

DATA SOURCES AND ANALYSIS

VITAL RECORDS SYSTEM

State statute requires that all vital record certificates be filed with the Illinois Department of Public Health. The director of the Department is also the state registrar who, in turn, delegates authority to the deputy state registrar to administer and enforce the Vital Records Act. The requirement to register births and deaths was first included in the legislation that established the State Board of Health in 1877. However, the law did not provide workable enforcement, and the system failed for lack of central legal control over the data collection process. After several attempts, a law incorporating the elements of an efficient system became effective January 1, 1916. Slight modifications were made over the years until January 1, 1962, when the current law, including several significant provisions, became effective.

The original live birth, death, and fetal death certificates are collected by local registrars of vital records who are appointed by and are under the direct supervision of the state registrar. Local registrars keep a copy of each certificate for their files and for the files of the county clerk and send the original to the Illinois Department of Public Health. (See Exhibits 1 through 6 for copies of sample certificates.)

Insuring that a certificate of live birth is filed is the responsibility of the hospital administrator when the birth occurs in a hospital. The attending physician verifies or provides the date of birth and required medical information. When births occur outside hospitals, the physician or other attendant prepares and files the certificate.

Funeral directors must file death certificates with the local registrar in the area in which the death occurred in order to obtain legally necessary burial or removal permits. (A fetal death certificate must be prepared if the fetus is determined to be a product of 20 or more completed weeks of gestation and not born alive.) Medical certification, including a determination of the cause of death, is completed by the physician in charge of the decedent's care unless a coroner's or medical examiner's certificate is filed. A physician may request that a coroner or medical examiner review any death.

The coroner's physician, whose position was established by the Coroner's Act of 1957, is unique in Illinois. When requested, the coroner's physician investigates a death involving a motor vehicle accident, other accidents and forms of violence, suspicious circumstances, or a person found dead. Programs related to boating, recreational gun usage, highway safety, hazardous substance control, drug abuse, law enforcement, suicide prevention, hospital and nursing home construction, home construction, home safety and pesticide control rely heavily on the findings of the coroner, the coroner's physician and, in Cook County, the medical examiner.

The registration system also provides for amendments of birth and death certificates, preparation of new documents for adopted and legitimated children, and the certification of the contents of a record when a citizen needs it.

Central registration of marriages and divorces began on January 1, 1962. Prior to that date, annual counts of marriages and divorces by county were made intermittently. Since 1962, marriage records are filed directly with the Illinois Department of Public Health by county clerks. The application record combines information supplied by applicants for the license and by the marriage officiant. Certificates of divorce or annulment are filed directly with the Department by the clerk of the circuit court. Each certificate contains information supplied by the attorney for the petitioner and from the divorce or annulment decree.

The Division of Vital Records inspects the certificates and requests supplemental information on those that are incomplete, inconsistent or unclear. When a certificate is judged to be acceptable, coded information from the certificate is entered into a database for statistical purposes and this information is shared with the National Center for Health Statistics.

In 1988, the Illinois Department of Public Health initiated testing of an electronic birth certificate (EBC). EBCs were implemented in April of 1991 and by December of 1995, nearly 93 percent of Illinois hospitals were utilizing this method for the filing of birth certificates.

CUTOFF DATES AND INTERSTATE EXCHANGE

There is no cutoff date for the filing of a vital record as a legal document. However, there must be a cutoff date for inclusion of events for statistical purposes. The cutoff date for 1995 events was April 1996.

Copies of vital record certificates pertaining to persons who were born or died outside of the state of residence are exchanged, usually on a monthly basis, with all of the states and the Canadian provinces. The original birth, fetal death, or death certificate is never released or received in these transactions. There is no exchange of marriage, divorce or annulment data.

RACIAL CLASSIFICATION

For statistical purposes, vital events in Illinois are classified by race into white, black, American Indian, Chinese, Hawaiian, Japanese, Filipino, other Asian or Pacific Islander and other. Racial classification for a decedent, bride, groom or for divorcing spouses is based on race stated on the vital record certificate. Prior to 1989, the racial designation used for a live birth or fetal death was determined through an algorithm based on the race of both parents, as reported on the certificate. Since data year 1989, racial classification of live births and fetal deaths has been based solely on the reported race of the mother.

The tables in this report do not show data for a detailed classification by race. In some tables the divisions are white, black, and other. In other tables the classifications are simply white and nonwhite.

HISPANIC ORIGIN

In 1979, an item was added to the birth and death certificates to identify ethnic origin of a newborn's parents and of a decedent. An open ended format was used to obtain the specific origin or descent (e.g., Italian, Mexican, English). In 1989, the item was changed to a format directed toward the Hispanic population, requesting only the specific Hispanic origin (e.g., Mexican, Puerto Rican).

COMPUTATION OF PERCENTS

Births with unknown age of mother, month of pregnancy in which prenatal care began, educational attainment of mother, method of delivery, and Apgar scores were subtracted from the figures for total births that were used as denominators before percentages were computed. Percent distributions for marriages and divorces also exclude cases for which the pertinent information (e.g., duration of marriage) is not stated.

INTERPRETATION OF VITAL STATISTICS

Qualifying factors to be considered in the interpretation of vital statistics depend on the specific administrative, scientific or planning purposes for which the data are to be used. It is not feasible to discuss all of the pertinent factors in the use of vital statistics, but the following are some of the more important ones that should be taken into account:

1. Incomplete information. There are failures to provide certain types of information requested on the vital records certificates. Also, the classification systems used to prepare information on the certificates for tabulation do not employ categories that are suitable for every purpose.
2. Erroneous information. Despite procedures used to obtain, process and transmit accurate information, the user of vital statistics should not disregard the possibility of errors.
3. Lack of precise populations exposed to risk requires using estimates that may, in some instances, be inaccurate.
4. Crude rates. Most rates in this report are not adjusted to control for differences in the age, race or sex composition of populations in different geographical areas or at different periods of time. Divorce rates are not adjusted for peaks in marriage registrations in earlier years.
5. Some tables are designed to focus attention on selected risk groups. Other risk factors could have been selected.
6. Rate stability. Rates based on a small number of events tend to exhibit considerable variation over time because of chance fluctuations. Excessive variation in rates not only negates their utility as estimators of a probability of an event occurring, but also negates their usefulness for comparative purposes.

In Part II of this report, an asterisk is substituted for a printed rate if the rate is based on a numerator less than 10 or a denominator less than 100. These criteria have been adopted to avoid printing rates that are subject to especially large fluctuations.

The numbers "10" and "100" are arbitrary and are not set forth as critical points distinguishing statistically reliable rates from unreliable rates.

To obtain meaningful information for small areas (e.g., counties), rates are presented in Part II that are based on events aggregated over five years. This method of obtaining greater rate stability may obscure major changes that have occurred over time.

DEFINITIONS OF TERMS, RATES AND RATIOS

AGE

Age in years as of last birthday. For infants, age may be stated in days, weeks or months.

BIRTH ORDER

The total number of births the mother has had, including live births and terminations of pregnancy, both spontaneous and induced.

BIRTHWEIGHT

Weight of fetus or infant at time of delivery.

FETAL DEATH

Death prior to the complete expulsion or extraction from its mother of a product of conception, having completed at least 20 weeks of gestation; the fetus shows no signs of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

FIRST PARITY

The first live birth a mother delivers.

INFANT DEATH

Death occurring to an individual less than 1 year of age. The term excludes fetal deaths.

LIVE BIRTH

The complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

MATERNAL DEATH

Death for which the certifying physician has designated a complication of pregnancy, childbirth or the puerperium as the underlying cause of death.

METROPOLITAN COUNTY

A county with at least one city of 50,000 inhabitants or with "twin cities" with a combined population of at least 50,000; part of a metropolitan statistical area (MSA). Metropolitan county and MSA status are defined and determined by the U. S. Office of Management and Budget.

NEONATAL DEATH

Death occurring to an individual less than 28 days of age.

OCCURRENCE RATE

A rate based on the location of the event. Some rates are calculated according to where the event occurred, regardless of residence, (e.g. marriage and divorce rates).

PERINATAL DEATH

A fetal death or a death occurring to an individual less than 7 days of age.

PREMATURE BIRTH

A live birth or fetal death in which the weight is 2,500 grams (approximately 5 lb. 8 oz.) or less at time of delivery.

RESIDENCE

Usual place of residence. For births and fetal deaths, usual place of residence of mother is used. Some rates are calculated according to place of residence, regardless of where event occurred.

UNDERLYING CAUSE OF DEATH

Disease or condition that gave rise to the chain of morbid events leading to death, or the circumstances of the accident or violence that produced the fatal injury. See Appendix 3 for the causes and ICD numbers used in this report.

RATES AND RATIOS

Definitions of selected rates and ratios are presented below. No attempt is made to present the method of calculating each vital rate or ratio contained in this report.

The principles applied in computing age-specific, race-specific or other category-specific vital rates may be inferred from the definitions given below for certain category-specific death rates.

$$\text{(Crude) death rate} = 1,000 \text{ or } 100,000 \times \frac{\text{number of deaths}}{\text{population}}$$

$$\text{Cause-specific death rate} = 100,000 \times \frac{\text{number of deaths from the cause}}{\text{population}}$$

$$\text{Race-specific death rate} = 100,000 \times \frac{\text{number of deaths for the race}}{\text{population for that race}}$$

$$\text{Age-specific death rate} = 100,000 \times \frac{\text{number of deaths for the age}}{\text{population for that age}}$$

$$\text{Maternal mortality rate} = 10,000 \text{ or } 100,000 \times \frac{\text{number of maternal deaths}}{\text{number of live births}}$$

$$\text{Perinatal mortality rate} \\ \text{(sometimes designated as a ratio)} = 1,000 \times \frac{\text{number of deaths under 7 days of age} \\ + \text{fetal deaths}}{\text{number of live births} + \text{fetal deaths}}$$

$$\text{Fetal death rate} = 1,000 \times \frac{\text{number of fetal deaths}}{\text{number of live births} + \text{fetal deaths}}$$

$$\text{Fetal death ratio} = 1,000 \times \frac{\text{number of fetal deaths}}{\text{number of live births}}$$

$$\text{Infant mortality rate} = 1,000 \times \frac{\text{number of deaths under 1 year of age}}{\text{number of live births}}$$

$$\text{Neonatal mortality rate} = 1,000 \times \frac{\text{number of deaths under 28 days of age}}{\text{number of live births}}$$

$$\text{Postneonatal mortality rate} = 1,000 \times \frac{\text{number of deaths from ages 28 days through 11 months}}{\text{number of live births}}$$

$$\text{Years of potential life lost (YPLL)} = \Sigma \left(\begin{array}{l} 65 - \text{decedent's age in years for those} \\ \text{who died before reaching their 65th birthday} \end{array} \right)$$

$$\text{(Crude) live birth rate} = 1,000 \times \frac{\text{number of births}}{\text{population}}$$

$$\text{(General) fertility rate} = 1,000 \times \frac{\text{number of live births to women of all ages}}{\text{number of women 15 to 44 years of age}}$$

$$\text{Age-specific birth rate} = 100,000 \times \frac{\text{number of births to women of specified age}}{\text{number of women of that age}}$$

$$\text{Teenage live birth ratio} = 1,000 \times \frac{\text{number of live births to women under 20 years of age}}{\text{number of live births to women of all ages}}$$

$$\text{Ratio of out-of-wedlock childbearing} = 1,000 \times \frac{\text{number of live births to unmarried women}}{\text{number of live births}}$$

$$\text{(Crude) marriage rate} = 1,000 \times \frac{\text{number of marriages}}{\text{population}}$$

$$\text{(Crude) divorce rate} = 1,000 \times \frac{\text{number of divorces and annulments}}{\text{population}}$$

CAUSE-OF-DEATH CLASSIFICATION

Cause-of-death data presented in this publication were classified according to the International Classification of Diseases (ICD) and coded by procedures outlined in World Health Organization regulations.

Revisions in the ICD are made about every 10 years to reflect progress in medical knowledge and changes in the experience of morbid conditions. The eighth revision of the ICD was used in Illinois from 1969 through 1978. Use of the ninth revision began in 1979. The introduction of a new revision often entails major changes in classifications that cause breaks in the continuity of mortality statistics.

When more than one cause of death is cited on the certificate, the cause designated by the certifying physician as "underlying" is, generally, the cause tabulated. When the underlying cause is unclear, the physician is queried for clarification.

ICD ninth revision category numbers for selected causes of death are given below.

CATEGORY NUMBERS FOR SELECTED CAUSES OF DEATH ACCORDING TO NINTH REVISION INTERNATIONAL CLASSIFICATION OF DISEASES ADAPTED FOR USE IN THE UNITED STATES (1975)

I.	Infective and parasitic diseases	001-139
	Intestinal infectious diseases	001-009
	Shigellosis	004
	Gastroenteritis and colitis	009.0-009.1
	Diarrheal diseases	009.2-009.3
	Tuberculosis	010-018
	Late effects of tuberculosis	137
	Zoonotic bacterial diseases	020-027
	Other bacterial diseases	030-041
	Diphtheria	032
	Whooping cough	033
	Streptococcal sore throat and scarlet fever	034
	Meningococcal infection	036
	Tetanus	037
	Septicemia	038
	Gas gangrene	040.0
	Human immunodeficiency virus infection	042-044
	Acute poliomyelitis	045
	Late effects of poliomyelitis	138
	Slow virus infection of central nervous system	046
	Chicken pox	052
	Herpes zoster	053

	Herpes simplex	054
	Measles (rubeola)	055
	Rubella	056
	Viral hepatitis	070
	Rabies	071
	Mumps	072
	Infectious mononucleosis	075
	Typhus	080-081
	Rocky Mountain spotted fever	082.0
	Malaria	084
	Syphilis	090-097
	Gonococcal infections	098
	Other venereal diseases	099
	Mycoses (fungus infections)	110-118
	Sarcoidosis	135
	Pneumocystosis	136.3
II.	Malignant neoplasms	140-208
	Lip, oral cavity and pharynx	140-149
	Digestive organs and peritoneum	150-159
	Respiratory system	160-165
	Trachea, bronchus and lung	162
	Breast	174-175
	Genital organs	179-187
	Urinary organs	188-189
	Other and unspecified sites	170-173, 190-199
	Leukemia	204-208
	Other lymphatic and hematopoietic	200-203
III.	Endocrine, nutritional and metabolic diseases	240-279
	Diabetes mellitus	250
	Cystic fibrosis	277.0
IV.	Diseases of blood and blood forming organs	280-289
	Anemia	280-285
V.	Mental disorders	290-319
	Drug dependence	304
VI.	Diseases of nervous system and sense organs	320-389
	Meningitis	320-322
	Alzheimer's disease	331.0
	Infantile cerebral palsy	343
	Epilepsy	345
	Muscular dystrophy	359
VII.	Diseases of the circulatory system	390-459

	Heart disease	393-398, 402, 404-429
	Chronic rheumatic	393-398
	Hypertensive heart disease	402
	Hypertensive heart and renal disease	404
	Ischemic heart disease	410-414
	Acute myocardial infarction	410
	Other acute and subacute forms	411
	Angina pectoris	413
	Chronic ischemic heart disease	412, 414
	Other diseases of endocardium	424
	All other forms	415-423, 425-429
	Hypertension without mention of heart	401, 403
	Cerebrovascular disease	430-438
	Subarachnoid hemorrhage	430
	Cerebral hemorrhage	431-432
	Cerebral thrombosis	434.0, 434.9
	Cerebral embolism	434.1
	All other	433, 435-438
	Atherosclerosis	440
	Other circulatory diseases	390-392, 441-459
	Aortic aneurysm	441
VIII.	Diseases of the respiratory system	460-519
	Acute upper respiratory infections	460-465
	Acute bronchitis and bronchiolitis	466
	Pneumonia	480-486
	Influenza	487
	Chronic obstructive pulmonary diseases and allied conditions	490-496
	Bronchitis, chronic and unspecified	490-491
	Emphysema	492
	Asthma	493
	Bronchiectasis and extrinsic allergic alveolitis	494-495
	Chronic obstructive lung disease, not elsewhere classified	496
IX.	Diseases of the digestive system	520-579
	Ulcer of stomach and duodenum	531-533
	Hernia and intestinal obstruction	550-553, 560
	Gastritis, duodenitis, enteritis, colitis	535, 555-558
	Cirrhosis of liver	571

X.	Diseases of the genitourinary system	580-629
	Nephritis, nephrotic syndrome and nephrosis	580-589
	Infections of kidney	590
	Hyperplasia of prostate	600
XI.	Complications of pregnancy, childbirth and the puerperium	630-676
XII.	Congenital anomalies	740-759
	Nervous system	740-742
	Heart	745-746
XIII.	Certain conditions originating in the perinatal period	760-779
	Maternal unrelated to pregnancy	760
	Maternal infections	760.2
	Maternal complications of pregnancy	761
	Premature rupture of membranes	761.1
	Multiple pregnancy	761.5
	Maternal death	761.6
	Complications of placenta, cord and membranes	762
	Placenta conditions	762.0-762.3
	Prolapsed cord	762.4
	Other cord conditions	762.5-762.6
	Other complications of labor and delivery	763
	Birth trauma	767
	Intrauterine hypoxia and birth asphyxia	768
	Respiratory distress syndrome	769
	Other respiratory conditions of fetus and newborn	770
	Fetal and neonatal hemorrhage	772
	RH incompatibility	773.0
	Other haemolytic diseases	773.1-773.5
XIV.	Symptoms, signs and ill-defined conditions	780-799
	Senility without mention of psychosis	797
	Sudden death, cause unknown	798
	Sudden infant death syndrome	798.0
XV.	Unintentional Injuries	E800-E949
	Motor vehicle	E810-E825
	Collision	E810-E815
	Pedestrian	E814
	Other motor vehicle	E811-E812
	Railroad train	E810

	Bicycle	E813.6
	Fixed object	E815
	Other collision	E813 exc. E813.6
	Non-collision	E816-E825
	Running off road	E816
	Other traffic	E817-E819
	Non-traffic	E820-E825
	Non-motor vehicle transport	E800-807, E826-E848
	Other vehicle	E826-829, E846-E848
	Water transport	E830-E838
	Aircraft	E840-E845
	Railway	E800-E807
	Non-transport accidents	E850-E949
	Poisonings	E850-E869
	Drugs and medicaments	E850-E858
	Falls	E880-E888
	Fire and explosion	E890-E899
	Firearms	E922
	Mechanical suffocation	E911-E913
	Drownings	E910
	Other and late effects	remainder of E800-E869, E880-E929
	Therapeutic and non-therapeutic complications	E870-E879, E930-E949
XVI.	Suicide	E950-E959
	Drugs and medicaments	E950.0-E950.5
	Solid and liquid substances	E950.6-E950.9
	Gases and vapor	E951-E952
	Hanging, strangulation and suffocation	E953
	Handgun	E955.0
	All other and unspecified firearms	E955.1-E955.4
	All other and late effects of self inflicted injury	E954, E955.5-E959
XVII.	Homicide	E960-E978
	Assault by handgun	E965.0
	Assault by other and unspecified firearms	E965.1-E965.4
	Assault by cutting and piercing instrument	E966
	Assault by all other means and late effects of injury purposely inflicted by other persons	E960-E964, E965.5-E965.9, E967-E969
	Legal intervention	E970-E978
XVIII.	Injury undetermined whether accidentally or purposely inflicted	E980-E989
	Drugs and medicaments	E980.0-E980.5