUVAL
08 109	CO	SAGUACHE	12 033	FL	ESCAMBIA
08 111	CO	SAN JUAN	12 035	FL	FLAGLER
08 113	CO	SAN MIGUEL	12 037	FL	FRANKLIN
08 115	CO	SEDGWICK	12 039	FL	GADSDEN
08 117	CO	SUMMIT	12 041	FL	GILCHRIST
08 119	CO	TELLER	12 043	FL	GLADES
08 121	CO	WASHINGTON	12 045	FL	GULF
08 123	CO	WELD	12 047	FL	HAMILTON
08 125	CO	YUMA	12 049	FL	HARDEE
CONNECTICUTT			12 051	FL	HENDRY
09 000	CT	STATE TOTAL	12 053	FL	HERNANDO
09 001	CT	FAIRFIELD	12 055	FL	HIGHLANDS
09 003	CT	HARTFORD	12 057	FL	HILLSBOROUGH
09 005	CT	LITCHFIELD	12 059	FL	HOLMES
09 007	CT	MIDDLESEX	12 061	FL	INDIAN RIVER
09 009	CT	NEW HAVEN	12 063	FL	JACKSON
09 011	CT	NEW LONDON	12 065	FL	JEFFERSON
09 013	CT	TOLLAND	12 067	FL	LAFAYETTE
09 015	CT	WINDHAM	12 069	FL	LAKE
DELAWARE			12 071	FL	LEE
10 000	DE	STATE TOTAL	12 073	FL	LEON
10 001	DE	KENT	12 075	FL	LEVY
10 003	DE	NEW CASTLE	12 077	FL	LIBERTY
10 005	DE	SUSSEX	12 079	FL	MADISON
DISTRICT OF COLUMBIA			12 081	FL	MANATEE
11 000	DC	STATE TOTAL	12 083	FL	MARION
11 001	DC	WASHINGTON	12 085	FL	MARTIN
FLORIDA			12 087	FL	MONROE
12 000	FL	STATE TOTAL	12 089	FL	NASSAU
12 001	FL	ALACHUA	12 091	FL	OKALOOSA
12 003	FL	BAKER	12 093	FL	OKEECHOBEE
12 005	FL	BAY	12 095	FL	ORANGE
12 007	FL	BRADFORD	12 097	FL	OSCEOLA
12 009	FL	BREVARD	12 099	FL	PALM BEACH
12 011	FL	BROWARD	12 101	FL	PASCO
12 013	FL	CALHOUN	12 103	FL	PINELLAS
			12 105	FL	POLK
			12 107	FL	PUTNAM
			12 109	FL	ST. JOHNS
			12 111	FL	ST. LUCIE

FIPS St Cnty	State Abbrv	County Name	FIPS St Cnty	State Abbrv	County Name
13 171	GA	LAMAR	13 271	GA	TELFAIR
13 173	GA	LANIER	13 273	GA	TERRELL
13 175	GA	LAURENS	13 275	GA	THOMAS
13 177	GA	LEE	13 277	GA	TIFT
13 179	GA	LIBERTY	13 279	GA	TOOMBS
13 181	GA	LINCOLN	13 281	GA	TOWNS
13 183	GA	LONG	13 283	GA	TREUTLEN
13 185	GA	LOWNDES	13 285	GA	TROUP
13 187	GA	LUMPKIN	13 287	GA	TURNER
13 189	GA	MCDUFFIE	13 289	GA	TWIGGS
13 191	GA	MCINTOSH	13 291	GA	UNION
13 193	GA	MACON	13 293	GA	UPSON
13 195	GA	MADISON	13 295	GA	WALKER
13 197	GA	MARION	13 297	GA	WALTON
13 199	GA	MERIWETHER	13 299	GA	WARE
13 201	GA	MILLER	13 301	GA	WARREN
13 205	GA	MITCHELL	13 303	GA	WASHINGTON
13 207	GA	MONROE	13 305	GA	WAYNE
13 209	GA	MONTGOMERY	13 307	GA	WEBSTER
13 211	GA	MORGAN	13 309	GA	WHEELER
13 213	GA	MURRAY	13 311	GA	WHITE
13 215	GA	MUSCOGEE	13 313	GA	WHITFIELD
13 217	GA	NEWTON	13 315	GA	WILCOX
13 219	GA	OCONEE	13 317	GA	WILKES
13 221	GA	OGLETHORPE	13 319	GA	WILKINSON
13 223	GA	PAULDING	13 321	GA	WORTH
13 225	GA	PEACH	13 999	GA	UNKNOWN
13 227	GA	PICKENS			
13 229	GA	PIERCE			
13 231	GA	PIKE	HAWAII		
13 233	GA	POLK	15 000	HI	STATE TOTAL
13 235	GA	PULASKI	15 001	HI	HAWAII
13 237	GA	PUTNAM	15 003	HI	HONOLULU
13 239	GA	QUITMAN	15 007	HI	KAUAI
13 241	GA	RABUN	15 009	HI	MAUI
13 243	GA	RANDOLPH			
13 245	GA	RICHMOND	IDAHO		
13 247	GA	ROCKDALE	16 000	ID	STATE TOTAL
13 249	GA	SCHLEY	16 001	ID	ADA
13 251	GA	SCREVEN	16 003	ID	ADAMS
13 253	GA	SEMINOLE	16 005	ID	BANNOCK
13 255	GA	SPALDING	16 007	ID	BEAR LAKE
13 257	GA	STEPHENS	16 009	ID	BENEWAH
13 259	GA	STEWART	16 011	ID	BINGHAM
13 261	GA	SUMTER	16 013	ID	BLAINE
13 263	GA	TALBOT	16 015	ID	BOISE
13 265	GA	TALIAFERRO	16 017	ID	BONNER
13 267	GA	TATTNALL	16 019	ID	BONNEVILLE
13 269	GA	TAYLOR	16 021	ID	BOUNDARY
			16 023	ID	BUTTE

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
17 119	IL	MADISON	18 007	IN	BENTON
17 121	IL	MARION	18 009	IN	BLACKFORD
17 123	IL	MARSHALL	18 011	IN	BOONE
17 125	IL	MASON	18 013	IN	BROWN
17 127	IL	MASSAC	18 015	IN	CARROLL
17 129	IL	MENARD	18 017	IN	CASS
17 131	IL	MERCER	18 019	IN	CLARK
17 133	IL	MONROE	18 021	IN	CLAY
17 135	IL	MONTGOMERY	18 023	IN	CLINTON
17 137	IL	MORGAN	18 025	IN	CRAWFORD
17 139	IL	MOULTRIE	18 027	IN	DAVIESS
17 141	IL	OGLE	18 029	IN	DEARBORN
17 143	IL	PEORIA	18 031	IN	DECATUR
17 145	IL	PERRY	18 033	IN	DE KALB
17 147	IL	PIATT	18 035	IN	DELAWARE
17 149	IL	PIKE	18 037	IN	DUBOIS
17 151	IL	POPE	18 039	IN	ELKHART
17 153	IL	PULASKI	18 041	IN	FAYETTE
17 155	IL	PUTNAM	18 043	IN	FLOYD
17 157	IL	RANDOLPH	18 045	IN	FOUNTAIN
17 159	IL	RICHLAND	18 047	IN	FRANKLIN
17 161	IL	ROCK ISLAND	18 049	IN	FULTON
17 163	IL	ST. CLAIR	18 051	IN	GIBSON
17 165	IL	SALINE	18 053	IN	GRANT
17 167	IL	SANGAMON	18 055	IN	GREENE
17 169	IL	SCHUYLER	18 057	IN	HAMILTON
17 171	IL	SCOTT	18 059	IN	HANCOCK
17 173	IL	SHELBY	18 061	IN	HARRISON
17 175	IL	STARK	18 063	IN	HENDRICKS
17 177	IL	STEPHENSON	18 065	IN	HENRY
17 179	IL	TAZEWELL	18 067	IN	HOWARD
17 181	IL	UNION	18 069	IN	HUNTINGTON
17 183	IL	VERMILION	18 071	IN	JACKSON
17 185	IL	WABASH	18 073	IN	JASPER
17 187	IL	WARREN	18 075	IN	JAY
17 189	IL	WASHINGTON	18 077	IN	JEFFERSON
17 191	IL	WAYNE	18 079	IN	JENNINGS
17 193	IL	WHITE	18 081	IN	JOHNSON
17 195	IL	WHITESIDE	18 083	IN	KNOX
17 197	IL	WILL	18 085	IN	KOSCIUSKO
17 199	IL	WILLIAMSON	18 087	IN	LAGRANGE
17 201	IL	WINNEBAGO	18 089	IN	LAKE
17 203	IL	WOODFORD	18 091	IN	LA PORTE
			18 093	IN	LAWRENCE
			18 095	IN	MADISON
INDIANA			18 097	IN	MARION
18 000	IN	STATE TOTAL	18 099	IN	MARSHALL
18 001	IN	ADAMS	18 101	IN	MARTIN
18 003	IN	ALLEN	18 103	IN	MIAMI
18 005	IN	BARTHOLOMEW			

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
18 105	IN	MONROE	19 013	IA	BLACK HAWK
18 107	IN	MONTGOMERY	19 015	IA	BOONE
18 109	IN	MORGAN	19 017	IA	BREMER
18 111	IN	NEWTON	19 019	IA	BUCHANAN
18 113	IN	NOBLE	19 021	IA	BUENA VISTA
18 115	IN	OHIO	19 023	IA	BUTLER
18 117	IN	ORANGE	19 025	IA	CALHOUN
18 119	IN	OWEN	19 027	IA	CARROLL
18 121	IN	PARKE	19 029	IA	CASS
18 123	IN	PERRY	19 031	IA	CEDAR
18 125	IN	PIKE	19 033	IA	CERRO GORDO
18 127	IN	PORTER	19 035	IA	CHEROKEE
18 129	IN	POSEY	19 037	IA	CHICKASAW
18 131	IN	PULASKI	19 039	IA	CLARKE
18 133	IN	PUTNAM	19 041	IA	CLAY
18 135	IN	RANDOLPH	19 043	IA	CLAYTON
18 137	IN	RIPLEY	19 045	IA	CLINTON
18 139	IN	RUSH	19 047	IA	CRAWFORD
18 141	IN	ST. JOSEPH	19 049	IA	DALLAS
18 143	IN	SCOTT	19 051	IA	DAVIS
18 145	IN	SHELBY	19 053	IA	DECATUR
18 147	IN	SPENCER	19 055	IA	DELAWARE
18 149	IN	STARKE	19 057	IA	DES MOINES
18 151	IN	STEUBEN	19 059	IA	DICKINSON
18 153	IN	SULLIVAN	19 061	IA	DUBUQUE
18 155	IN	SWITZERLAND	19 063	IA	EMMET
18 157	IN	TIPPECANOE	19 065	IA	FAYETTE
18 159	IN	TIPTON	19 067	IA	FLOYD
18 161	IN	UNION	19 069	IA	FRANKLIN
18 163	IN	VANDERBURGH	19 071	IA	FREMONT
18 165	IN	VERMILLION	19 073	IA	GREENE
18 167	IN	VIGO	19 075	IA	GRUNDY
18 169	IN	WABASH	19 077	IA	GUTHRIE
18 171	IN	WARREN	19 079	IA	HAMILTON
18 173	IN	WARRICK	19 081	IA	HANCOCK
18 175	IN	WASHINGTON	19 083	IA	HARDIN
18 177	IN	WAYNE	19 085	IA	HARRISON
18 179	IN	WELLS	19 087	IA	HENRY
18 181	IN	WHITE	19 089	IA	HOWARD
18 183	IN	WHITLEY	19 091	IA	HUMBOLDT
			19 093	IA	IDA
			19 095	IA	IOWA
IOWA			19 097	IA	JACKSON
19 000	IA	STATE TOTAL	19 099	IA	JASPER
19 001	IA	ADAIR	19 101	IA	JEFFERSON
19 003	IA	ADAMS	19 103	IA	JOHNSON
19 005	IA	ALLAMAKEE	19 105	IA	JONES
19 007	IA	APPANOOSE	19 107	IA	KEOKUK
19 009	IA	AUDUBON	19 109	IA	KOSSUTH
19 011	IA	BENTON			

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
19 111	IA	LEE	20 005	KS	ATCHISON
19 113	IA	LINN	20 007	KS	BARBER
19 115	IA	LOUISA	20 009	KS	BARTON
19 117	IA	LUCAS	20 011	KS	BOURBON
19 119	IA	LYON	20 013	KS	BROWN
19 121	IA	MADISON	20 015	KS	BUTLER
19 123	IA	MAHASKA	20 017	KS	CHASE
19 125	IA	MARION	20 019	KS	CHAUTAUQUA
19 127	IA	MARSHALL	20 021	KS	CHEROKEE
19 129	IA	MILLS	20 023	KS	CHEYENNE
19 131	IA	MITCHELL	20 025	KS	CLARK
19 133	IA	MONONA	20 027	KS	CLAY
19 135	IA	MONROE	20 029	KS	CLOUD
19 137	IA	MONTGOMERY	20 031	KS	COFFEY
19 139	IA	MUSCATINE	20 033	KS	COMANCHE
19 141	IA	O'BRIEN	20 035	KS	COWLEY
19 143	IA	OSCEOLA	20 037	KS	CRAWFORD
19 145	IA	PAGE	20 039	KS	DECATUR
19 147	IA	PALO ALTO	20 041	KS	DICKINSON
19 149	IA	PLYMOUTH	20 043	KS	DONIPHAN
19 151	IA	POCAHONTAS	20 045	KS	DOUGLAS
19 153	IA	POLK	20 047	KS	EDWARDS
19 155	IA	POTTAWATTAMIE	20 049	KS	ELK
19 157	IA	POWESHIEK	20 051	KS	ELLIS
19 159	IA	RINGGOLD	20 053	KS	ELLSWORTH
19 161	IA	SAC	20 055	KS	FINNEY
19 163	IA	SCOTT	20 057	KS	FORD
19 165	IA	SHELBY	20 059	KS	FRANKLIN
19 167	IA	SIOUX	20 061	KS	GEARY
19 169	IA	STORY	20 063	KS	GOVE
19 171	IA	TAMA	20 065	KS	GRAHAM
19 173	IA	TAYLOR	20 067	KS	GRANT
19 175	IA	UNION	20 069	KS	GRAY
19 177	IA	VAN BUREN	20 071	KS	GREELEY
19 179	IA	WAPELLO	20 073	KS	GREENWOOD
19 181	IA	WARREN	20 075	KS	HAMILTON
19 183	IA	WASHINGTON	20 077	KS	HARPER
19 185	IA	WAYNE	20 079	KS	HARVEY
19 187	IA	WEBSTER	20 081	KS	HASKELL
19 189	IA	WINNEBAGO	20 083	KS	HODGEMAN
19 191	IA	WINNESHIEK	20 085	KS	JACKSON
19 193	IA	WOODBURY	20 087	KS	JEFFERSON
19 195	IA	WORTH	20 089	KS	JEWELL
19 197	IA	WRIGHT	20 091	KS	JOHNSON
			20 093	KS	KEARNY
			20 095	KS	KINGMAN
KANSAS			20 097	KS	KIOWA
20 000	KS	STATE TOTAL	20 099	KS	LABETTE
20 001	KS	ALLEN	20 101	KS	LANE
20 003	KS	ANDERSON			

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
28 043	MS	GRENADA	28 141	MS	TISHOMINGO
28 045	MS	HANCOCK	28 143	MS	TUNICA
28 047	MS	HARRISON	28 145	MS	UNION
28 049	MS	HINDS	28 147	MS	WALTHALL
28 051	MS	HOLMES	28 149	MS	WARREN
28 053	MS	HUMPHREYS	28 151	MS	WASHINGTON
28 055	MS	ISSAQUENA	28 153	MS	WAYNE
28 057	MS	ITAWAMBA	28 155	MS	WEBSTER
28 059	MS	JACKSON	28 157	MS	WILKINSON
28 061	MS	JASPER	28 159	MS	WINSTON
28 063	MS	JEFFERSON	28 161	MS	YALOBUSHA
28 065	MS	JEFFERSON DAVIS	28 163	MS	YAZOO
28 067	MS	JONES			
28 069	MS	KEMPER			
28 071	MS	LAFAYETTE	MISSOURI		
28 073	MS	LAMAR	29 000	MO	STATE TOTAL
28 075	MS	LAUDERDALE	29 001	MO	ADAIR
28 077	MS	LAWRENCE	29 003	MO	ANDREW
28 079	MS	LEAKE	29 005	MO	ATCHISON
28 081	MS	LEE	29 007	MO	AUDRAIN
28 083	MS	LEFLORE	29 009	MO	BARRY
28 085	MS	LINCOLN	29 011	MO	BARTON
28 087	MS	LOWNDES	29 013	MO	BATES
28 089	MS	MADISON	29 015	MO	BENTON
28 091	MS	MARION	29 017	MO	BOLLINGER
28 093	MS	MARSHALL	29 019	MO	BOONE
28 095	MS	MONROE	29 021	MO	BUCHANAN
28 097	MS	MONTGOMERY	29 023	MO	BUTLER
28 099	MS	NESHOBA	29 025	MO	CALDWELL
28 101	MS	NEWTON	29 027	MO	CALLAWAY
28 103	MS	NOXUBEE	29 029	MO	CAMDEN
28 105	MS	OKTIBBEHA	29 031	MO	CAPE GIRARDEAU
28 107	MS	PANOLA	29 033	MO	CARROLL
28 109	MS	PEARL RIVER	29 035	MO	CARTER
28 111	MS	PERRY	29 037	MO	CASS
28 113	MS	PIKE	29 039	MO	CEDAR
28 115	MS	PONTOTOC	29 041	MO	CHARITON
28 117	MS	PRENTISS	29 043	MO	CHRISTIAN
28 119	MS	QUITMAN	29 045	MO	CLARK
28 121	MS	RANKIN	29 047	MO	CLAY
28 123	MS	SCOTT	29 049	MO	CLINTON
28 125	MS	SHARKEY	29 051	MO	COLE
28 127	MS	SIMPSON	29 053	MO	COOPER
28 129	MS	SMITH	29 055	MO	CRAWFORD
28 131	MS	STONE	29 057	MO	DADE
28 133	MS	SUNFLOWER	29 059	MO	DALLAS
28 135	MS	TALLAHATCHIE	29 061	MO	DAVISS
28 137	MS	TATE	29 063	MO	DE KALB
28 139	MS	TIPPAH	29 065	MO	DENT
			29 067	MO	DOUGLAS

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
NEW MEXICO			36 023	NY	CORTLAND
35 000	NM	STATE TOTAL	36 025	NY	DELAWARE
35 001	NM	BERNALILLO	36 027	NY	DUTCHESS
35 003	NM	CATRON	36 029	NY	ERIE
35 005	NM	CHAVES	36 031	NY	ESSEX
35 007	NM	COLFAX	36 033	NY	FRANKLIN
35 009	NM	CURRY	36 035	NY	FULTON
35 011	NM	DE BACA	36 037	NY	GENESEE
35 013	NM	DONA ANA	36 039	NY	GREENE
35 015	NM	EDDY	36 041	NY	HAMILTON
35 017	NM	GRANT	36 043	NY	HERKIMER
35 019	NM	GUADALUPE	36 045	NY	JEFFERSON
35 021	NM	HARDING	36 047	NY	KINGS
35 023	NM	HIDALGO	36 049	NY	LEWIS
35 025	NM	LEA	36 051	NY	LIVINGSTON
35 027	NM	LINCOLN	36 053	NY	MADISON
35 028	NM	LOS ALAMOS	36 055	NY	MONROE
35 029	NM	LUNA	36 057	NY	MONTGOMERY
35 031	NM	MCKINLEY	36 059	NY	NASSAU
35 033	NM	MORA	36 061	NY	NEW YORK CITY
35 035	NM	OTERO	36 063	NY	NIAGARA
35 037	NM	QUAY	36 065	NY	ONEIDA
35 039	NM	RIO ARRIBA	36 067	NY	ONONDAGA
35 041	NM	ROOSEVELT	36 069	NY	ONTARIO
35 043	NM	SANDOVAL	36 071	NY	ORANGE
35 045	NM	SAN JUAN	36 073	NY	ORLEANS
35 047	NM	SAN MIGUEL	36 075	NY	OSWEGO
35 049	NM	SANTA FE	36 077	NY	OTSEGO
35 051	NM	SIERRA	36 079	NY	PUTNAM
35 053	NM	SOCORRO	36 081	NY	QUEENS
35 055	NM	TAOS	36 083	NY	RENSSELAER
35 057	NM	TORRANCE	36 085	NY	RICHMOND
35 059	NM	UNION	36 087	NY	ROCKLAND
35 061	NM	VALENCIA	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
NEW YORK					
36 000	NY	STATE TOTAL			
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			

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
36 121	NY	WYOMING	37 089	NC	HENDERSON
36 123	NY	YATES	37 091	NC	HERTFORD
NORTH CAROLINA			37 093	NC	HOKE
37 000	NC	STATE TOTAL	37 095	NC	HYDE
37 001	NC	ALAMANCE	37 097	NC	IREDELL
37 003	NC	ALEXANDER	37 099	NC	JACKSON
37 005	NC	ALLEGHANY	37 101	NC	JOHNSTON
37 007	NC	ANSON	37 103	NC	JONES
37 009	NC	ASHE	37 105	NC	LEE
37 011	NC	AVERY	37 107	NC	LENOIR
37 013	NC	BEAUFORT	37 109	NC	LINCOLN
37 015	NC	BERTIE	37 111	NC	MCDOWELL
37 017	NC	BLADEN	37 113	NC	MACON
37 019	NC	BRUNSWICK	37 115	NC	MADISON
37 021	NC	BUNCOMBE	37 117	NC	MARTIN
37 023	NC	BURKE	37 119	NC	MECKLENBURG
37 025	NC	CABARRUS	37 121	NC	MITCHELL
37 027	NC	CALDWELL	37 123	NC	MONTGOMERY
37 029	NC	CAMDEN	37 125	NC	MOORE
37 031	NC	CARTERET	37 127	NC	NASH
37 033	NC	CASWELL	37 129	NC	NEW HANOVER
37 035	NC	CATAWBA	37 131	NC	NORTHAMPTON
37 037	NC	CHATHAM	37 133	NC	ONSLow
37 039	NC	CHEROKEE	37 135	NC	ORANGE
37 041	NC	CHOWAN	37 137	NC	PAMLICO
37 043	NC	CLAY	37 139	NC	PASQUOTANK
37 045	NC	CLEVELAND	37 141	NC	PENDER
37 047	NC	COLUMBUS	37 143	NC	PERQUIMANS
37 049	NC	CRAVEN	37 145	NC	PERSON
37 051	NC	CUMBERLAND	37 147	NC	PITT
37 053	NC	CURRITUCK	37 149	NC	POLK
37 055	NC	DARE	37 151	NC	RANDOLPH
37 057	NC	DAVIDSON	37 153	NC	RICHMOND
37 059	NC	DAVIE	37 155	NC	ROBESON
37 061	NC	DUPLIN	37 157	NC	ROCKINGHAM
37 063	NC	DURHAM	37 159	NC	ROWAN
37 065	NC	EDGECOMBE	37 161	NC	RUTHERFORD
37 067	NC	FORSYTH	37 163	NC	SAMPSON
37 069	NC	FRANKLIN	37 165	NC	SCOTLAND
37 071	NC	GASTON	37 167	NC	STANLY
37 073	NC	GATES	37 169	NC	STOKES
37 075	NC	GRAHAM	37 171	NC	SURRY
37 077	NC	GRANVILLE	37 173	NC	SWAIN
37 079	NC	GREENE	37 175	NC	TRANSYLVANIA
37 081	NC	GUILFORD	37 177	NC	TYRRELL
37 083	NC	HALIFAX	37 179	NC	UNION
37 085	NC	HARNETT	37 181	NC	VANCE
37 087	NC	HAYWOOD	37 183	NC	WAKE
			37 185	NC	WARREN

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
37 187	NC	WASHINGTON	38 079	ND	ROLETTE
37 189	NC	WATAUGA	38 081	ND	SARGENT
37 191	NC	WAYNE	38 083	ND	SHERIDAN
37 193	NC	WILKES	38 085	ND	SIOUX
37 195	NC	WILSON	38 087	ND	SLOPE
37 197	NC	YADKIN	38 089	ND	STARK
37 199	NC	YANCEY	38 091	ND	STEELE
			38 093	ND	STUTSMAN
			38 095	ND	TOWNER
			38 097	ND	TRAILL
			38 099	ND	WALSH
			38 101	ND	WARD
			38 103	ND	WELLS
			38 105	ND	WILLIAMS
NORTH DAKOTA			OHIO		
38 000	ND	STATE TOTAL	39 000	OH	STATE TOTAL
38 001	ND	ADAMS	39 001	OH	ADAMS
38 003	ND	BARNES	39 003	OH	ALLEN
38 005	ND	BENSON	39 005	OH	ASHLAND
38 007	ND	BILLINGS	39 007	OH	ASHTABULA
38 009	ND	BOTTINEAU	39 009	OH	ATHENS
38 011	ND	BOWMAN	39 011	OH	AUGLAIZE
38 013	ND	BURKE	39 013	OH	BELMONT
38 015	ND	BURLEIGH	39 015	OH	BROWN
38 017	ND	CASS	39 017	OH	BUTLER
38 019	ND	CAVALIER	39 019	OH	CARROLL
38 021	ND	DICKEY	39 021	OH	CHAMPAIGN
38 023	ND	DIVIDE	39 023	OH	CLARK
38 025	ND	DUNN	39 025	OH	CLERMONT
38 027	ND	EDDY	39 027	OH	CLINTON
38 029	ND	EMMONS	39 029	OH	COLUMBIANA
38 031	ND	FOSTER	39 031	OH	COSHOCTON
38 033	ND	GOLDEN VALLEY	39 033	OH	CRAWFORD
38 035	ND	GRAND FORKS	39 035	OH	CUYAHOGA
38 037	ND	GRANT	39 037	OH	DARKE
38 039	ND	GRIGGS	39 039	OH	DEFIANCE
38 041	ND	HETTINGER	39 041	OH	DELAWARE
38 043	ND	KIDDER	39 043	OH	ERIE
38 045	ND	LA MOURE	39 045	OH	FAIRFIELD
38 047	ND	LOGAN	39 047	OH	FAYETTE
38 049	ND	MCHENRY	39 049	OH	FRANKLIN
38 051	ND	MCINTOSH	39 051	OH	FULTON
38 053	ND	MCKENZIE	39 053	OH	GALLIA
38 055	ND	MCLEAN	39 055	OH	GEAUGA
38 057	ND	MERCER	39 057	OH	GREENE
38 059	ND	MORTON	39 059	OH	GUERNSEY
38 061	ND	MOUNTRAIL	39 061	OH	HAMILTON
38 063	ND	NELSON	39 063	OH	HANCOCK
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			

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
42 037	PA	COLUMBIA	RHODE ISLAND		
42 039	PA	CRAWFORD	44 000	RI	STATE TOTAL
42 041	PA	CUMBERLAND	44 001	RI	BRISTOL
42 043	PA	DAUPHIN	44 003	RI	KENT
42 045	PA	DELAWARE	44 005	RI	NEWPORT
42 047	PA	ELK	44 007	RI	PROVIDENCE
42 049	PA	ERIE	44 009	RI	WASHINGTON
42 051	PA	FAYETTE	SOUTH CAROLINA		
42 053	PA	FOREST	45 000	SC	STATE TOTAL
42 055	PA	FRANKLIN	45 001	SC	ABBEVILLE
42 057	PA	FULTON	45 003	SC	AIKEN
42 059	PA	GREENE	45 005	SC	ALLENDALE
42 061	PA	HUNTINGDON	45 007	SC	ANDERSON
42 063	PA	INDIANA	45 009	SC	BAMBERG
42 065	PA	JEFFERSON	45 011	SC	BARNWELL
42 067	PA	JUNIATA	45 013	SC	BEAUFORT
42 069	PA	LACKAWANNA	45 015	SC	BERKELEY
42 071	PA	LANCASTER	45 017	SC	CALHOUN
42 073	PA	LAWRENCE	45 019	SC	CHARLESTON
42 075	PA	LEBANON	45 021	SC	CHEROKEE
42 077	PA	LEHIGH	45 023	SC	CHESTER
42 079	PA	LUZERNE	45 025	SC	CHESTERFIELD
42 081	PA	LYCOMING	45 027	SC	CLARENDON
42 083	PA	MCKEAN	45 029	SC	COLLETON
42 085	PA	MERCER	45 031	SC	DARLINGTON
42 087	PA	MIFFLIN	45 033	SC	DILLON
42 089	PA	MONROE	45 035	SC	DORCHESTER
42 091	PA	MONTGOMERY	45 037	SC	EDGEFIELD
42 093	PA	MONTOUR	45 039	SC	FAIRFIELD
42 095	PA	NORTHAMPTON	45 041	SC	FLORENCE
42 097	PA	NORTHUMBERLAND	45 043	SC	GEORGETOWN
42 099	PA	PERRY	45 045	SC	GREENVILLE
42 101	PA	PHILADELPHIA	45 047	SC	GREENWOOD
42 103	PA	PIKE	45 049	SC	HAMPTON
42 105	PA	POTTER	45 051	SC	HORRY
42 107	PA	SCHUYLKILL	45 053	SC	JASPER
42 109	PA	SNYDER	45 055	SC	KERSHAW
42 111	PA	SOMERSET	45 057	SC	LANCASTER
42 113	PA	SULLIVAN	45 059	SC	LAURENS
42 115	PA	SUSQUEHANNA	45 061	SC	LEE
42 117	PA	TIOGA	45 063	SC	LEXINGTON
42 119	PA	UNION	45 065	SC	MCCORMICK
42 121	PA	VENANGO	45 067	SC	MARION
42 123	PA	WARREN	45 069	SC	MARLBORO
42 125	PA	WASHINGTON	45 071	SC	NEWBERRY
42 127	PA	WAYNE	45 073	SC	OCONEE
42 129	PA	WESTMORELAND	45 075	SC	ORANGEBURG
42 131	PA	WYOMING	45 077	SC	PICKENS
42 133	PA	YORK			

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
48 039	TX	BRAZORIA	48 137	TX	EDWARDS
48 041	TX	BRAZOS	48 139	TX	ELLIS
48 043	TX	BREWSTER	48 141	TX	EL PASO
48 045	TX	BRISCOE	48 143	TX	ERATH
48 047	TX	BROOKS	48 145	TX	FALLS
48 049	TX	BROWN	48 147	TX	FANNIN
48 051	TX	BURLESON	48 149	TX	FAYETTE
48 053	TX	BURNET	48 151	TX	FISHER
48 055	TX	CALDWELL	48 153	TX	FLOYD
48 057	TX	CALHOUN	48 155	TX	FOARD
48 059	TX	CALLAHAN	48 157	TX	FORT BEND
48 061	TX	CAMERON	48 159	TX	FRANKLIN
48 063	TX	CAMP	48 161	TX	FREESTONE
48 065	TX	CARSON	48 163	TX	FRIO
48 067	TX	CASS	48 165	TX	GAINES
48 069	TX	CASTRO	48 167	TX	GALVESTON
48 071	TX	CHAMBERS	48 169	TX	GARZA
48 073	TX	CHEROKEE	48 171	TX	GILLESPIE
48 075	TX	CHILDRESS	48 173	TX	GLASSCOCK
48 077	TX	CLAY	48 175	TX	GOLIAD
48 079	TX	COCHRAN	48 177	TX	GONZALES
48 081	TX	COKE	48 179	TX	GRAY
48 083	TX	COLEMAN	48 181	TX	GRAYSON
48 085	TX	COLLIN	48 183	TX	GREGG
48 087	TX	COLLINGSWORTH	48 185	TX	GRIMES
48 089	TX	COLORADO	48 187	TX	GUADALUPE
48 091	TX	COMAL	48 189	TX	HALE
48 093	TX	COMANCHE	48 191	TX	HALL
48 095	TX	CONCHO	48 193	TX	HAMILTON
48 097	TX	COOKE	48 195	TX	HANSFORD
48 099	TX	CORYELL	48 197	TX	HARDEMAN
48 101	TX	COTTLE	48 199	TX	HARDIN
48 103	TX	CRANE	48 201	TX	HARRIS
48 105	TX	CROCKETT	48 203	TX	HARRISON
48 107	TX	CROSBY	48 205	TX	HARTLEY
48 109	TX	CULBERSON	48 207	TX	HASKELL
48 111	TX	DALLAM	48 209	TX	HAYS
48 113	TX	DALLAS	48 211	TX	HEMPHILL
48 115	TX	DAWSON	48 213	TX	HENDERSON
48 117	TX	DEAF SMITH	48 215	TX	HIDALGO
48 119	TX	DELTA	48 217	TX	HILL
48 121	TX	DENTON	48 219	TX	HOCKLEY
48 123	TX	DE WITT	48 221	TX	HOOD
48 125	TX	DICKENS	48 223	TX	HOPKINS
48 127	TX	DIMMIT	48 225	TX	HOUSTON
48 129	TX	DONLEY	48 227	TX	HOWARD
48 131	TX	DUVAL	48 229	TX	HUDSPETH
48 133	TX	EASTLAND	48 231	TX	HUNT
48 135	TX	ECTOR	48 233	TX	HUTCHINSON

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
48 235	TX	IRION	48 333	TX	MILLS
48 237	TX	JACK	48 335	TX	MITCHELL
48 239	TX	JACKSON	48 337	TX	MONTAGUE
48 241	TX	JASPER	48 339	TX	MONTGOMERY
48 243	TX	JEFF DAVIS	48 341	TX	MOORE
48 245	TX	JEFFERSON	48 343	TX	MORRIS
48 247	TX	JIM HOGG	48 345	TX	MOTLEY
48 249	TX	JIM WELLS	48 347	TX	NACOGDOCHES
48 251	TX	JOHNSON	48 349	TX	NAVARRO
48 253	TX	JONES	48 351	TX	NEWTON
48 255	TX	KARNES	48 353	TX	NOLAN
48 257	TX	KAUFMAN	48 355	TX	NUECES
48 259	TX	KENDALL	48 357	TX	OCHILTREE
48 261	TX	KENEDY	48 359	TX	OLDHAM
48 263	TX	KENT	48 361	TX	ORANGE
48 265	TX	KERR	48 363	TX	PALO PINTO
48 267	TX	KIMBLE	48 365	TX	PANOLA
48 269	TX	KING	48 367	TX	PARKER
48 271	TX	KINNEY	48 369	TX	PARMER
48 273	TX	KLEBERG	48 371	TX	PECOS
48 275	TX	KNOX	48 373	TX	POLK
48 277	TX	LAMAR	48 375	TX	POTTER
48 279	TX	LAMB	48 377	TX	PRESIDIO
48 281	TX	LAMPASAS	48 379	TX	RAINS
48 283	TX	LA SALLE	48 381	TX	RANDALL
48 285	TX	LAVACA	48 383	TX	REAGAN
48 287	TX	LEE	48 385	TX	REAL
48 289	TX	LEON	48 387	TX	RED RIVER
48 291	TX	LIBERTY	48 389	TX	REEVES
48 293	TX	LIMESTONE	48 391	TX	REFUGIO
48 295	TX	LIPSCOMB	48 393	TX	ROBERTS
48 297	TX	LIVE OAK	48 395	TX	ROBERTSON
48 299	TX	LLANO	48 397	TX	ROCKWALL
48 301	TX	LOVING	48 399	TX	RUNNELS
48 303	TX	LUBBOCK	48 401	TX	RUSK
48 305	TX	LYNN	48 403	TX	SABINE
48 307	TX	MCCULLOCH	48 405	TX	SAN AUGUSTINE
48 309	TX	MCLENNAN	48 407	TX	SAN JACINTO
48 311	TX	MCMULLEN	48 409	TX	SAN PATRICIO
48 313	TX	MADISON	48 411	TX	SAN SABA
48 315	TX	MARION	48 413	TX	SCHLEICHER
48 317	TX	MARTIN	48 415	TX	SCURRY
48 319	TX	MASON	48 417	TX	SHACKELFORD
48 321	TX	MATAGORDA	48 419	TX	SHELBY
48 323	TX	MAVERICK	48 421	TX	SHERMAN
48 325	TX	MEDINA	48 423	TX	SMITH
48 327	TX	MENARD	48 425	TX	SOMERVELL
48 329	TX	MIDLAND	48 427	TX	STARR
48 331	TX	MILAM	48 429	TX	STEPHENS

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
51 015	VA	AUGUSTA	51 115	VA	MATHEWS
51 017	VA	BATH	51 117	VA	MECKLENBURG
51 019	VA	BEDFORD	51 119	VA	MIDDLESEX
51 021	VA	BLAND	51 121	VA	MONTGOMERY
51 023	VA	BOTETOURT	51 125	VA	NELSON
51 025	VA	BRUNSWICK	51 127	VA	NEW KENT
51 027	VA	BUCHANAN	51 131	VA	NORTHAMPTON
51 029	VA	BUCKINGHAM	51 133	VA	NORTHUMBERLAND
51 031	VA	CAMPBELL	51 135	VA	NOTTOWAY
51 033	VA	CAROLINE	51 137	VA	ORANGE
51 035	VA	CARROLL	51 139	VA	PAGE
51 036	VA	CHARLES CITY	51 141	VA	PATRICK
51 037	VA	CHARLOTTE	51 143	VA	PITTSYLVANIA
51 041	VA	CHESTERFIELD	51 145	VA	POWHATAN
51 043	VA	CLARKE	51 147	VA	PRINCE EDWARD
51 045	VA	CRAIG	51 149	VA	PRINCE GEORGE
51 047	VA	CULPEPER	51 153	VA	PRINCE WILLIAM
51 049	VA	CUMBERLAND	51 155	VA	PULASKI
51 051	VA	DICKENSON	51 157	VA	RAPPAHANNOCK
51 053	VA	DINWIDDIE	51 159	VA	RICHMOND
51 057	VA	ESSEX	51 161	VA	ROANOKE
51 059	VA	FAIRFAX	51 163	VA	ROCKBRIDGE
51 061	VA	FAUQUIER	51 165	VA	ROCKINGHAM
51 063	VA	FLOYD	51 167	VA	RUSSELL
51 065	VA	FLUVANNA	51 169	VA	SCOTT
51 067	VA	FRANKLIN	51 171	VA	SHENANDOAH
51 069	VA	FREDERICK	51 173	VA	SMYTH
51 071	VA	GILES	51 175	VA	SOUTHAMPTON
51 073	VA	GLOUCESTER	51 177	VA	SPOTSYLVANIA
51 075	VA	GOOCHLAND	51 179	VA	STAFFORD
51 077	VA	GRAYSON	51 181	VA	SURRY
51 079	VA	GREENE	51 183	VA	SUSSEX
51 081	VA	GREENSVILLE	51 185	VA	TAZEWELL
51 083	VA	HALIFAX	51 187	VA	WARREN
51 085	VA	HANOVER	51 191	VA	WASHINGTON
51 087	VA	HENRICO	51 193	VA	WESTMORELAND
51 089	VA	HENRY	51 195	VA	WISE
51 091	VA	HIGHLAND	51 197	VA	WYTHE
51 093	VA	ISLE OF WIGHT	51 199	VA	YORK
51 095	VA	JAMES CITY	51 510	VA	ALEXANDRIA CITY
51 097	VA	KING AND QUEEN	51 515	VA	BEDFORD CITY
51 099	VA	KING GEORGE	51 520	VA	BRISTOL CITY
51 101	VA	KING WILLIAM	51 530	VA	BUENA VISTA CITY
51 103	VA	LANCASTER	51 540	VA	CHARLOTTESVILLE CITY
51 105	VA	LEE	51 550	VA	CHESAPEAKE CITY
51 107	VA	LOUDOUN	51 560	VA	CLIFTON FORGE CITY
51 109	VA	LOUISA	51 570	VA	COLONIAL HEIGHTS CITY
51 111	VA	LUNENBURG	51 580	VA	COVINGTON CITY
51 113	VA	MADISON	51 590	VA	DANVILLE CITY

FIPS St Cnty	State Abbrv	County Name	FIPS St Cnty	State Abbrv	County Name
51 595	VA	EMPORIA CITY	53 031	WA	JEFFERSON
51 600	VA	FAIRFAX CITY	53 033	WA	KING
51 610	VA	FALLS CHURCH CITY	53 035	WA	KITSAP
51 620	VA	FRANKLIN CITY	53 037	WA	KITTITAS
51 630	VA	FREDERICKSBURG CITY	53 039	WA	KLICKITAT
51 640	VA	GALAX CITY	53 041	WA	LEWIS
51 650	VA	HAMPTON CITY	53 043	WA	LINCOLN
51 660	VA	HARRISONBURG CITY	53 045	WA	MASON
51 670	VA	HOPEWELL CITY	53 047	WA	OKANOGAN
51 678	VA	LEXINGTON CITY	53 049	WA	PACIFIC
51 680	VA	LYNCHBURG CITY	53 051	WA	PEND OREILLE
51 683	VA	MANASSAS CITY	53 053	WA	PIERCE
51 685	VA	MANASSAS PARK CITY	53 055	WA	SAN JUAN
51 690	VA	MARTINSVILLE CITY	53 057	WA	SKAGIT
51 700	VA	NEWPORT NEWS CITY	53 059	WA	SKAMANIA
51 710	VA	NORFOLK CITY	53 061	WA	SNOHOMISH
51 720	VA	NORTON CITY	53 063	WA	SPOKANE
51 730	VA	PETERSBURG CITY	53 065	WA	STEVENS
51 735	VA	POQUOSON CITY	53 067	WA	THURSTON
51 740	VA	PORTSMOUTH CITY	53 069	WA	WAHKIAKUM
51 750	VA	RADFORD CITY	53 071	WA	WALLA WALLA
51 760	VA	RICHMOND CITY	53 073	WA	WHATCOM
51 770	VA	ROANOKE CITY	53 075	WA	WHITMAN
51 775	VA	SALEM CITY	53 077	WA	YAKIMA
51 780	VA	SOUTH BOSTON CITY			
51 790	VA	STAUNTON CITY			
51 800	VA	SUFFOLK CITY			
51 810	VA	VIRGINIA BEACH CITY			
51 820	VA	WAYNESBORO CITY			
51 830	VA	WILLIAMSBURG CITY			
51 840	VA	WINCHESTER CITY			
WASHINGTON			WEST VIRGINIA		
53 000	WA	STATE TOTAL	54 000	WV	STATE TOTAL
53 001	WA	ADAMS	54 001	WV	BARBOUR
53 003	WA	ASOTIN	54 003	WV	BERKELEY
53 005	WA	BENTON	54 005	WV	BOONE
53 007	WA	CHELAN	54 007	WV	BRAXTON
53 009	WA	CLALLAM	54 009	WV	BROOKE
53 011	WA	CLARK	54 011	WV	CABELL
53 013	WA	COLUMBIA	54 013	WV	CALHOUN
53 015	WA	COWLITZ	54 015	WV	CLAY
53 017	WA	DOUGLAS	54 017	WV	DODDRIDGE
53 019	WA	FERRY	54 019	WV	FAYETTE
53 021	WA	FRANKLIN	54 021	WV	GILMER
53 023	WA	GARFIELD	54 023	WV	GRANT
53 025	WA	GRANT	54 025	WV	GREENBRIER
53 027	WA	GRAYS HARBOR	54 027	WV	HAMPSHIRE
53 029	WA	ISLAND	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

FIPS	State	County	FIPS	State	County
St Cnty	Abbrv	Name	St Cnty	Abbrv	Name
55 123	WI	VERNON			
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			
55 125	WI	VILAS			
55 127	WI	WALWORTH			

WYOMING

56 000	WY	<i>STATE TOTAL</i>
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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