Pregnancy Outcomes: Live Births, Fetal Deaths, Abortions

Live births to Minnesota residents increased by only 0.8 percent from 70,053 in 2003 to 70,614 in 2004. The crude birth rate decreased slightly to 13.8 from 13.9 per thousand population, a decrease of 0.7 percent. The fertility rate (births per thousand female population age 15 – 44) increased 0.6 percent from 64.1 in 2003 to 64.5 in 2004.

Births to mothers under the age of 20 and to those age 35 and over have been of special interest to public health professionals because these births tend to have more complications during pregnancy and childbirth, more infants of low birth weight and with congenital anomalies, and more infant deaths. Number of births to mothers under 20 years of age has continued to decrease. There were 4,123 births to mothers under 20 years of age in 2004, a drop of 16.8 percent from the 4,953 births to this age group in 2003. The age-specific birth rate per 1,000 female population age 15-19 dropped to 22.4 in 2004, a decrease of 15.8% from 2003's rate of 26.6 per 1,000. The number of live births to mothers age 35 and over continues to rise. The number increased 1.4 percent from 10,656 in 2003 to 10,806 in 2004. The age-specific birth rate increased by 2.6 percent from 26.8 births per 1,000 female population age 35-44 in 2003 to 27.5 per 1,000 in 2004.

As shown in Overview Table 1, the number of births increased for black, Asian & Pacific Islander, and Hispanic mothers, but decreased for white and American Indian women. These changes, particularly for white mothers, are due in part to a change in the way race information is collected and coded. Beginning with 2004 data, an individual may report more than one race, as well as Hispanic origin, which is still collected as a separate item. It appears that most of the decrease for white mothers is an artifact of the method used to assign a race code to those who reported their race as 'Other'. (See the Technical Notes section, part A, Changes in Format and Coding for more information.)

The number of reported induced abortions to Minnesota residents in 2004 declined from that reported in 2003. 12,756 induced abortions were reported in 2004 compared to 12,913 in 2003, a decrease of 1.3%. The rate also decreased slightly from 11.8 induced abortions per 1,000 female population age 15-44 in 2003 to 11.6 in 2004. While total numbers of induced abortions are reported in the Fertility section of this report, more detailed induced abortion data is reported in a separate publication entitled *Report to the Legislature: Induced Abortions in Minnesota*. These reports, beginning with October 1998 data, may be viewed on our website at http://www.health.state.mn.us/divs/chs/abrpt/abrpt.htm.

The total number of pregnancies reported by Minnesota residents in 2004 was 83,720, an increase of 0.5 percent from the 2003 figure of 83,295.

Deaths

The total number of deaths to Minnesota residents decreased from 37,603 in 2003 to 37,023 in 2004, a decrease of 1.6 percent. The total death rate dropped from 7.4 per 1,000 population to 7.3 per 1,000. Malignant neoplasms, heart disease, and cerebrovascular diseases remain the three leading causes of death in Minnesota.

Minnesota's infant mortality rate of 4.7 per 1,000 live births shows no change from the rate in 2003. The number of infant deaths, 332 in 2004 compared to 327 in 2003, is an increase of 1.5 percent. Care must be exercised in interpreting these changes as the number of infant deaths is very small. Thus a change in number or rate, though appearing to be rather large, may not be statistically significant.

Beginning with 2004 data, more than one race may be reported for an individual as well as Hispanic origin, which is still collected as a separate item. No significant changes were noted in the distribution of deaths by race as a result of this change. See the Technical Notes section, part A, Changes in Format and Coding for more information.

Marriage, Dissolutions, and Annulments

The number of marriages occurring in Minnesota decreased 4.0 percent from 31,638 in 2003 to 30,359 in 2004.

The number of dissolutions and annulments occurring in Minnesota increased 13.2 percent from 14,982 in 2003 to 16,962 in 2004. Dissolution data, as reported in this publication over the past several years, have been obtained from several sources. Thus, divorce data has most likely been somewhat under-counted in recent years and the large increase is an artifact of a more accurate count for 2004 data. (See the Technical Notes section, part B, Sources of Data for more information.)

A. Changes in Format and Coding

Beginning in January of 2004, more than one race may be selected when reporting race of decedent on a death certificate and race of mother and of father on a birth certificate or fetal death report. Approximately 1% of Minnesota resident birth mothers chose more than one race, while less than 0.2% of resident death records indicated multiple races.

For those who report more than one race, a bridged-race code is generated, assigning that individual to one of the four race categories of white, black, American Indian, and Asian/Pacific Islander, allowing for statistical comparisons to previous years' data. Due to the small number of multi-race persons in Minnesota, this generated code has little or no effect on the percents and rates by race found in this publication.

However, because the race coding of 2004 data was done by the National Center for Health Statistics rather than in-house, a significant difference is seen in the 'Other' race category for birth records and impacts the reported number of births to white mothers. Prior to 2004, when coding a record where a Hispanic ethnicity was entered in the race field (in addition to the separate Hispanic ethnicity field), that record was coded as white. In 2004, however, those records were coded as 'Other', thus greatly increasing that category and reducing the number of white births. This was the case in over 4,200 birth records. This artifact does not appear in the death data because older Minnesotans, to whom most of the deaths occur, are overwhelmingly non-Hispanic whites.

B. Sources of Data

Vital Events

Birth and death certificates and fetal death reports filed with the Office of the Registrar, Minnesota Department of Health for calendar year 2004 are the source documents for data on vital events of Minnesota residents. Sample copies of each of these documents are included in the Appendix, Figures 1, 2, and 3. All vital events are now reported electronically via the Vital Records Vision 2000 System.

Marriage data are compiled from monthly counts submitted to the Office of the State Registrar by each County Court Administrator or Registrar.

Minnesota divorce data for 2004 were obtained from a report compiled for the Minnesota Center for Health Statistics by the Research and Evaluation Unit, Court Services Division of the Minnesota Supreme Court Administrator's Office, using data from the MN Total Court Information System (TCIS) and the MN Court Information System (MNCIS). As with marriage data, the only information currently available for this report is counts by county.

Late 2004 vital event certificates may have been filed after preparation of the annual report. It is therefore possible that future data obtained from MDH may differ slightly from that which appears in this report due to updates to the data year made after the cutoff date.

Live births and deaths to Minnesota residents that occurred in another state are included in this report insofar as they are reported to the Office of the State Registrar. The inclusion of this data is made possible by an agreement for exchange of copies of resident certificates among all registration areas in the United States. Not all of the states participate in the exchange of fetal death reports, thus this report includes only fetal deaths that occurred in Minnesota. Since marriage and dissolution reports are not part of the interstate exchange program for vital events, the marriage and dissolution data in this report are Minnesota occurrences only.

Population

Census counts for 2004 by county, gender, and age group were provided by the U.S. Bureau of the Census. Estimates of the total populations for Minneapolis, St. Paul, and Duluth were also obtained from the U.S. Census Bureau. Counts by age group and gender were calculated by multiplying these estimated totals by age/gender proportions for these cities derived from the 2000 Census.

C. Data Quality

The quality of data presented in this report is directly related to the completeness and accuracy of the information contained in the source documents.

Births, Deaths, Fetal Deaths

The success of all source documents requires the cooperation and assistance of medical care providers, medical records and other hospital staff, funeral directors, and county and city vital records registrars. Working together they can assure quality vital statistics databases.

The Minnesota Department of Health maintains two major program operations related to improving the quality of information received on certificates in order to ensure that the information is as complete and accurate as possible:

1. The query program is a system used to contact hospital personnel, funeral directors, and/or physicians concerning incomplete or conflicting information. The follow-up contact is usually done by telephone and is based on both manual and computer editing procedures.
2. The field program is focused on educating participants in the vital registration system, i.e. hospital personnel, funeral directors, physicians, coroners, and medical examiners, of the uses and importance of vital statistics data. The field program conducts seminars with various professional associations and makes site visits when problems with registration related to a particular event or institution are discovered.

The National Center for Health Statistics (NCHS) also provides an independent quality control check on Minnesota's coding of statistical data. NCHS has established a two percent upper limit for coding differences involving any one data item, with the exception of cause of death. A five percent limit is established for this item due to the complexity of the coding process.

Marriages and Dissolutions & Annulments

The only data available for 2004 on marriages and dissolutions is counts by county. Thus the burden of data completeness and accuracy resides with those collecting and reporting the data to the Minnesota Department of Health.

D. Geographic Allocation

Vital events can be classified geographically in two ways. The first is by place of occurrence, i.e. the actual state, county, and city in which the birth or death took place. The second and more customary way is by place of residence, i.e. the state, county, and city that is the usual residence of the decedent in the case of a death or of the mother in the case of a newborn. Fetal deaths and infant deaths in cases where the child was never discharged from the hospital are classified to the residence of the mother.

While occurrence statistics are accurate and have both administrative value and some statistical importance, resident statistics are the more useful tool when constructing health indices for planning and evaluation purposes. The statistics provided in this report are residence data unless otherwise stated.

Allocation of vital events by place of residence is sometimes difficult because classification depends entirely upon the statement of the usual place of residence furnished by the informant at the time the original certificate is completed. For various reasons, the statement may be incomplete or incorrect. For example, the informant may not be aware that the mailing address differs from the actual geographic residence location.

E. Rates

Absolute counts of health-related events do not readily lend themselves to analysis and comparison between years and between various geographic areas because of population differences and, in some cases, the small number of reported events. These demographic differences include total number, age and sex distributions, and ethnic and/or racial composition. In order to assess the health status of a particular population at a specified time, the absolute number of events is converted to a relative number such as a probability of living or dying, a rate, a ratio, or an index. This conversion is made by relating the crude number of events to the living population at risk in a particular area at a particular time. Refer to the Appendix for definitions of rates used in *2004 Minnesota Health Statistics.*

ABORTION, INDUCED:

An act, procedure, or use of any instrument, medicine, or drug which is supplied or prescribed for or administered to a pregnant woman which results in the termination of pregnancy.

AGE/CAUSE-SPECIFIC DEATH RATE:

Number of deaths due to a particular cause for a specified age group per 100,000 population comprising the same specified age group.

AGE-SPECIFIC PREGNANCY RATE:

Number of live births plus fetal deaths plus induced abortions to women in a specified age group per 1,000 females in the population comprising the same specified age group.

CAUSE OF DEATH:

Deaths by cause are classified according to the International Classification of Diseases of the World Health Organization. In this report, the underlying cause of death is used to classify the cause. The underlying cause of death is either the disease or injury which initiated the train of events leading directly to death or the accident or violence which produced the fatal injury.

CRUDE BIRTH RATE:

Number of births per 1,000 population

CRUDE DEATH RATE:

Number of deaths per 1,000 population

FERTILITY RATE:

Total number of live births per 1,000 females in the population of age 15 through 44 years.

FETAL DEATH:

Death prior to the complete expulsion or extraction of a product of conception from its mother, irrespective of the duration of the pregnancy. The death is indicated by the fact that, after expulsion or extraction, the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. In the summary, only fetal deaths of 20 weeks or more are reported.

GESTATION:

The period of intrauterine development of the fetus, expressed in completed weeks, calculated from the first day of the last menstrual period.

INFANT DEATH:

A death of a live-born infant under one year of age.

LIVE BIRTH:

The complete expulsion or extraction from its mother of a product of 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 the umbilical cord, or definite movement of voluntary muscles whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered a live born.

LIVE BIRTH ORDER:

The number of live births to a particular woman, including the current birth.

NEONATAL DEATH:

A death of a live-born infant under 28 days of age.

RESIDENCE:

The geographic area of the usual place of abode of the deceased at the time of death or of the mother in the case of a live birth or fetal death. This means, in general, the place where one lives and sleeps most of the time. However, when the usual residence is in a nursing home or other institution where the patient resided for the purpose of receiving care, residence is coded to the place, if known, where the patient lived prior to admission to the institution.

TRIMESTER:

One third of the total gestational period necessary for a full-term pregnancy. Thirteen weeks are allotted to each trimester. The count of weeks begins with the first day of the last menstrual period.