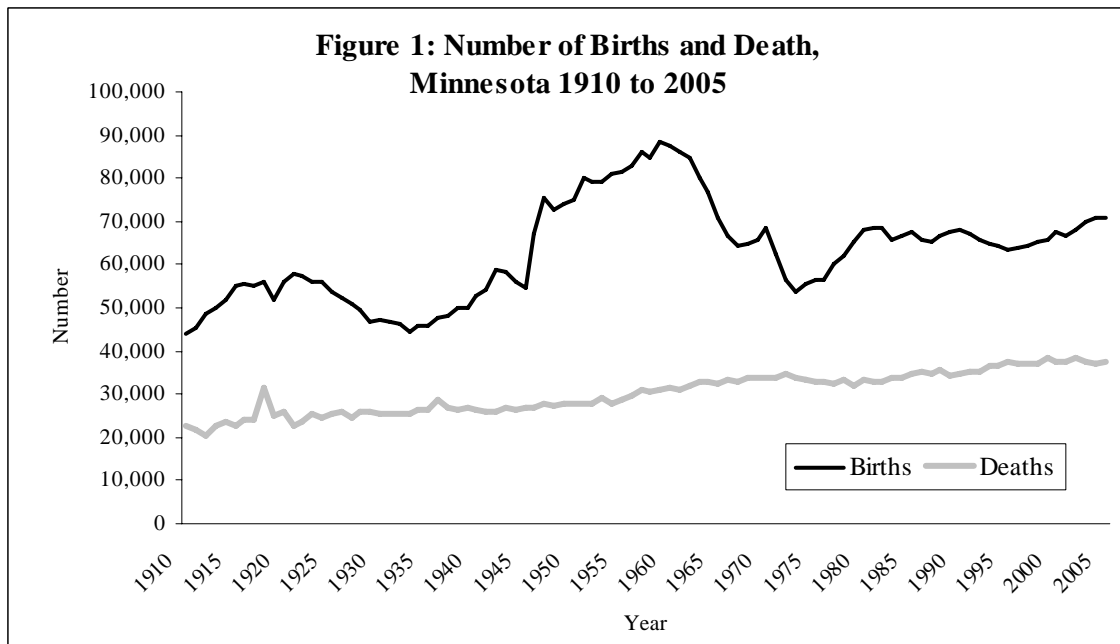


Trends in Natality and Mortality, 1990 – 2005

This issue presents general trends in vital statistics in Minnesota from 1990 to 2005. The first section covers birth data including low birth weight and prematurity. The second section provides information on selected death variables including age at death and leading causes of death. The vital statistics are from the Minnesota Department of Health, Center for Health Statistics.

Historical Overview

Numbers of deaths in Minnesota have increased very steadily since 1910, with an average increase of 153 deaths per year (with the exception of the spike in 1918 due to the influenza epidemic). The trend in births is much more variable. Births peaked in 1959 at 88,333 births and declined through the 60's and 70's. A slight upward trend began in the 90's and has continued through 2005. In 2005, there were 70,920 births and 37,498 deaths.



Natality

Birth Rate, Marriage, Age, and Smoking

Women giving birth in 2005 were more likely to be unmarried, less likely to have smoked during pregnancy and were slightly older than their 1990 counterparts.

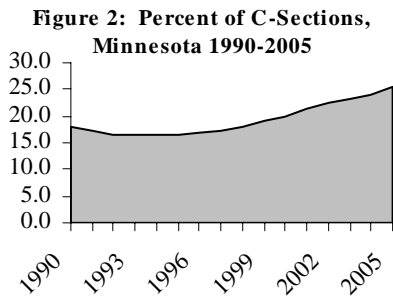
The number of births per year has steadily increased since 1995. However, birth rates remain between 13.4 and 13.8 births per 1,000 Minnesotans over the last 10 years. The percent of women who reported smoking during pregnancy has decreased over the years from 15.8% in 1990 to 9.5% in 2005.

Table 1: Selected Natality Statistics: Minnesota 1990-2005

Year	Number of Births	Birth Rate*	Percent Not Married	Average Age at 1 st Birth	Percent Who Smoked
1990	67,986	15.5	20.9	25.2	15.8
1991	67,037	15.1	22.3	25.3	15.3
1992	65,591	14.7	23.0	25.4	15.2
1993	64,646	14.3	23.3	25.5	14.4
1994	64,277	14.1	24.1	25.6	13.8
1995	63,259	13.7	24.0	25.7	13.4
1996	63,682	13.7	24.9	25.8	13.1
1997	64,491	13.8	25.1	25.7	12.9
1998	65,207	13.8	25.7	25.8	12.4
1999	65,953	13.8	25.7	25.9	11.8
2000	67,451	13.7	25.7	26.0	11.1
2001	66,617	13.4	25.8	26.0	11.2
2002	68,037	13.6	27.5	25.9	10.5
2003	70,053	13.8	27.7	26.1	10.0
2004	70,614	13.8	28.9	26.0	9.1
2005	70,920	13.8	29.7	26.3	9.5

*per 1,000 births

Service and Delivery

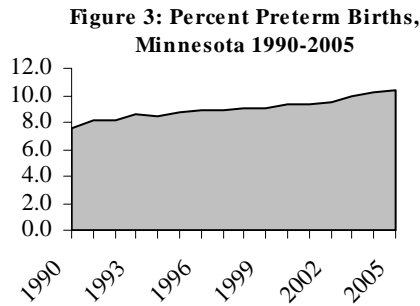


There has been a slight upward trend in the percent of women who initiated prenatal care in the first trimester (Table 2). The percent of women who have midwives attend their birth has nearly doubled since 1990 but still remains a small percentage of total births (8.3% in 2005). Cesarean sections have increased steadily over the years (Figure 2). In 2005, one quarter of births were delivered by cesarean section.

Table 2: Service and Delivery: Minnesota 1990-2005

Year	Prenatal Care by Trimester Initiated %		Attendant at Birth %		Cesarean Section
	First	Third or None	Physician	Midwife	
1990	81.2	3.6	94.9	4.6	18.0
1991	80.8	3.8	94.6	4.9	17.1
1992	81.8	3.5	94.1	5.5	16.6
1993	82.9	3.1	94.0	5.5	16.6
1994	83.0	3.0	93.6	6.2	16.6
1995	83.8	2.9	93.0	6.6	16.4
1996	83.6	3.3	91.8	7.7	17.0
1997	84.1	3.0	91.2	8.4	17.3
1998	84.5	2.9	91.0	8.5	18.1
1999	84.6	2.7	90.5	8.7	19.0
2000	84.9	2.9	90.9	8.2	20.0
2001	84.6	2.6	90.7	8.3	21.2
2002	85.5	2.3	90.0	8.8	22.4
2003	86.8	2.1	90.5	8.9	23.4
2004	86.5	2.2	91.2	8.4	24.6
2005	86.4	2.3	90.9	8.3	25.5

Birth Outcomes and Age-Specific Birth Rates



Since 1990, rate of births to females age 15-19 has decreased steadily while the rate of births to females age 35-39 has increased (Table 3). The percent of low birth weight babies has increased from 5.1% in 1990 to 6.6% in 2005. The percent of preterm babies has also increased from 7.6% in 1990 to 10.4% in 2005 (Figure 3). Multiple births have increased over the past 15 years but still remain a small percent of births (3.5% of total births).

Table 3: Birth Rates and Birth Outcomes, Minnesota 1990-2005

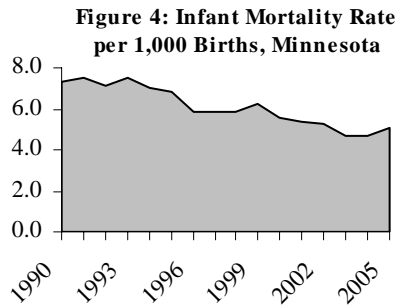
	<u>Age-Specific Birth Rate¹</u>		Multiple Births (%)	Low Birth Weight (%) ²	Prematurity (%) ³
	15-19 years	35-39 years			
1990	36.4	31.1	2.3	5.1	7.6
1991	37.3	32.3	2.4	5.3	8.2
1992	35.9	32.6	2.4	5.2	8.2
1993	34.9	32.6	2.5	5.5	8.5
1994	34.3	34.1	2.8	5.7	8.5
1995	32.2	35.0	2.9	5.9	8.7
1996	32.1	36.2	3.0	5.8	8.9
1997	32.0	37.3	3.2	5.9	8.9
1998	31.0	39.4	3.2	5.8	9.0
1999	29.6	40.5	3.2	6.1	9.0
2000	29.5	41.7	3.5	6.1	9.3
2001	27.4	42.3	3.5	6.3	9.4
2002	27.5	43.8	3.5	6.3	9.5
2003	26.6	46.9	3.4	6.3	9.9
2004	26.7	49.1	3.5	6.6	10.2
2005	26.1	50.1	3.5	6.6	10.4

¹per 1,000 females of specified age group

²less than 2,500 grams (5.5 pounds)

³less than 37 weeks gestation

Infant Deaths



There has been a general downward trend in the number and rate of infant deaths in Minnesota. Infant deaths are often broken down into two time periods: neonatal deaths (under 28 days) and post neonatal deaths (28-364 days). The rates of both neonatal and post neonatal deaths have exhibited this downward trend. In 1990 the neonatal mortality rate was 4.3; by 2005 it had decreased to 3.3 while the post neonatal death rate decreased from 2.9 in 1990 to 1.8 in 2005.

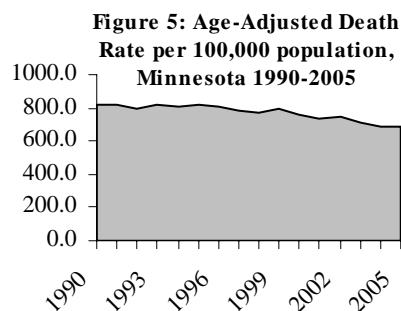
Table 4: Infant Death Rates in Minnesota by Year

Year	Total Infant Deaths (less than a year)		Neonatal Deaths (under 28 days)		Post Neonatal Deaths (28 – 364 days)	
	Number	Rate*	Number	Rate*	Number	Rate*
1990	496	7.3	295	4.3	200	2.9
1991	502	7.5	298	4.4	204	3.0
1992	464	7.1	295	4.5	170	2.6
1993	486	7.5	296	4.6	190	2.9
1994	451	7.0	296	4.6	155	2.4
1995	427	6.8	255	4.0	172	2.7
1996	377	5.9	234	3.7	143	2.2
1997	382	5.9	241	3.7	141	2.2
1998	386	5.9	265	4.1	121	1.9
1999	409	6.2	262	4.0	147	2.2
2000	377	5.6	252	3.7	125	1.9
2001	358	5.4	233	3.5	125	1.9
2002	362	5.3	240	3.5	122	1.8
2003	327	4.7	218	3.1	109	1.6
2004	332	4.7	225	3.2	107	1.5
2005	363	5.1	232	3.3	131	1.8

Source: Minnesota Vital Statistics, death cohort

*Rate per 1,000 births

Mortality



Crude and age-adjusted death rates have decreased over the years. In 1990, the crude death rate per 100,000 Minnesotans was 791.8; in 2005 it was 730.4. The age-adjusted death rate for males has consistently been higher than females. The male rate has decreased significantly from 1,055.4 in 1995 to 816.1 in 2005, a 21.3% decrease. The female age-adjusted death rate decreased by 10.7% from 655.5 in 1990 to 577.2 in 2005.

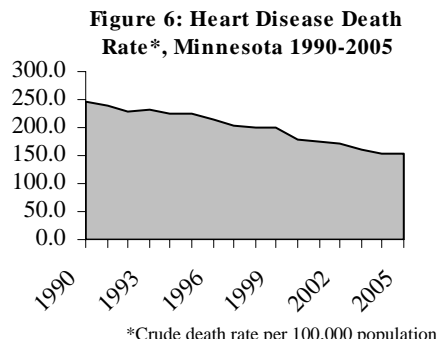
Table 5: Crude Death Rate and Age Adjusted Death Rates, Minnesota 1990-2005

	Number of Deaths	Crude Death Rate ¹	Age-Adjusted Death Rate ^{1,2}		
			Total	Male	Female
1990	34,736	791.8	819.7	1,055.4	655.5
1991	35,240	795.7	818.4	1,065.1	649.5
1992	34,979	781.7	801.2	1,023.8	644.5
1993	36,405	804.4	819.3	1,048.0	660.1
1994	36,342	794.8	805.5	1,026.9	651.4
1995	37,426	811.0	819.7	1,028.0	670.0
1996	37,164	797.9	803.9	1,012.2	656.7
1997	36,878	787.1	788.2	988.0	647.1
1998	37,152	786.2	775.4	947.2	649.1
1999	38,472	805.6	790.8	967.2	660.1
2000	37,595	764.2	758.7	927.8	636.9
2001	37,505	752.4	740.1	903.2	619.3
2002	38,437	765.7	745.9	903.0	628.8
2003	37,603	743.2	712.8	860.5	601.0
2004	37,012	725.6	691.0	830.3	585.3
2005	37,498	730.4	681.4	816.1	577.2

¹per 100,000 population

²Age-adjusted to the US standard 2000 population. A definition for age adjusted rates may be found in the *Introduction to Vital Statistics - March 2005* on the Vital Signs website.

Leading Causes of Death



Heart disease, cancer and stroke have been the leading causes of death for decades, with heart disease being the number one cause. In 2000, cancer eclipsed heart disease and is now the leading cause of death in Minnesota (Table 6). The crude death rate for heart disease continued on a downward trend. Cancer and stroke death rates have also declined from 1990 but at a slower rate. The unintentional injury death rate remains around 35 deaths per 100,000.

Table 6: Crude Death Rates* by Selected Causes, Minnesota 1990-2005

Year	Heart Disease	Cancer	Stroke	All Injuries	Motor Vehicle
1990	245.9	185.4	64.9	33.4	15.1
1991	241.0	189.6	64.6	33.0	13.3
1992	228.8	190.9	62.8	33.0	14.1
1993	232.9	186.2	67.2	33.5	13.3
1994	224.1	186.9	63.4	35.2	15.6
1995	223.8	187.4	67.5	35.8	14.2
1996	214.0	188.9	64.7	34.9	13.5
1997	203.0	186.4	63.5	36.8	12.6
1998	198.3	186.0	60.4	36.8	14.3
1999	199.5	185.9	62.5	36.9	13.3
2000	179.8	187.0	56.4	35.2	13.7
2001	176.5	181.0	55.0	35.5	12.2
2002	171.0	183.4	53.7	38.0	14.4
2003	161.4	181.5	50.4	37.6	13.9
2004	154.6	178.2	49.8	36.4	12.0
2005	154.2	174.8	46.2	37.3	11.6

*per 100,000 population

Minnesota VitalSigns

Minnesota Center for Health Statistics
Division of Health Policy
Minnesota Department of Health

Vital Signs is available on the Minnesota Center for Health Statistics website, <http://www.health.state.mn.us/divs/chs/vitalsigns/index.html>. If you require this document in another format such as large print, Braille, or cassette tape call 651/201-3504 or email healthstats@health.state.mn.us.



Protecting, maintaining and improving the health of all Minnesotans