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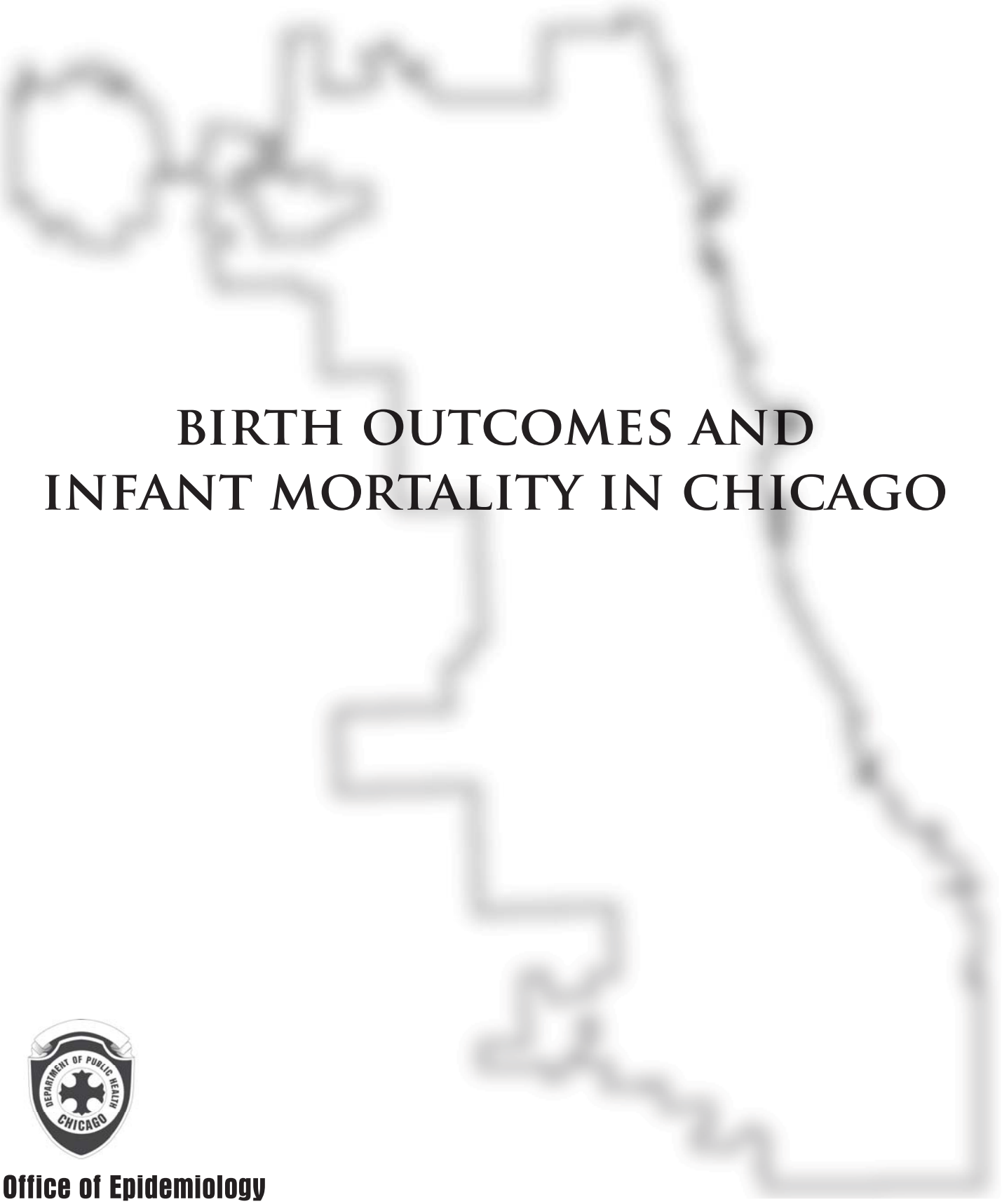

BIRTH OUTCOMES AND INFANT MORTALITY IN CHICAGO

Office of Epidemiology
Department of Public Health
City of Chicago

Birth Outcomes and Infant Mortality in Chicago

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Chicago Department of Public Health
Terry Mason, M.D. • Commissioner

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Preface

This edition of the annual epidemiological overview of birth outcomes and infant mortality in Chicago has similar content and organization as the 2006 edition but includes some additional analyses examining the association between SIDS deaths and seasonality of birth and death. It is hoped that this report and supplement will prove helpful in developing effective programs and interventions for improving reproductive and family health in Chicago. Questions, comments and/or suggestions for improving future editions are welcomed.

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Executive Summary

- The fertility rate in Chicago declined by almost 6% over the 10-year period from 1995-2004. However, decreases were only seen in the non-Hispanic Black (21%), non-Hispanic Native American (20%) and Hispanic (9%) populations. Non-Hispanic Asian and White fertility rates increased by 18 and 20 percent, respectively, over the 10-year study period (Table 2.3).
- The percent of births with parents of different ethnicities increased 16 percent from 1995 to 2004. In 2004, non-Hispanic Native Americans had the largest percentage of multi-ethnic newborns (Figure 3).
- The maternal median age at birth increased over the 10-year study period for all ethnic groups. However, the maternal median age at *first* birth only increased for non-Hispanic Asian and White mothers (Figures 4 and 7).
- The percentage of multiple births in Chicago increased by almost 30 percent since 1995. Though Hispanics overall had that smallest increase in multiple births (12%), Puerto Ricans actually had the largest increase from 1995-2004 (Table 2.5).
- There was a steady decline in teen births during 1995-2004, reaching almost 40 percent. The non-Hispanic White population had the largest decrease of all ethnic groups, 57 percent (Table 2.6).
- Timely initiation of prenatal care improved by more than 10 percent in Chicago and for all ethnic groups over the 10-year period, though not equally. Despite an 11 percent increase in the non-Hispanic Black community, early initiation of prenatal care has still not reached the level of non-Hispanic Whites in 1995 (Table 3.2).
- The percentage of births with inadequate prenatal care increased for all ethnic groups, except non-Hispanic Blacks, and the total population over the 10-year period. The most dramatic increase in inadequate prenatal care was seen in the non-Hispanic Asian population, which rose by 83 percent (Table 3.3).
- Use of certified nurse midwives for delivery more than doubled since 1995 in Chicago. The largest increase was in the Hispanic community (285%) and much less so in the non-Hispanic Black and White populations (Table 3.6).
- The percentage of Caesarean deliveries has increased by more than a third in Chicago, 11.7 percent in 1995 and 15.9 percent in 2004 (Table 3.9).

- The percentage of preterm births was relatively stable, around 11.7 percent, for the total population. However, the percentage of preterm births increased for all ethnic groups except for non-Hispanic Blacks during the 10-year study period (Table 4.2).
- The percentage of low birthweight births declined in Chicago by more than 10 percent for the total population and in all ethnic populations, except for Mexicans and all Hispanics where percentages rose 18 and 7 percent, respectively. However, the percentage of low birthweight births for non-Hispanic Blacks in 2004 is at least 60 percent higher than Chicago overall and all other ethnic populations (Table 4.3).
- Smoking rates during pregnancy have declined for women in all ethnicity categories. The greatest decrease was in non-Hispanic White mothers, almost 60 percent since 1995. Despite an almost 30 percent decrease in smoking, non-Hispanic Black women continue to have the largest percentage of births with maternal smoking during gestation in 2004 (Table 4.5).
- Low birthweight newborns were more common among mothers who had inadequate prenatal care, smoked during pregnancy, had less than 18 months between pregnancies/births and gained less than 25 pounds (Table 4.6).
- Premature newborns were more common among mothers who were 35 years or older, had inadequate prenatal care, smoked during pregnancy, had at least one previous miscarriage or stillbirth, had less than 18 months between pregnancies/births and gained less than 25 pounds (Table 4.7).
- The fetal mortality rate dropped by 20 percent in Chicago over the 10-year period. Infant mortality rates dropped by 30 percent for all ethnic groups, though not equally (Table 5.1). Although there was a 21 percent decrease in non-Hispanic Blacks, infant mortality rates remain almost twice that of non-Hispanic Whites and Hispanics in 1995 (Table 5.2).
- The five-year maternal mortality rate for 2000-2004 was 15.2 per 100,000 births. There was no predominate cause of death among these women (Table 6.2).

Background and Methods 1

This report presents data on numbers and characteristics of births from 1995 to 2004, including birth and fertility rates, maternal lifestyle and health characteristics, medical services used by pregnant women and infant health characteristics. These factors are useful in performing community level needs assessments, including health care access and the appropriateness and quality of care, and factors for potential interventions to improve maternal and child health.

Data Sources

Unless otherwise specified, data shown in this report are for calendar years 1995 through 2004, and are obtained from birth files, death files, fetal death files, and matched birth/death files, produced by the Illinois Department of Public Health (IDPH).

Denominators for population-based rates are derived from intercensal population estimates of Chicago for non census years (1995-1999 for all ethnic groups, 2001-2004 for Non-Hispanic Native Americans only), the American Community Survey (2001-2004) and from the 2000 U.S. Census. Data are reported for Chicago residents, regardless of the place of event occurrence.

Birth Files

For the time period of this report, Illinois used a modification of the 1989 revision of U.S. Standard birth certificate. The certificates contain information on parental demographic variables, health care measures prior to and during pregnancy, maternal medical risk factors, and infant health status at birth. For unmarried parents, paternal information is listed only if the father is present at delivery and signs a paternity acknowledgment.

Death Files

The death certificate includes demographic variables and causes of death. Underlying cause of death is coded by a standard methodology. The International Classification of Diseases, revision 9 (ICD-9) was in effect from 1979-1998. Data from 1999 forward are coded by the 10th revision of the ICD (ICD-10).

Cause of Death

On the death certificate, the certifier (a physician, coroner or medical examiner) enters information about the causes and circumstances of death in a specific sequence. When received by the state vital statistics office, the causes are placed in standard categories, and the underlying cause of death is then determined. The underlying cause of death is defined as:

> the disease or injury which started the sequence of events leading directly or indirectly to death, or the circumstances of the accident or violence which produced a fatal injury.

Underlying cause of death is not necessarily the first medical condition listed on the death certificate. All of the information on the certificate is examined systematically, using classification rules, to determine the most appropriate underlying cause of death.

Matched Birth/Infant Death Files

Matched birth/infant death files are created by combining information from birth certificates and death certificates of infants. These files contain one record for each infant born who died within one year of birth. In some cases, birth and death of the infants do not occur within the same calendar year. This occurs when the birth takes place in one year, and the death occurs within one year of birth but in the subsequent calendar year.

Matched files are produced by calendar year, defined by whether they include infants who died that year (and were born that year or the previous year), the death cohort, or they include infants who were born that calendar year (and died that year or the subsequent year), the birth cohort. The birth cohort by definition takes a longer time to complete than the death cohort, but both files are produced only after finalized natality and mortality files are produced, and thus are not always available for all calendar years of the published natality files. In this report, we use death cohorts.

Fetal Death Files

Fetal death certificates are required to be filed in Illinois for any pregnancy loss at 20 weeks gestation or later. The information captured in the fetal death certificate is similar to the information on the birth certificate.

Intercensal Population Estimates

Intercensal population estimates used in this report for calendar years, 1995-1999, are computed from the exponential modeling method of population forecasting, where the population increases by a constant proportion of its size at any point in time. Intercensal population estimates for calendar years, 2001-2004, are from the American Community Survey (U.S. Census Bureau) except for Non-Hispanic Native Americans. This population count is not released by the U.S. Census due to small sample sizes. Linear extrapolation population forecasting is used to estimate Non-Hispanic Native Americans in this report.

Analysis

For calculations requiring a population denominator (birth, fertility and mortality rates) data are reported for non-Hispanic White, non-Hispanic Black, Hispanic, non-Hispanic Native Americans and Alaskan Natives, and non-Hispanic Asians. In computations where a population denominator was not required, Mexican and Puerto Rican were also included.

For cause of death trends, comparability ratios were calculated by the National Center for Health Statistics (NCHS). These ratios were obtained by coding a set of death certificates under both ICD-10 and ICD-9, then comparing the differences. These ratios were applied to mortality data coded under ICD-9 to make the rates comparable to ICD-10 coded data.

ICD-10 has a markedly different rule for defining maternal mortality than ICD-9 and this is not adjustable by comparability ratios. Therefore, only data from ICD-10 are published in this report for maternal mortality.

Data Reporting Criteria

The guidelines for data release and cell suppression used by CDPH try to balance data accessibility with privacy concerns and confidence in the stability of the estimates that we publish.

Rates, percentages, and ratios based on twenty or fewer events can vary widely within and between groups just by random chance even when there is no meaningful statistical difference between measurements. Rare events occurring in large populations do not usually allow for the identification of individuals, but reporting small cell sizes for population subgroups (for example, Native American Chicago residents between 20-29 that give birth in a calendar year) increases the risk of breaching confidentiality.

Unless noted otherwise, the guidelines for cell suppression used in this report (adapted from the Massachusetts Department of Public Health) are based on both the numerator (event) and denominator (population or group size) values. To prevent back calculation of suppressed numbers, secondary suppression of at least three other cells may be performed in conjunction with the primary suppression.

Data will be reported when they meet one of the following conditions:

1. For population/group size > 29,
   number of events is less than the population/group size.
2. For population/group size between 10 and 29,
   the number of events is either 0 or the difference between
   the population/group size and the number of events is greater than 5.
3. For population/group size less than 10,
   there are no events.

If these conditions are met but calculations produce statistically unreliable rates, ratios, or percentages, then:

- counts will be reported without secondary calculations, or
- secondary calculations will be identified with a warning to use caution when interpreting or comparing those values.

Data will NOT be reported when either of the following conditions exist:

1. For population/group size between 10 and 29,
   the difference between the population/group size and the number
   of events is between 0 and 5.
2. For population/group size less than 10,
   the number of events is between 1 and 9.

Definition of Terms (alphabetically arranged)

Birth Rate

Live births per 1,000 population in a specified group.

Cause of Death

The causes of death tables for infants are a compilation of selected causes of infant deaths that account for a large majority of infant deaths. The categories are derived from official tabulation lists contained in the ICD-10.

Community Area

More than seventy years ago a research committee at the University of Chicago divided the City into 75 community areas based upon social, cultural and geographic factors. Since 1960, two additional community areas have been added. Although the community areas no longer necessarily represent the boundaries of modern Chicago neighborhoods, demographic and health information at the community-area level is useful to many community-based organizations, planners, hospitals, universities, and other groups.

Fetal Deaths

Death before the complete expulsion or extraction from its mother of a product of conception that is not an induced termination of pregnancy, irrespective of the duration of pregnancy. The death is indicated by the fact after such 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. Fetal death tabulations are for age 20 weeks and above. The fetal mortality rate is defined as the number of fetal deaths per 1,000 fetal deaths and live births combined.

Fertility Rate

Live births per 1,000 women aged 15-44 years in a specified group.

Infant Mortality Rate (IMR)

The number of deaths to infants less than one year of age per 1,000 live births. Infant deaths are commonly divided into two groups, neonatal and postneonatal. Infants included in this calculation were born to mothers who resided in the City of Chicago at time of birth.

Low Birthweight

Low birthweight (LBW) is defined as weighing 2499 grams (5 lb 8 oz) or less, moderately LBW infants as weighing between 1,500 to 2,499 grams (3 lb 5oz-5lb 8 oz), and Very Low Birthweight (VLBW) as weighing 1499 grams (3 lb 4 oz) or less at birth. Low birthweight is a major risk factor for infant mortality. Causes for LBW vary with the type of birth.

Maternal Mortality Rate (Maternal Mortality Ratio)

The total number of deaths of women from pregnancy-related causes in a given period per 100,000 live births. The maternal mortality rate is a measure of the likelihood that a pregnant woman will die from maternal causes.

Medical Risk Factors for Pregnancy

Complications of pregnancy or concurrent illnesses believed to adversely affect the outcome of pregnancy. Table 1.1 lists the sixteen conditions currently considered medical risk factors during pregnancy.

Table 1.1	Medical Risk Factors
Anemias	Hemoglobin level of less than 10 g/dL during pregnancy or hematocrit of less than 30 percent.
Cardiac disease	Disease of the heart.
Acute or chronic lung disease	Disease of the lungs.
Diabetes	Metabolic disorder characterized by excessive discharge of urine and persistent thirst; includes juvenile or adult onset and gestational diabetes.
Genital herpes	Infection of the skin of the genital area by herpes simplex virus.
Hydramnios/Oligohydramnios	Any noticeable excess (hydramnios) or lack (oligohydramnios) of amniotic fluid.
Hemoglobinopathy	A blood disorder caused by alteration in the genetically determined molecular structure of hemoglobin (ex. sickle cell anemia).
Hypertension, chronic	Blood pressure persistently greater than 140/90 diagnosed prior to onset of pregnancy or before the 20th week of gestation.
Hypertension, pregnancy-associated	An increase in blood pressure of at least 30 mm Hg systolic or 15 mm Hg diastolic on two measurements taken 6 hours apart after the 20th week of gestation.
Eclampsia	The occurrence of convulsions and/or coma unrelated to other cerebral conditions in women with signs and symptoms of pre-eclampsia.
Incompetent cervix	Characterized by painless dilation of the cervix in the second trimester or early in third trimester of pregnancy, with premature expulsion of membranes through the cervix and ballooning of the membranes into the vagina, followed by rupture of the membranes and subsequent expulsion of the fetus.
Previous infant 4,000+ grams	The birth weight of a previous live-born child was over 4,000+ grams (8 pounds, 14 ounces)
Previous pre-term or small for gestational age infant	Previous birth of an infant prior to term (before 37 completed weeks of gestation) or an infant weighing less than the 10th percentile for gestation age using a standard weight-for-age chart.
Renal disease	Kidney disease.
Rh sensitization	The process of or state of becoming sensitized to the Rh factor when an Rh-negative woman is pregnant with an Rh-positive fetus.
Uterine bleeding	Any clinically significant bleeding during the pregnancy taking into consideration the stage of pregnancy; any second or third trimester bleeding of the uterus prior to the onset of labor.

Method of Delivery

A maximum of three methods of delivery can be specified per birth in the birth certificate file and include:

- vaginal,
- assisted vaginal,
- vaginal after previous Caesarean section,
- primary Caesarean section and
- repeat Caesarean section.

In past years, any mention of vaginal birth (without mention of Caesarean section) was classified as vaginal regardless of forcep and/or vacuum use. Beginning with this report, all vaginal births assisted by forceps and/or vacuum are classified as assisted vaginal births unless they follow a prior Caesarean section. Mention of Caesarean section, either primary or repeat, takes precedence over vaginal delivery. This methodology remains consistent with prior reports.

Modified Kessner Index

A measure of the adequacy or quality of prenatal care that groups care into adequate, intermediate, and inadequate categories based on trimester of entry into care, total number of mother's prenatal care visits, and length of gestation. The inadequate category includes women with no prenatal care.

Neonatal Mortality Rate

Deaths which occur during the first 28 days of life. The neonatal mortality rate is defined as the number of neonatal deaths per 1,000 live births. Although the neonatal period accounts for less than 8% of infancy, neonatal deaths comprise about two-thirds of infant deaths.

Postneonatal Mortality Rate

Deaths that occur between the 29th and 365th days of life. The postneonatal mortality rate is defined as the number of postneonatal deaths per 1,000 live births.

Short Gestational Age/Prematurity

Less than 37 completed weeks in the womb.

Teen Births and Birth Rate

Teen births, as defined in this report, are births to mothers aged ten through 19 years of age and teenage birth rate is defined as the number of births per 1,000 female teenagers.

Chicago Parents

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Table 2.1 Births to Chicago Residents, 1995-2004

Year	Number
1995	54,515
1996	52,831
1997	51,117
1998	51,517
1999	50,542
2000	50,885
2001	49,596
2002	47,958
2003	48,044
2004	46,567

Source: IDPH Birth Files

Table 2.2 Births to Chicago Residents by Maternal Ethnicity, 1995-2004

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	1,930	23,343	79	11,075	17,887	13,731	2,459	54,515
1996	1,961	22,170	65	11,013	17,603	13,804	2,324	52,831
1997	1,978	21,344	66	10,420	17,276	13,426	2,229	51,117
1998	1,961	21,290	74	10,604	17,534	13,748	2,216	51,517
1999	2,032	19,946	49	10,535	17,945	14,250	2,085	50,542
2000	2,127	19,436	53	10,681	18,546	14,674	2,106	50,885
2001	1,993	18,575	35	10,340	18,614	14,873	1,936	49,596
2002	2,010	17,206	40	10,488	18,192	14,456	1,816	47,958
2003	2,159	16,910	49	10,553	18,333	14,424	1,825	48,044
2004	2,139	16,135	50	10,376	17,809	14,226	1,716	46,567

Source: IDPH Birth Files

Table 2.3 Fertility Rate for Chicago Residents by Ethnicity, 1995-2004

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Total Population
1995	60.4	91.4	63.6	46.9	111.6	79.5
1996	59.3	88.1	53.7	47.1	107.1	77.2
1997	57.9	86.1	55.8	45.1	102.5	74.8
1998	55.6	87.3	64.2	46.3	101.5	75.4
1999	55.9	83.1	43.6	46.5	101.4	74.1
2000	62.4	77.6	48.4	48.9	100.1	72.5
2001	78.3	76	32.9	50	103.9	73.9
2002	68.9	71.9	38.6	50.3	98.3	71
2003	76.4	76.8	48.6	55	104	76.5
2004	71	71.9	50.9	56.7	101.4	74.9

Source: IDPH Birth Files

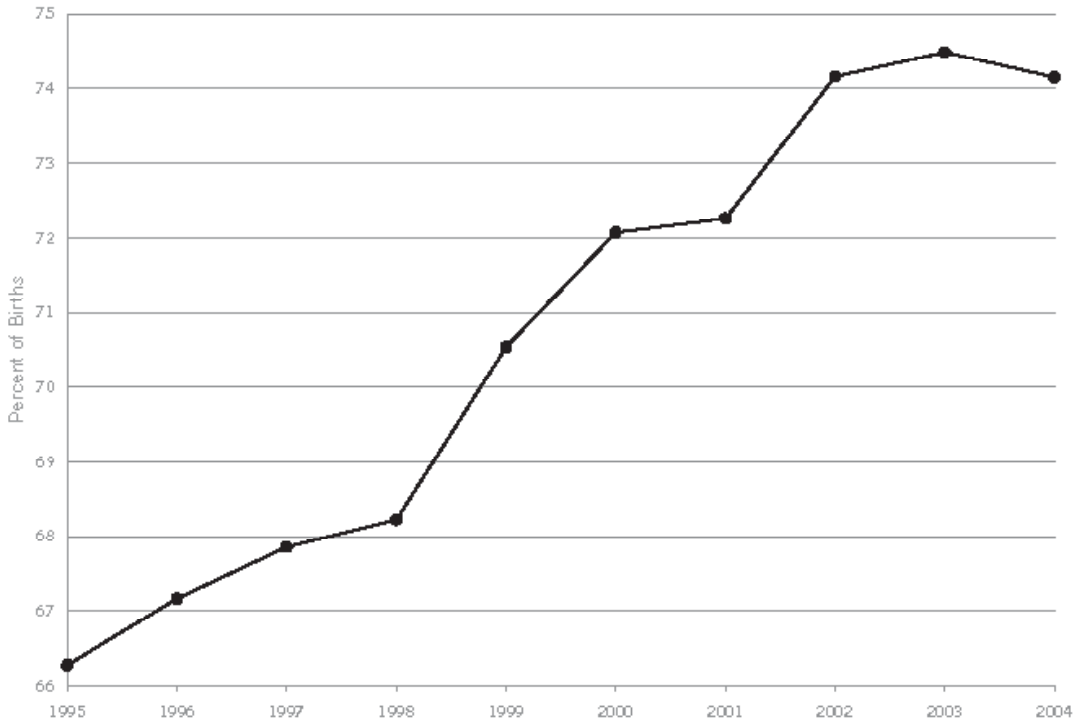

Figure 1. Percent of Births with Listed Paternal Information

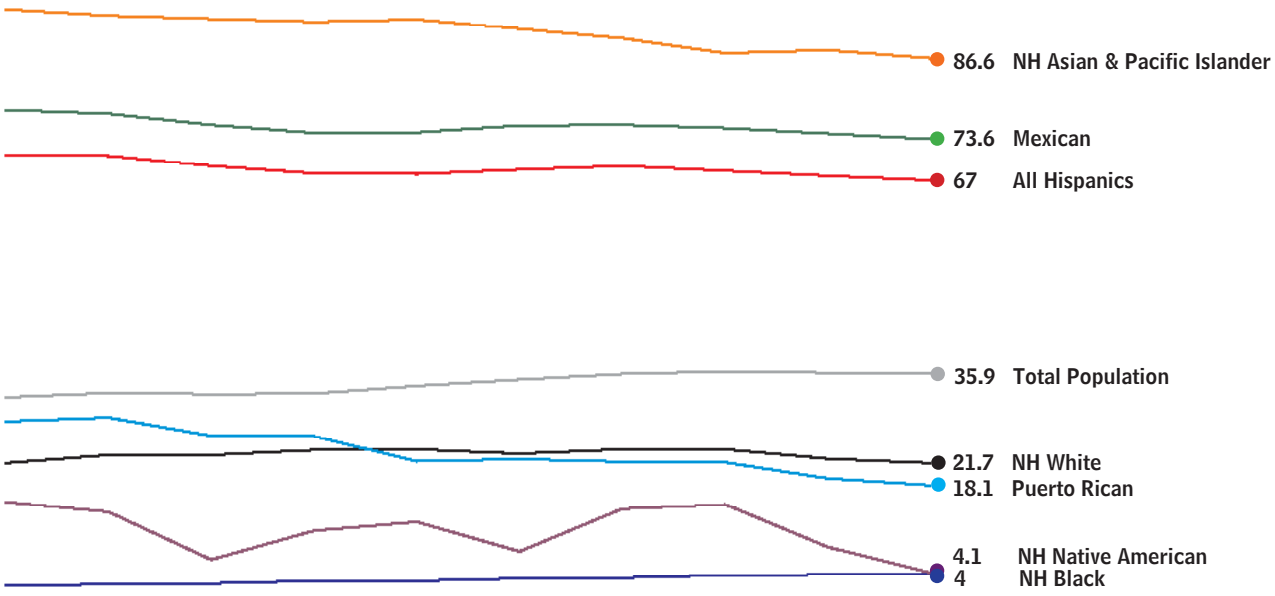

Figure 2. Percent of Births to Mothers Born Outside of the U.S. by Ethnicity, 1995-2004

Table 2.4 Multiple Ethnicity Births to Chicago Residents by Maternal Ethnicity, 1995-2004 Combined

Ethnic Group	Percent of Births with Fathers of Different Ethnicity
NH Asian	17
NH Black	2.8
NH Native American	75.2
NH White	10.7
All Hispanics	15.9
Mexican	8.8
Puerto Rican	42.9

Source: IDPH Birth Files

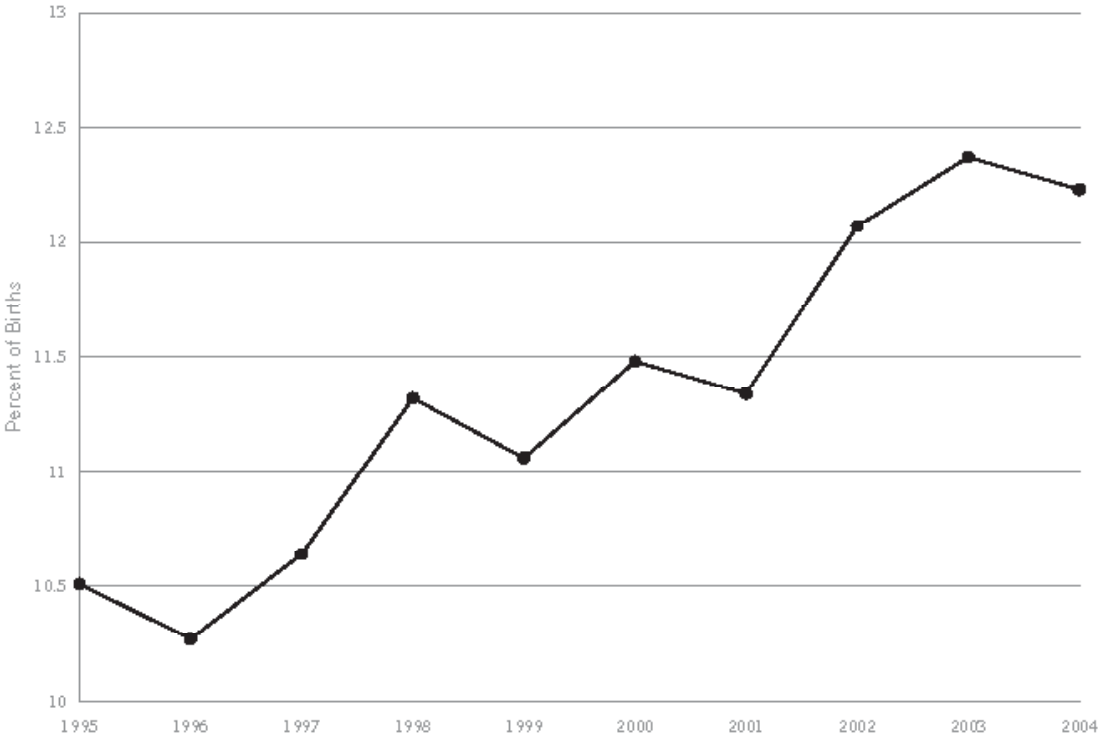

Figure 3. Percent of Births with Parents of Different Ethnicities

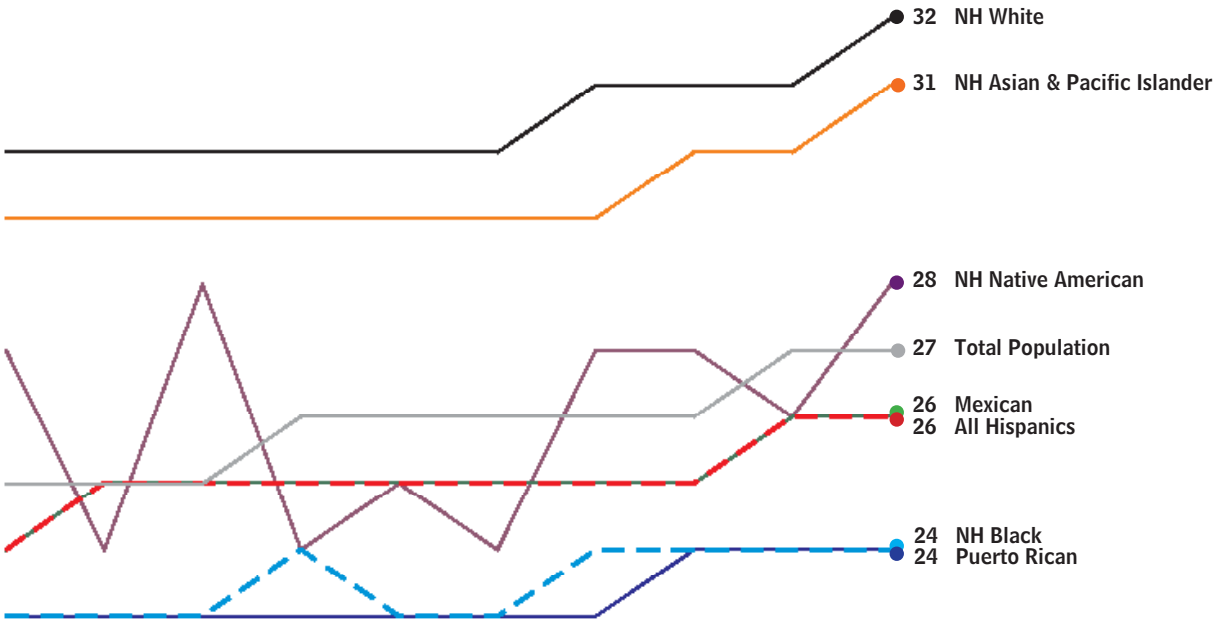

Figure 4. Maternal Median Age at Birth by Ethnicity, 1995-2004

For the years 1995-2004, the youngest mother was 10, and the oldest, 54. The youngest father was 11, and the oldest, 87.

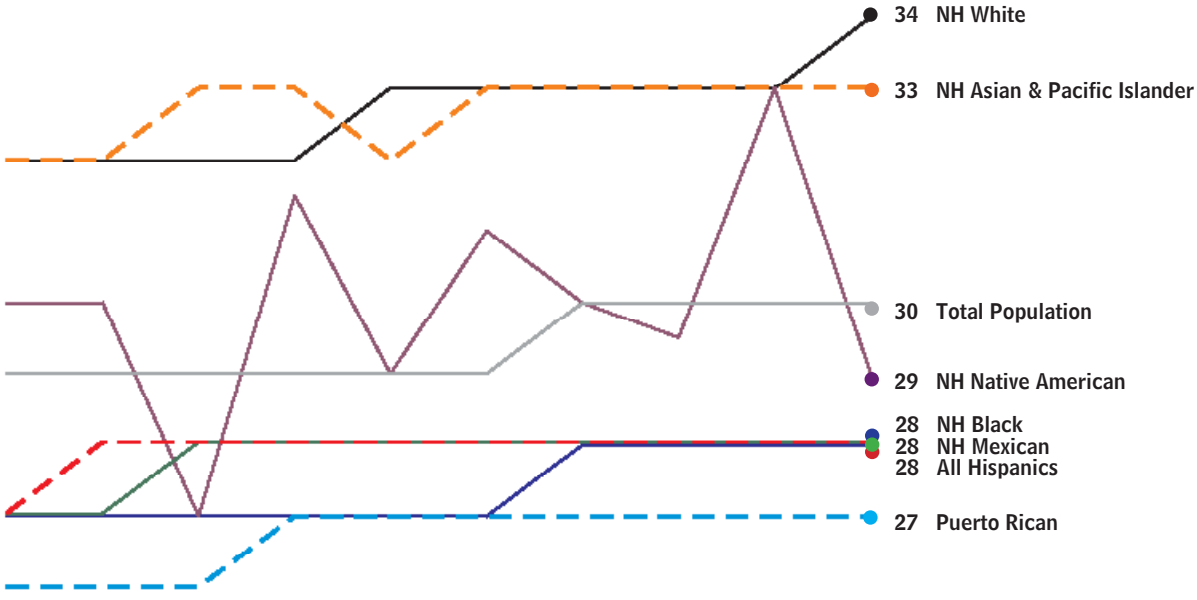

Figure 5. Paternal Median Age at Birth by Ethnicity, 1995-2004

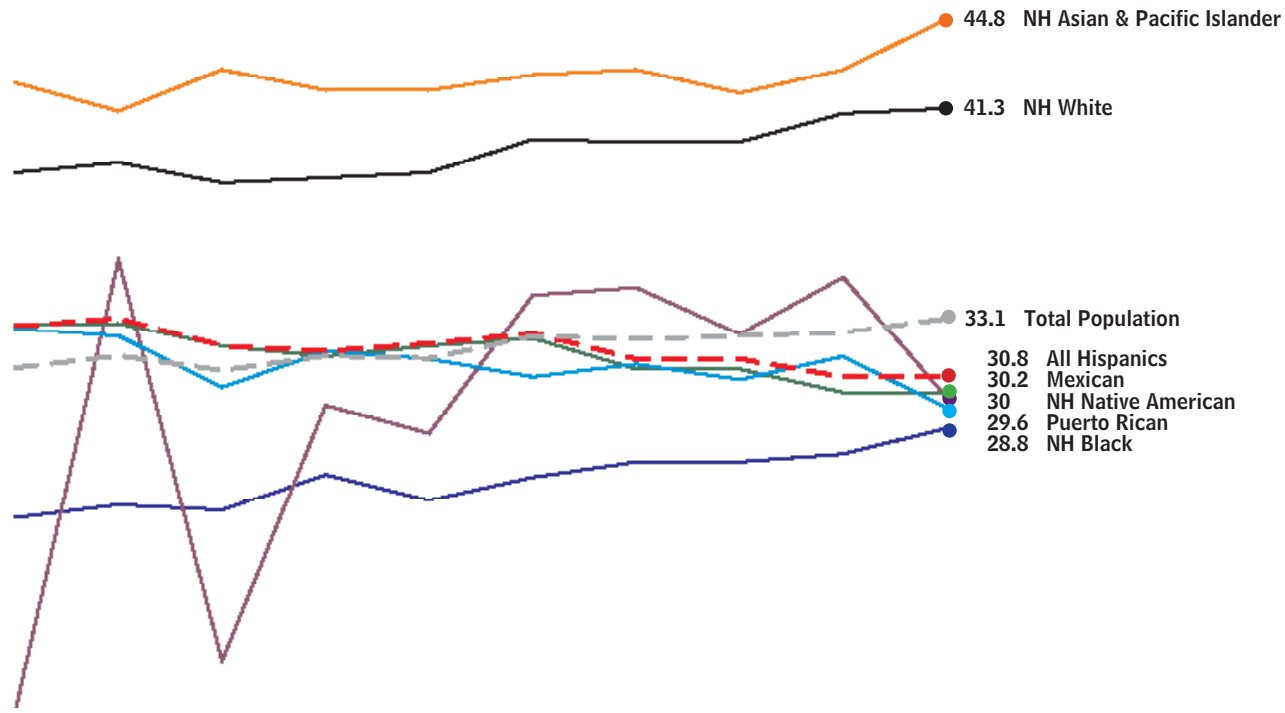

Figure 6. Percent of Births by First Birth and Ethnicity, 1995-2004

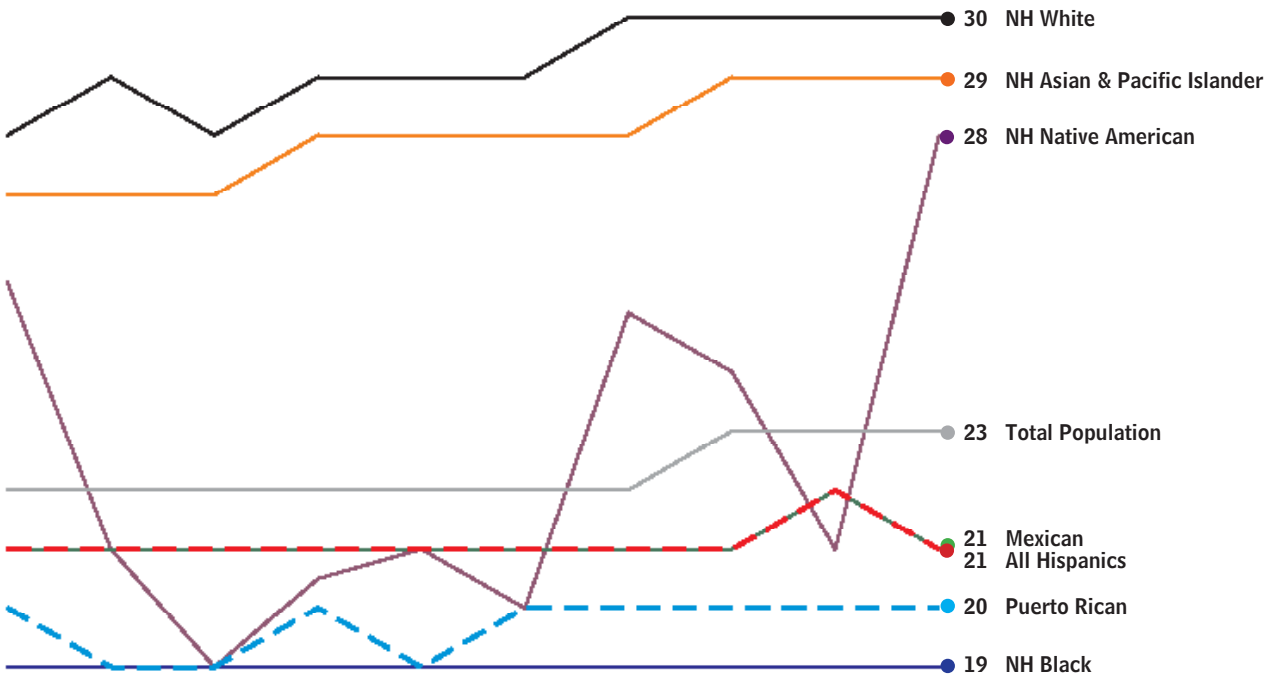

Figure 7. Maternal Median Age at First Birth by Ethnicity, 1995-2004

Table 2.5 Multiple Birth Percentage for Chicago Residents by Maternal Ethnicity, 1995-2004

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	2.6	3	*	3.6	1.7	1.6	2.5	2.7
1996	2.3	3.2	9.2†	3.8	1.7	1.6	2.6	2.8
1997	2	3.1	9.1†	3.8	2.2	2.1	2.5	2.9
1998	2.2	3.4	*	4.1	1.8	1.7	3	2.9
1999	2	3.4	*	4	1.9	1.9	2.4	2.9
2000	1.9	3.5	*	4.5	1.8	1.7	2.6	3.1
2001	2.5	3.7	*	5	2.3	2.1	2.4	3.4
2002	2.7	3.8	*	5.2	1.9	1.7	1.7	3.3
2003	1.7	4.1	*	5.6	2.2	2	3.1	3.6
2004	2.5	3.7	*	5.6	2.1	1.9	4.3	3.5

Source: IDPH Birth Files

*Percentages suppressed for fewer than 6 events.
† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 2.6 Number and Rate of Teen Births for Chicago Residents by Maternal Ethnicity, 1994-2005

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	49	7.2	6,265	74	8	22.6†	669	19.8	3,200	55.8	10,211	55.8
1996	53	7.6	5,925	72.2	16	46†	621	19.8	3,077	52.6	9,696	54.1
1997	58	8.2	5,734	72.2	10	29.2†	557	19.3	2,915	48.8	9,279	52.8
1998	56	7.8	5,723	74.5	13	38.6†	538	20.4	2,933	48.2	9,272	54
1999	64	8.8	5,134	69.2	9	27.3†	478	20	2,948	47.5	8,637	51.3
2000	61	9.1	4,688	52.2	13	40†	420	12.4	2,978	46.1	8,162	41.2
2001	65	16.4	4,320	59.5	1	*	355	12.1	2,900	50.2	7,645	44.2
2002	34	12.7	3,847	46	5	*	343	10.4	2,675	43.6	6,906	37.3
2003	41	6.4	3,614	43.6	8	25.8†	291	10.9	2,510	40.5	6,469	35.7
2004	47	6	3,491	40.6	4	*	272	8.5	2,545	46.6	6,365	34.6

Source: IDPH Birth Files

*Rates suppressed for fewer than 6 events.
† Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.

Pregnancy and Birth

3

Table 3.1 Births to Chicago Residents with Maternal Medical Risk Factors during Pregnancy by Maternal Ethnicity, 2004

Ethnic Group	Percent of Births with Medical Risk Factors
NH Asian	20.3
NH Black	35.7
NH Native American	44
NH White	28.7
All Hispanics	24.5
Mexican	23.6
Puerto Rican	32.8
Total Population	29.2

Source: IDPH Birth Files

Table 3.2 Percentage of Births with Early Initiation of Prenatal Care, Chicago Residents by Maternal Ethnicity, 1995-2004§

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	74.1	66.6	69	84.6	72.3	72	75	72.4
1996	78.4	68.4	69.8	85.7	73.7	73.1	76.2	74.2
1997	82.8	68.9	66.7	87.8	74.6	74.6	74.5	75.2
1998	82.6	69	65.3	88.6	75	75.2	74.4	75.6
1999	78.4	69.3	62.2	86	72.5	72.7	69.7	74.2
2000	75.3	70.4	64	85.9	72.6	73	71.7	74.6
2001	78.2	72.6	85.3	88.1	79	79.2	79	78.4
2002	81.9	74.1	67.5	90.2	80	80.3	78.9	80.2
2003	83.4	73.7	87	90.4	82.3	82.3	81.9	81
2004	87.3	73.6	87	91.5	82.9	83.4	79.4	81.6

Source: IDPH Birth Files

§ Percentages are not the same as those reported in the 2006 report. We have refined our methodology to exclude births with unknown prenatal care in the denominator.

Table 3.3 Percentage of Births with Inadequate Prenatal Care, Chicago Residents by Maternal Ethnicity, 1995-2004§

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	12.3	19.1	19.7†	8.5	11.5	10.8	13.3	14.2
1996	12.9	18.3	23.1†	8.2	11.8	11.7	11.5	13.8
1997	13.1	17.2	13.8†	7.3	10.8	10.2	12.5	12.8
1998	12.8	16.7	16.4†	7.7	10.6	10	12.9	12.6
1999	13.8	17.4	25†	10.6	14.5	13.2	20.3	14.8
2000	12	16.3	22.6†	8.4	10.3	10.1	11.6	12.3
2001	15.5	14.9	17.1†	9.3	9.5	9.1	11.9	11.7
2002	14	14.9	22.5†	8.5	9.6	8.9	12	11.5
2003	19.8	16.5	14.6†	11.8	11.7	10.7	16.6	13.8
2004	22.5	18	30†	12.5	15.3	14.3	19.8	16

Source: IDPH Birth Files

§ Percentages are not the same as those reported in the 2006 report. We have refined our methodology to exclude births with unknown prenatal care in the denominator.

† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 3.4 Percentage of Births with No Prenatal Care, Chicago Residents by Maternal Ethnicity, 1995-2004§

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	0.4†	5.1	*	1.3	1.4	1.4	1.3	2.9
1996	1.4	5.6	*	1.6	1.6	1.6	1.8	3.3
1997	1.9	5.5	*	1	1.5	1.3	2.5	3.1
1998	2.1	5.2	*	1.4	1.5	1.3	2.1	3
1999	2.7	5.4	*	2.4	2.1	1.8	3.2	3.5
2000	1.4	4.7	*	1.4	1.7	1.4	3.4	2.8
2001	0.6†	4	*	0.8	0.9	0.8	1.9	2.1
2002	0.4†	3.8	*	0.6	0.7	0.7	1†	1.8
2003	*	4.1	*	0.6	0.6	0.5	1.1†	1.8
2004	0.3†	3.3	*	0.5	0.8	0.7	0.9†	1.6

Source: IDPH Birth Files

§ Percentages are not the same as those reported in the 2006 report. We have refined our methodology to exclude births with unknown prenatal care in the denominator.

*Percentages suppressed for fewer than 6 events.

† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 3.5 Chicago Resident Births in Other Communities, 1995-2004§

Year	Percent of Births Outside Chicago
1995	16.2
1996	16.5
1997	16.9
1998	17.4
1999	17.7
2000	17.2
2001	17.5
2002	17.5
2003	17.4
2004	17.3

Source: IDPH Birth Files

§ Percentages are not the same as those reported in previous reports. We have refined our methodology to exclude non-resident births.

Table 3.6 Type of Birth Attendant, Chicago Residents by Maternal Ethnicity, 1995-2004

Year	Attendant	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	M.D.	96.1	91.1	93.7	93.5	94.6	94.3	96.4	93
	Certified Nurse Midwife	1.8	4.1	*	3	2.6	2.6	1.9	3.3
	Osteopath	1.5	3.1	*	2.3	0.9	0.8	0.9	2.1
	Other[§]	0.6[†]	1.6	*	1.1	2	2.2	0.8[†]	1.6
1996	M.D.	95.7	91	95.4	93.9	93	92.5	95.7	92.5
	Certified Nurse Midwife	2	3.8	*	3.3	3.7	3.9	2.3	3.6
	Osteopath	2.2	3.4	*	2	1.1	1.1	1.2	2.3
	Other	*	1.8	*	0.7	2.2	2.5	0.9	1.7
1997	M.D.	96.8	92.3	95.5	95	92.4	91.7	95.8	93
	Certified Nurse Midwife	1.2	2.9	*	2.5	4.3	4.5	2.5	3.2
	Osteopath	1.3	2.7	*	1.7	1	1	0.9	1.9
	Other	0.7[†]	2.1	*	0.8	2.4	2.8	0.7[†]	1.9
1998	M.D.	97.6	91.5	93.2	95	91	90.3	94.3	92.3
	Certified Nurse Midwife	0.9[†]	3.3	*	2.5	5.1	5.4	3.7	3.7
	Osteopath	1.1	2.8	*	1.7	0.9	0.9	1	1.9
	Other	0.4[†]	2.4	*	0.8	2.9	3.4	1	2.2
1999	M.D.	96.4	93.2	95.9	94.9	89.7	88.8	94.5	92.4
	Certified Nurse Midwife	1.7	2.9	*	2.4	4.1	4.2	2.8	3.2
	Osteopath	0.8[†]	1.5	*	1.7	0.8	0.8	0.3[†]	1.2
	Other	1.1	2.4	*	1	5.5	6.2	2.4	3.2
2000	M.D.	97	92.1	90.6	94.5	87.1	86.3	93	91
	Certified Nurse Midwife	1.9	5.2	*	3.5	11.5	12.3	6.2	7
	Osteopath	0.8[†]	2.4	*	1.8	1.1	1	0.5[†]	1.7
	Other	0.3[†]	0.3	*	0.2	0.4	0.4	0.3[†]	0.3

Source: IDPH Birth Files

[§] Other includes other midwife, parent and other.
*Percentages suppressed for fewer than 6 events.
[†] Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 3.6 Type of Birth Attendant, Chicago Residents by Maternal Ethnicity, 1995-2004 (Cont'd)

Year	Attendant	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
2001	M.D.	96	92.4	94.3	94.1	87.5	86.8	93.4	91.1
	Certified Nurse Midwife	2.8	5.1	*	3.9	11	11.7	5.9	7
	Osteopath	1†	2	*	1.7	1.1	1.1	0.6†	1.6
	Other	*	0.4	*	0.2	0.4	0.4	*	0.3
2002	M.D.	95.7	92.8	87.5	93.9	84.9	84.3	91.7	90.2
	Certified Nurse Midwife	3.5	5.3	*	4.1	14	14.5	7.6	8.3
	Osteopath	0.7†	1.5	*	1.8	0.8	0.9	0.4†	1.3
	Other	*	0.5	*	0.1†	0.2	0.2	*	0.3
2003	M.D.	96.2	92	85.7	93.9	88.9	88.3	93.3	91.4
	Certified Nurse Midwife	2.6	5.4	*	4.2	9.7	10.3	5.9	6.7
	Osteopath	0.5	1.7	*	1.6	0.9	1	0.3†	1.4
	Other	0.7	0.7	*	0.3	0.4	0.4	0.5†	0.5
2004	M.D.	95.7	91.7	84	93.6	88.9	88.4	92.1	91.2
	Certified Nurse Midwife	3.6	5.5	*	4	10	10.4	7.4	6.8
	Osteopath	0.4†	2.1	*	2	0.8	0.9	0.3†	1.5
	Other	0.3†	0.7	*	0.4	0.4	0.4	*	0.5

Source: IDPH Birth Files

§ Other includes other midwife, parent and other.
*Percentages suppressed for fewer than 6 events.
† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 3.7 Chicago Resident Births with Labor and Delivery Complications, 1995-2004

Year	Percent of Births with Labor and Delivery Complications
1995	24.6
1996	25
1997	29.8
1998	30.5
1999	30.6
2000	29
2001	27.9
2002	26.1
2003	26.8
2004	27.5

Source: IDPH Birth Files

Table 3.8 Percentage of Births with Obstetric Procedures, Chicago Residents, 1995-2004

Year	Amniocentesis	Electronic Monitoring	Induction of Labor	Stimulation of Labor	Tocolysis	Ultrasound	Other Procedures
1995	1.1	84.8	0.3	0.4	0	1.8	0.1
1996	1.2	86.2	0.4	0.4	0	1.2	0.2
1997	1.4	87.6	0.5	0.4	0†	1.2	0.3
1998	1.8	89	0.6	0.5	0†	1.2	0.2
1999	1.9	89.3	0.7	0.8	0†	1.4	0.1
2000	2	88	1	0.9	*	1.8	0.1
2001	1.7	91.4	0.9	1	*	1.4	0.2
2002	2.3	90.8	1	0.9	0†	1.8	0.2
2003	2.4	90.7	0.9	0.6	0†	2.2	0.1
2004	2.2	87.9	1.4	0.6	0†	2.2	0.1

Source: IDPH Birth Files

*Percentages suppressed for fewer than 6 events.
† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 3.9 Delivery Method, Chicago Residents, 1995-2004[§]

Year	Vaginal	Assisted Vaginal*	Vaginal After Caesarean[†]	Primary Caesarean	Repeat Caesarean
1995	74.8	5	2.2	11.7	6.4
1996	75.6	5.3	2.3	10.7	6
1997	74.5	5.8	2.8	10.9	5.9
1998	74.1	5.5	2.7	11.6	6.1
1999	73.5	5.5	2.6	11.8	6.6
2000	73.4	5.1	2.5	12.2	6.8
2001	72.7	5	2.2	12.7	7.4
2002	71.3	4.9	1.8	14	8
2003	69.9	5	1.6	14.9	8.7
2004	68.8	4.8	1.4	15.9	9.1

Source: IDPH Birth Files

[§] Percentages are not the same as those reported in previous reports. See Methods section for more information.
*Includes use of forceps and/or vacuum.
[†] Assisted vaginal births were placed in this category if there had been a prior Caesarean section.

Chicago Infants

4

Table 4.1 Most Popular Baby Names, Chicago Residents, 2004

BOYS			GIRLS		
NH Black	NH White	Hispanic	NH Black	NH White	Hispanic
Ja(y)len	Michael	Angel	Kayla	Grace	Ashley
Michael	Jack	Daniel	Jada	Emily	Emily
Jeremiah	John	Jose	Destiny	Julia	Jocelyn
Joshua	Jacob	Luis	Makayla	Olivia	Jennifer
Christopher	Joseph	Anthony	Jayla	Elizabeth	Stephanie
Anthony	William	David	Aaliyah	Ava	Andrea
Elijah	Alexander	Jonathan	Diamond	Sophia	Isabella
Isaiah	Nicholas	Juan	Brianna	Abigail	Alondra
Christian	Daniel	Kevin	Kyla	Isabella	Diana
Kenneth	Matthew	Alexander	Jasmine	Anna	Evelyn

Source: IDPH Birth Files

Table 4.2 Percentage of Births that Were Premature, Chicago Residents by Maternal Ethnicity, 1995-2004§

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	7.6	15.9	13.9†	8.8	8.5	7.7	11.6	11.7
1996	9.1	15.9	19†	9.1	8.5	7.9	11.8	11.8
1997	9.6	15.4	12.3†	8.6	9.1	8.3	13.3	11.7
1998	8.5	15.1	*	8.6	9	8.4	12.9	11.4
1999	7.8	16	*	8.5	8.6	8.2	12.3	11.5
2000	7.8	15.6	18.9†	9.1	8.8	8.2	12.9	11.4
2001	9.1	15.4	17.6†	9.5	8.5	8	11.7	11.3
2002	10.1	15.7	*	9.7	8.7	7.9	13.9	11.5
2003	8.9	15.9	*	9.9	8.7	8	12.9	11.5
2004	8.6	16.1	*	9.9	9.2	8.7	13.9	11.7

Source: IDPH Birth Files

§ Percentages are not the same as those reported in the 2006 report. We have refined our methodology to exclude births with unknown prenatal care in the denominator.

*Percentages suppressed for fewer than 6 events.

† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 4.3 Percentage of All Singleton Births that Were Low Birthweight, Chicago Residents by Maternal Ethnicity, 1995-2004

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	7.8	14	*	5.7	5.5	4.9	8.7	9.3
1996	7.1	14.1	*	5.4	5.4	5	8	9.1
1997	7.6	13.3	*	5.3	5.8	5	9.2	8.9
1998	8	13.5	11.1†	4.9	6	5.2	9.6	8.9
1999	7.1	13.2	*	4.6	5.8	5.4	9.6	8.5
2000	7.1	12.8	11.8†	4.6	5.4	5	8.6	8.2
2001	7.3	12.9	*	4.9	5.9	5.5	9.1	8.3
2002	7.6	13.1	*	5.1	5.5	4.9	10	8.2
2003	7.4	13.4	*	4.8	5.4	4.9	9	8.2
2004	6.5	13.2	*	4.7	5.9	5.8	8.1	8.2

Source: IDPH Birth Files

*Percentages suppressed for fewer than 6 events.

† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 4.4 Percentage of Full Term Singleton Births that Were Low Birthweight, Chicago Residents by Maternal Ethnicity, 1995-2004

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	4.7	6.4	*	2.3	2.3	2	3.6	4.1
1996	3.9	6.3	*	2.1	2.2	2	3.7	3.9
1997	3.6	5.8	*	2	2.2	1.9	3.5	3.6
1998	4.1	6.1	*	2	2.5	2.2	3.9	3.9
1999	4	5.6	*	1.9	2.5	2.3	4.7	3.6
2000	3.9	5.6	*	1.7	2.3	2.1	3.8	3.4
2001	4.1	5.7	*	2	2.4	2.3	4.3	3.6
2002	3.2	5.6	*	2	2.2	2	4.5	3.3
2003	3.7	5.7	*	1.8	2.2	2	4	3.3
2004	3	5	*	1.5	2.1	2	2.9	3

Source: IDPH Birth Files

*Percentages suppressed for fewer than 6 events.
† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 4.5 Percentage of Births with Maternal Smoking during Gestation, Chicago Residents by Maternal Ethnicity, 1995-2004

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	1.1	16.1	7.6†	11.1	2.2	1.2	7.7	9.9
1996	0.9†	16.8	*	10.2	2.3	1.3	8	10
1997	1.1	16.2	26.2†	9.3	2.2	1.1	9	9.5
1998	0.9†	15.1	18.9†	8.7	2.2	1.2	7.8	8.8
1999	0.8†	14.9	16.3†	8.8	2	1.2	8	8.5
2000	0.5†	14.3	11.5†	7.4	1.9	0.9	8.3	7.8
2001	1.1	14	*	6	1.7	0.9	8.1	7.2
2002	0.7†	13.6	15†	6.1	1.5	0.8	6.7	6.8
2003	1	12.9	14.3†	5.1	1.3	0.8	5	6.2
2004	0.9	11.7	*	4.7	1.3	0.9	4.6	5.6

Source: IDPH Birth Files

*Percentages suppressed for fewer than 6 events.
† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 4.6 Percentage Low Birthweight by Selected Maternal Characteristics, Chicago Residents by Maternal Ethnicity, 2004

Maternal Characteristic		NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
Age	< 20 (Teen)	*	15	*	7.4†	8.2	7.8	11	11.9
	20-34	7.5	14.5	*	7.1	6.7	6.4	10.1	9.4
	35+	10.1	19.6	*	8.7	8.1	7.9	11.7†	11.1
Education	< 12 Years	10.2†	17	*	10.7	6.8	6.5	10.6	10.5
	≥ 12 Years	7.6	14.2	*	7.1	7.4	7.1	10.2	9.7
Education, Mother's Age 25+	< 12 Years	10†	21.4	*	10	6.5	6.2	12.5†	9.9
	≥ 12 Years	7.8	14.8	*	7.1	7.6	7.2	11.9	9.4
Kessner Index	Inadequate PNC	9.4	20.4	*	11.9	10.6	9.2	19.7	14.6
	Adequate/ Intermediate PNC	7.4	13.8	*	6.9	6.4	6.3	8.3	9.1
Mother Smokes	Smoker	*	22.9	*	14.9	11.9	9.9†	13.9†	20.4
	Non-Smoker	8.1	14	*	7.1	7	6.7	10.3	9.4
Previous Reproductive Loss	0	8.1	14.3	*	7.1	6.8	6.5	10.9	9.4
	≥ 1	8.1	16.9	*	8.4	8.5	7.9	9.5	11.9
Interbirth Interval	No Previous Births	7.1	13.5	*	6.9	8.2	8.2	11.4	9.4
	< 18 Months	19.4	22.8	*	19.7	13.1	11.9	18.2	18.8
	≥ 18 Months	6.4	13.6	*	4.8	5.2	5	8.4	8.3
Weight Gain	< 25 Lbs	11.5	21.9	*	11.7	9.2	8.8	14.6	14.4
	≥ 25 Lbs	6.4	11.4	*	6.3	5.6	5.3	7.8	7.8

Source: IDPH Birth Files

*Percentages suppressed for fewer than 6 events.
† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Table 4.7 Percentage of Premature Births by Selected Maternal Characteristics, Chicago Residents by Maternal Ethnicity, 2004

Maternal Characteristic		NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
Age	< 20 (Teen)	*	15	*	8.9	10	9.5	14	12.7
	20-34	8	15.9	*	9.3	8.8	8.3	13.5	11.2
	35+	11.5	20	*	11.6	11.5	11	17.4	13.4
Education	< 12 Years	10†	17.8	*	9.8	9.1	8.7	14.1	12.1
	≥ 12 Years	8.2	15.2	*	9.8	9.4	8.9	13.5	11.5
Education, Mother's Age 25+	< 12 Years	13.2†	22.1	*	9.2	8.9	8.6	13.9	11.8
	≥ 12 Years	8.9	16.6	*	9.9	9.9	9.2	16.2	11.7
Kessner Index	Inadequate PNC	9.7	23.6	*	15.3	14.5	13	25.2	17.9
	Adequate/ Intermediate PNC	8	14.3	*	9.1	8.2	7.9	11.2	10.4
Mother Smokes	Smoker	*	21.9	*	12.9	14.2	13.8†	13.9†	19.5
	Non-Smoker	8.6	15.3	*	9.8	9.2	8.7	13.9	11.3
Previous Reproductive Loss	0	7.8	15.2	*	9.2	8.7	8.3	13.5	10.8
	≥ 1	11.9	18.3	*	11.9	11.5	10.8	15.1	14.5
Interbirth Interval	No Previous Births	7.1	12.7	*	8.4	9.3	9.4	12.5	9.9
	< 18 Months	17.6	25.6	*	22.5	16.5	14.8	25.5	21.6
	≥ 18 Months	7.2	15	*	7.6	7.5	7.2	11	10.3
Weight Gain	< 25 Lbs	12.9	21.7	*	13.9	11.4	10.9	18.3	15.7
	≥ 25 Lbs	6.7	12.8	*	8.8	7.8	7.3	11.6	9.7

Source: IDPH Birth Files

*Percentages suppressed for fewer than 6 events.
† Use caution when interpreting percentages based on 20 or fewer events. See Methods section for more information.

Infant Mortality

5

Table 5.1 Fetal and Infant Mortality, Chicago Residents[§], 1995-2004

Year	Fetal Deaths	Rate	Infant Deaths	Rate
1995	510	9.3	677	12.4
1996	468	8.8	592	11.2
1997	410	8	550	10.8
1998	438	8.4	577	11.2
1999	444	8.7	588	11.6
2000	485	9.4	542	10.7
2001	435	8.7	442	8.9
2002	357	7.4	421	8.8
2003	364	7.5	454	9.4
2004	349	7.4	405	8.7

Source: IDPH Fetal Death and Matched Files

[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.2 Infant Mortality Rate, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	6.2[†]	18.6	*	7.8	7.9	7.1	8.9	12.4
1996	5.1[†]	17.9	*	5.9	6.6	6.2	9	11.2
1997	4.6[†]	16.2	*	7.5	6.7	6.3	9.4	10.8
1998	9.7[†]	17.2	*	6.7	6.8	6.4	9[†]	11.2
1999	7.9[†]	17.9	*	7.1	7.7	7.8	8.6[†]	11.6
2000	7.5[†]	16.4	*	5.4	8	7.2	14.2	10.7
2001	5[†]	14.7	*	5	5.7	5.5	7.2[†]	8.9
2002	7.5[†]	15.9	*	3.5	5.2	4.3	9.4[†]	8.8
2003	*	16.6	*	6	5.8	5.6	5.5[†]	9.4
2004	4.2[†]	14.7	*	4.6	6.2	6	7.6[†]	8.7

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.3 Neonatal Mortality Rate, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	3.1[†]	11.4	*	5.3	5.1	4.8	5.3[†]	7.8
1996	3.6[†]	10.6	*	4	3.4	3.3	3.9[†]	6.6
1997	3.5[†]	9.7	*	5.6	4.4	4.2	4.5[†]	6.8
1998	7.1[†]	9.3	*	4.5	4.3	4.2	5[†]	6.6
1999	3.9[†]	11.7	*	5.3	5.5	5.5	5.8[†]	7.9
2000	5.6[†]	10.2	*	4.2	5.2	4.6	10	7
2001	4[†]	9.3	*	3.6	4	3.9	3.6[†]	5.9
2002	6.5[†]	8.5	*	3	3.7	3.2	6.1[†]	5.4
2003	*	10.9	*	4.5	3.9	3.7	3.8[†]	6.4
2004	3.3[†]	9	*	3.3	4.2	4.1	4.7[†]	5.6

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.4 Postneonatal Mortality Rate, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian	NH Black	NH Native American	NH White	All Hispanics	Mexican	Puerto Rican	Total Population
1995	3.1[†]	7.2	*	2.4	2.8	2.3	3.7[†]	4.6
1996	*	7.3	*	1.9	3.2	2.8	5.2[†]	4.6
1997	*	6.3	*	1.8[†]	2.3	2.1	4.5[†]	3.8
1998	*	7.8	*	2.2	2.5	2.2	4.1[†]	4.6
1999	3.9[†]	6.2	*	1.8[†]	2.1	2.2	*	3.7
2000	*	6.1	*	1.2[†]	2.8	2.6	4.3[†]	3.7
2001	*	5.4	*	1.5[†]	1.8	1.6	3.6[†]	3
2002	*	7.3	*	0.6[†]	1.5	1.1[†]	3.3[†]	3.4
2003	*	5.7	*	1.4[†]	1.9	1.9	*	3.1
2004	*	5.6	*	1.3[†]	2	1.9	*	3.1

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.5 Infant Mortality for Short Gestation and Low Birthweight, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Mexican		Puerto Rican		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	0	*	108	5.1	0	*	17	1.7[†]	22	1.4	15	1.2[†]	4	*	148	2.7
1996	2	*	81	4	0	*	11	1.1[†]	20	1.3[†]	13	1[†]	4	*	114	2.2
1997	1	*	54	2.8	0	*	13	1.4[†]	26	1.7	22	1.8	4	*	94	1.8
1998	3	*	56	2.9	0	*	14	1.5[†]	18	1.1[†]	12	1[†]	3	*	91	1.8
1999	2	*	89	4.5	0	*	19	1.8[†]	28	1.6	17	1.2[†]	7	3.4[†]	138	2.7
2000	1	*	73	3.8	0	*	14	1.3[†]	37	2	22	1.5	11	5.2[†]	125	2.5
2001	1	*	63	3.4	0	*	12	1.2[†]	29	1.6	21	1.4	2	*	105	2.1
2002	1	*	55	3.2	0	*	7	0.7[†]	21	1.2	12	0.8[†]	4	*	84	1.8
2003	3	*	66	3.9	0	*	17	1.6[†]	20	1.1[†]	16	1.1[†]	2	*	106	2.2
2004	2	*	57	3.5	0	*	11	1.1[†]	19	1.1[†]	14	1[†]	2	*	89	1.9

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.6 Infant Mortality for Congenital Anomalies, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Mexican		Puerto Rican		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	3	*	55	2.1	0	*	18	1.5[†]	37	1.9	25	1.7	7	2.6[†]	113	2.1
1996	2	*	44	1.8	1	*	20	1.6[†]	28	1.4	24	1.6	1	*	95	1.8
1997	3	*	45	1.9	0	*	24	2.1	32	1.7	25	1.7	2	*	104	2
1998	5	*	35	1.5	0	*	18	1.5[†]	22	1.1	19	1.3[†]	1	*	80	1.6
1999	3	*	40	2	0	*	16	1.5[†]	27	1.5	22	1.5	2	*	86	1.7
2000	7	3.3[†]	29	1.5	1	*	19	1.8[†]	30	1.6	23	1.6	3	*	86	1.7
2001	4	*	29	1.6	0	*	7	0.7[†]	21	1.1	17	1.1[†]	3	*	61	1.2
2002	3	*	37	2.2	0	*	13	1.2[†]	18	1[†]	10	0.7[†]	4	*	71	1.5
2003	0	*	30	1.8	0	*	11	1[†]	23	1.3	19	1.3[†]	1	*	65	1.4
2004	2	*	30	1.9	0	*	8	0.8[†]	21	1.2	17	1.2[†]	2	*	61	1.3

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.7 Infant Mortality for SIDS, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Mexican		Puerto Rican		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	3	*	61	2.7	0	*	11	1[†]	9	0.5[†]	4	*	3	*	84	1.5
1996	0	*	71	3.3	0	*	6	0.6[†]	14	0.8[†]	11	0.8[†]	1	*	91	1.7
1997	0	*	51	2.5	0	*	5	*	7	0.4[†]	5	*	2	*	63	1.2
1998	1	*	57	2.8	0	*	6	0.6[†]	8	0.5[†]	6	0.5[†]	1	*	72	1.4
1999	2	*	35	1.8	0	*	2	*	5	*	5	*	0	*	44	0.9
2000	0	*	27	1.4	0	*	1	*	10	0.5[†]	7	0.5[†]	2	*	38	0.7
2001	0	*	30	1.6	0	*	0	*	6	0.3[†]	2	*	3	*	36	0.7
2002	1	*	25	1.5	0	*	2	*	3	*	0	*	1	*	31	0.6
2003	0	*	24	1.4	0	*	2	*	4	*	3	*	0	*	30	0.6
2004	0	*	31	1.9	0	*	0	*	4	*	2	*	1	*	35	0.8

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.8 Infant Mortality for Infant Accidents, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Mexican		Puerto Rican		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	0	*	19	0.8[†]	0	*	2	*	2	*	1	*	0	*	23	0.4
1996	0	*	9	0.4[†]	0	*	0	*	7	0.4[†]	5	*	1	*	16	0.3[†]
1997	0	*	7	0.3[†]	0	*	0	*	2	*	1	*	1	*	9	0.2[†]
1998	0	*	9	0.4[†]	0	*	3	*	1	*	1	*	0	*	13	0.3[†]
1999	2	*	11	0.6[†]	0	*	1	*	2	*	2	*	0	*	16	0.3[†]
2000	1	*	17	0.9[†]	0	*	0	*	6	0.3[†]	5	*	1	*	24	0.5
2001	0	*	14	0.8[†]	0	*	2	*	1	*	1	*	0	*	17	0.3[†]
2002	0	*	25	1.5	0	*	0	*	1	*	1	*	0	*	26	0.5
2003	0	*	16	0.9[†]	0	*	1	*	1	*	1	*	0	*	18	0.4[†]
2004	0	*	6	0.4[†]	0	*	1	*	4	*	4	*	0	*	11	0.2[†]

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.9 Infant Mortality for Respiratory Distress Syndrome, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Mexican		Puerto Rican		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	1	*	19	0.8[†]	0	*	3	*	8	0.5[†]	2	*	2	*	31	0.6
1996	1	*	24	1.1	0	*	5	*	5	*	4	*	1	*	35	0.7
1997	1	*	17	0.8[†]	0	*	4	*	4	*	3	*	1	*	26	0.5
1998	0	*	25	1.2	0	*	2	*	10	0.6[†]	10	0.7[†]	0	*	37	0.7
1999	1	*	21	1.1	0	*	3	*	6	0.3[†]	6	0.4[†]	0	*	31	0.6
2000	0	*	9	0.5[†]	0	*	1	*	7	0.4[†]	5	*	1	*	17	0.3[†]
2001	0	*	16	0.9[†]	0	*	1	*	8	0.4[†]	6	0.4[†]	2	*	25	0.5
2002	1	*	5	*	0	*	1	*	4	*	3	*	1	*	11	0.2[†]
2003	0	*	5	*	0	*	3	*	7	0.4[†]	7	0.5[†]	0	*	15	0.3[†]
2004	0	*	7	0.4[†]	0	*	4	*	7	0.4[†]	7	0.5[†]	0	*	18	0.4[†]

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.10 Infant Mortality for Neonatal Hemorrhage, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Mexican		Puerto Rican		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	0	*	6	0.4[†]	0	*	1	*	1	*	0	*	0	*	8	0.1[†]
1996	0	*	9	0.6[†]	0	*	1	*	3	*	3	*	0	*	13	0.2[†]
1997	0	*	8	0.5[†]	0	*	4	*	3	*	1	*	0	*	15	0.3[†]
1998	0	*	9	0.6[†]	0	*	1	*	2	*	1	*	0	*	12	0.2[†]
1999	0	*	6	0.3[†]	0	*	1	*	3	*	2	*	0	*	10	0.2[†]
2000	0	*	12	0.6[†]	0	*	2	*	4	*	3	*	1	*	18	0.4[†]
2001	1	*	3	*	0	*	3	*	2	*	2	*	0	*	9	0.2[†]
2002	0	*	4	*	0	*	0	*	2	*	1	*	1	*	6	0.1[†]
2003	0	*	11	0.7[†]	0	*	1	*	5	*	4	*	1	*	17	0.4[†]
2004	1	*	3	*	0	*	1	*	5	*	3	*	2	*	10	0.2[†]

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.11 Infant Mortality for Complications of Pregnancy, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Mexican		Puerto Rican		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	3	*	18	0.8[†]	0	*	10	0.9[†]	7	0.4[†]	3	*	3	*	38	0.7
1996	1	*	17	0.8[†]	2	*	3	*	1	*	1	*	0	*	24	0.5
1997	0	*	35	1.7	0	*	2	*	3	*	3	*	0	*	40	0.8
1998	5	*	13	0.6[†]	0	*	2	*	8	0.5[†]	3	*	5	*	28	0.5
1999	0	*	8	0.4[†]	0	*	5	*	7	0.4[†]	6	0.4[†]	1	*	20	0.4[†]
2000	3	*	8	0.4[†]	0	*	3	*	2	*	2	*	0	*	16	0.3[†]
2001	0	*	8	0.4[†]	0	*	3	*	2	*	2	*	0	*	13	0.3[†]
2002	0	*	4	*	0	*	5	*	7	0.4[†]	4	*	3	*	16	0.3[†]
2003	0	*	8	0.5[†]	0	*	4	*	3	*	3	*	0	*	15	0.3[†]
2004	1	*	12	0.7[†]	0	*	3	*	3	*	3	*	0	*	19	0.4[†]

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.12 Infant Mortality for Circulatory System Disease, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Mexican		Puerto Rican		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	0	*	11	0.3[†]	0	*	2	*	4	*	4	*	0	*	17	0.3[†]
1996	0	*	9	0.3[†]	0	*	0	*	2	*	1	*	1	*	11	0.2[†]
1997	0	*	8	0.3[†]	0	*	1	*	3	*	1	*	2	*	12	0.2[†]
1998	0	*	12	0.4[†]	0	*	0	*	7	0.3[†]	4	*	1	*	19	0.4[†]
1999	0	*	10	0.5[†]	0	*	2	*	2	*	2	*	0	*	14	0.3[†]
2000	2	*	9	0.5[†]	0	*	1	*	2	*	2	*	0	*	14	0.3[†]
2001	1	*	12	0.6[†]	0	*	3	*	4	*	4	*	0	*	20	0.4[†]
2002	0	*	5	*	0	*	0	*	6	0.3[†]	6	0.4[†]	0	*	11	0.2[†]
2003	0	*	7	0.4[†]	0	*	0	*	0	*	0	*	0	*	7	0.1[†]
2004	0	*	5	*	0	*	2	*	4	*	3	*	0	*	11	0.2[†]

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Table 5.13 Infant Mortality for Infant Homicide, Chicago Residents[§] by Maternal Ethnicity, 1995-2004

Year	NH Asian		NH Black		NH Native American		NH White		All Hispanics		Mexican		Puerto Rican		Total Population	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
1995	0	*	6	0.2[†]	0	*	2	*	3	*	3	*	0	*	11	0.2[†]
1996	0	*	3	*	0	*	0	*	2	*	2	*	0	*	5	*
1997	0	*	6	0.3[†]	0	*	0	*	2	*	2	*	0	*	8	0.2[†]
1998	0	*	7	0.3[†]	0	*	0	*	0	*	0	*	0	*	8	0.2[†]
1999	0	*	7	0.4[†]	0	*	1	*	0	*	0	*	0	*	8	0.2[†]
2000	0	*	12	0.6[†]	0	*	0	*	1	*	0	*	0	*	13	0.3[†]
2001	0	*	5	*	0	*	1	*	0	*	0	*	0	*	6	0.1[†]
2002	0	*	8	0.5[†]	0	*	0	*	0	*	0	*	0	*	8	0.2[†]
2003	2	*	0	*	0	*	0	*	1	*	0	*	1	*	3	*
2004	0	*	2	*	0	*	0	*	2	*	2	*	0	*	4	*

Source: IDPH Matched Files

*Rates suppressed for fewer than 6 events.
[†] Use caution when interpreting rates based on 20 or fewer events. See Methods section for more information.
[§]Mother was a Chicago resident at time of birth. Infant did not have to be a Chicago resident at time of death.

Maternal Mortality

6

Table 6.1 Maternal Mortality, Chicago Residents by Ethnicity, 2000-2004

Year	NH Asian	NH Black	NH White	All Hispanics	Total Population
2000	1	5	1	2	9
2001	0	5	0	5	10
2002	0	8	0	0	8
2003	0	5	0	1	6
2004	0	4	0	0	4

Source: IDPH Death Files

The maternal mortality rate for the five-year period 2000-2004 was 15.2 per 100,000 births.

Table 6.2 Maternal Mortality by Cause of Death, Chicago Residents, 2000-2004 Combined

Cause	Number of Deaths
Venous Complication	4
Obstetric Embolism	4
Other Maternal Disease	4
Gestational Hypertension	3
Antepartum Haemorrhage	3
Obstetric Trauma	3
Complications of Labor and Delivery	3
Complications of the Puerperium	3
Ectopic Pregnancy	2
Infections	2
Medical Abortion	1
Failed Attempted Abortion	1
Hypertensive Disorder with Superimposed Proteinuria	1
Fetal Problem	1
Premature Separation of Placenta	1
Postpartum Haemorrhage	1

Source: IDPH Death Files

Appendices

Appendix A Infant Deaths[§] and Live Births by Community Area, 2004

	Community Area	Infant Deaths	Live Births		Community Area	Infant Deaths	Live Births		Community Area	Infant Deaths	Live Births
1	Rogers Park	11	926	27	E. Garfield Park	5	395	53	West Pullman	8	556
2	West Ridge	3	1,254	28	Near West Side	10	732	54	Riverdale	0	132
3	Uptown	2	748	29	North Lawndale	11	819	55	Hegewisch	1	125
4	Lincoln Square	2	615	30	South Lawndale	15	1,968	56	Garfield Ridge	6	513
5	North Center	3	598	31	Lower West Side	5	867	57	Archer Heights	1	254
6	Lake View	4	1,127	32	Loop	0	139	58	Brighton Park	8	1,127
7	Lincoln Park	3	875	33	Near South Side	4	233	59	McKinley Park	3	294
8	Near North Side	2	822	34	Armour Square	0	129	60	Bridgeport	1	457
9	Edison Park	0	147	35	Douglas	2	266	61	New City	13	1,156
10	Norwood Park	4	436	36	Oakland	0	85	62	West Elsdon	0	345
11	Jefferson Park	0	324	37	Fuller Park	2	68	63	Gage Park	5	1,011
12	Forest Glen	1	260	38	Grand Boulevard	5	331	64	Clearing	5	320
13	North Park	0	244	39	Kenwood	1	230	65	West Lawn	5	594
14	Albany Park	3	1,072	40	Washington Park	4	276	66	Chicago Lawn	15	1,243
15	Portage Park	6	874	41	Hyde Park	2	288	67	West Englewood	10	866
16	Irving Park	5	946	42	Woodlawn	8	405	68	Englewood	17	736
17	Dunning	0	469	43	South Shore	13	887	69	Greater Grand Crossing	7	559
18	Montclare	1	192	44	Chatham	7	429	70	Ashburn	3	590
19	Belmont Cragin	13	1,582	45	Avalon Park	2	145	71	Auburn Gresham	8	733
20	Hermosa	6	515	46	South Chicago	9	649	72	Beverly	1	273
21	Avondale	2	771	47	Burnside	0	41	73	Washington Heights	2	337
22	Logan Square	12	1,417	48	Calumet Heights	1	163	74	Mt. Greenwood	4	261
23	Humboldt Park	12	1,291	49	Roseland	9	773	75	Morgan Park	6	309
24	West Town	4	1,328	50	Pullman	5	129	76	O'Hare	1	173
25	Austin	33	1,895	51	South Deering	1	244	77	Edgewater	0	710
26	W. Garfield Park	2	380	52	East Side	3	460				

Source: IDPH Birth and Death Files

Appendix B Births to Women Under 20 by Community Area, 2004

	Community Area	n		Community Area	n		Community Area	n
1	Rogers Park	91	27	East Garfield Park	109	53	West Pullman	151
2	West Ridge	76	28	Near West Side	68	54	Riverdale	40
3	Uptown	62	29	North Lawndale	177	55	Hegewisch	10
4	Lincoln Square	23	30	South Lawndale	343	56	Garfield Ridge	51
5	North Center	22	31	Lower West Side	123	57	Archer Heights	42
6	Lake View	7	32	Loop	2	58	Brighton Park	147
7	Lincoln Park	17	33	Near South Side	16	59	McKinley Park	38
8	Near North Side	61	34	Armour Square	6	60	Bridgeport	40
9	Edison Park	2	35	Douglas	38	61	New City	215
10	Norwood Park	6	36	Oakland	10	62	West Elsdon	30
11	Jefferson Park	13	37	Fuller Park	11	63	Gage Park	165
12	Forest Glen	3	38	Grand Boulevard	82	64	Clearing	23
13	North Park	11	39	Kenwood	25	65	West Lawn	65
14	Albany Park	105	40	Washington Park	66	66	Chicago Lawn	226
15	Portage Park	83	41	Hyde Park	13	67	West Englewood	233
16	Irving Park	96	42	Woodlawn	76	68	Englewood	189
17	Dunning	25	43	South Shore	166	69	Greater Grand Crossing	117
18	Montclare	10	44	Chatham	67	70	Ashburn	71
19	Belmont Cragin	225	45	Avalon Park	16	71	Auburn Gresham	158
20	Hermosa	96	46	South Chicago	124	72	Beverly	7
21	Avondale	93	47	Burnside	14	73	Washington Heights	54
22	Logan Square	203	48	Calumet Heights	22	74	Mt. Greenwood	4
23	Humboldt Park	284	49	Roseland	177	75	Morgan Park	45
24	West Town	137	50	Pullman	16	76	O'Hare	1
25	Austin	414	51	South Deering	43	77	Edgewater	44
26	West Garfield Park	85	52	East Side	53			

Source: IDPH Birth Files

Appendix C Births with Low Birthweight (1500-2499 grams) and Very Low Birthweight (< 1500 grams) by Community Area, 2004

	Community Area	LBW	VLBW		Community Area	LBW	VLBW		Community Area	LBW	VLBW
1	Rogers Park	71	9	27	E. Garfield Park	69	21	53	West Pullman	82	24
2	West Ridge	114	20	28	Near West Side	99	17	54	Riverdale	14	1
3	Uptown	64	12	29	North Lawndale	134	27	55	Hegewisch	8	1
4	Lincoln Square	45	11	30	South Lawndale	140	17	56	Garfield Ridge	55	11
5	North Center	55	15	31	Lower West Side	59	9	57	Archer Heights	16	4
6	Lake View	85	16	32	Loop	10	2	58	Brighton Park	74	12
7	Lincoln Park	74	15	33	Near South Side	28	5	59	McKinley Park	18	1
8	Near North Side	77	8	34	Armour Square	9	3	60	Bridgeport	35	5
9	Edison Park	11	2	35	Douglas	35	12	61	New City	99	17
10	Norwood Park	42	12	36	Oakland	9	4	62	West Elsdon	22	3
11	Jefferson Park	27	2	37	Fuller Park	16	2	63	Gage Park	78	9
12	Forest Glen	23	1	38	Grand Boulevard	38	7	64	Clearing	29	6
13	North Park	25	2	39	Kenwood	25	8	65	West Lawn	50	8
14	Albany Park	57	9	40	Washington Park	43	7	66	Chicago Lawn	135	29
15	Portage Park	65	17	41	Hyde Park	28	10	67	West Englewood	140	28
16	Irving Park	74	13	42	Woodlawn	59	9	68	Englewood	119	26
17	Dunning	29	8	43	South Shore	113	24	69	Gtr Grand Crossing	76	19
18	Montclare	12	1	44	Chatham	69	14	70	Ashburn	63	15
19	Belmont Cragin	117	23	45	Avalon Park	20	3	71	Auburn Gresham	111	30
20	Hermosa	36	8	46	South Chicago	72	16	72	Beverly	21	11
21	Avondale	71	7	47	Burnside	7	1	73	Washington Hgts	61	7
22	Logan Square	108	19	48	Calumet Heights	24	4	74	Mt. Greenwood	24	3
23	Humboldt Park	117	26	49	Roseland	132	21	75	Morgan Park	31	7
24	West Town	104	17	50	Pullman	17	1	76	O'Hare	10	1
25	Austin	278	58	51	South Deering	27	2	77	Edgewater	56	6
26	W. Garfield Park	61	10	52	East Side	40	4				

Source: IDPH Birth Files

Appendix D Births with Inadequate Prenatal Care by Community Area, 2004

Community Area		n	Community Area		n	Community Area		n
1	Rogers Park	321	27	East Garfield Park	88	53	West Pullman	68
2	West Ridge	405	28	Near West Side	98	54	Riverdale	19
3	Uptown	198	29	North Lawndale	125	55	Hegewisch	8
4	Lincoln Square	145	30	South Lawndale	146	56	Garfield Ridge	45
5	North Center	78	31	Lower West Side	77	57	Archer Heights	24
6	Lake View	137	32	Loop	12	58	Brighton Park	96
7	Lincoln Park	89	33	Near South Side	27	59	McKinley Park	26
8	Near North Side	152	34	Armour Square	2	60	Bridgeport	38
9	Edison Park	12	35	Douglas	21	61	New City	169
10	Norwood Park	52	36	Oakland	4	62	West Elsdon	27
11	Jefferson Park	43	37	Fuller Park	12	63	Gage Park	94
12	Forest Glen	38	38	Grand Boulevard	35	64	Clearing	23
13	North Park	69	39	Kenwood	29	65	West Lawn	44
14	Albany Park	326	40	Washington Park	56	66	Chicago Lawn	124
15	Portage Park	161	41	Hyde Park	19	67	West Englewood	162
16	Irving Park	219	42	Woodlawn	44	68	Englewood	150
17	Dunning	55	43	South Shore	104	69	Greater Grand Crossing	81
18	Montclare	26	44	Chatham	49	70	Ashburn	25
19	Belmont Cragin	332	45	Avalon Park	16	71	Auburn Gresham	104
20	Hermosa	86	46	South Chicago	61	72	Beverly	19
21	Avondale	155	47	Burnside	6	73	Washington Heights	27
22	Logan Square	273	48	Calumet Heights	13	74	Mt. Greenwood	3
23	Humboldt Park	295	49	Roseland	98	75	Morgan Park	29
24	West Town	178	50	Pullman	11	76	O'Hare	32
25	Austin	441	51	South Deering	21	77	Edgewater	193
26	West Garfield Park	80	52	East Side	31			

Source: IDPH Birth Files

Appendix E Fetal Deaths by Community Area, 2004

Community Area	n	Community Area	n	Community Area	n
1 Rogers Park	3	27 East Garfield Park	5	53 West Pullman	12
2 West Ridge	10	28 Near West Side	7	54 Riverdale	1
3 Uptown	5	29 North Lawndale	12	55 Hegewisch	2
4 Lincoln Square	5	30 South Lawndale	8	56 Garfield Ridge	3
5 North Center	3	31 Lower West Side	2	57 Archer Heights	1
6 Lake View	2	32 Loop	0	58 Brighton Park	6
7 Lincoln Park	2	33 Near South Side	4	59 McKinley Park	2
8 Near North Side	4	34 Armour Square	1	60 Bridgeport	0
9 Edison Park	0	35 Douglas	3	61 New City	11
10 Norwood Park	1	36 Oakland	0	62 West Elsdon	0
11 Jefferson Park	3	37 Fuller Park	1	63 Gage Park	6
12 Forest Glen	0	38 Grand Boulevard	3	64 Clearing	1
13 North Park	2	39 Kenwood	3	65 West Lawn	7
14 Albany Park	6	40 Washington Park	0	66 Chicago Lawn	7
15 Portage Park	2	41 Hyde Park	2	67 West Englewood	11
16 Irving Park	2	42 Woodlawn	2	68 Englewood	6
17 Dunning	3	43 South Shore	9	69 Greater Grand Crossing	7
18 Montclare	3	44 Chatham	1	70 Ashburn	3
19 Belmont Cragin	8	45 Avalon Park	1	71 Auburn Gresham	11
20 Hermosa	3	46 South Chicago	7	72 Beverly	2
21 Avondale	0	47 Burnside	0	73 Washington Heights	6
22 Logan Square	6	48 Calumet Heights	5	74 Mt. Greenwood	3
23 Humboldt Park	15	49 Roseland	8	75 Morgan Park	4
24 West Town	10	50 Pullman	2	76 O'Hare	0
25 Austin	20	51 South Deering	2	77 Edgewater	2
26 West Garfield Park	10	52 East Side	4		

Source: IDPH Birth Files

SIDS Deaths and Seasonality in Chicago

BACKGROUND

Sudden Infant Death Syndrome (SIDS) is defined as the sudden death of an infant younger than one year of age that remains unexplained after the completion of postmortem investigation, including autopsy, examination of the scene of death and review of the clinical history.[1] SIDS is the leading cause of post-neonatal mortality (28-364 days) in the United States.[5] SIDS deaths are linked to environmental risk factors such as sleep position, exposure to cigarette smoking and overheating.[1] Rates of SIDS deaths are not equally distributed between racial/ethnic groups, Non-Hispanic Blacks have rates significantly higher than Non-Hispanic Whites and Hispanics.

A seasonal variation in SIDS deaths was first reported in 1965 and several subsequent studies have also shown a similar result.[2,4] Recently, it was shown that SIDS deaths occur more often in colder months. The biological mechanism for such an association is unclear, though hypothesized to be an infectious etiology.[4] This study will evaluate the impact of seasonality of birth and death on SIDS deaths in Chicago using linked birth and death files.

METHODS

IDPH matched birth and death certificate files for years 2000-2002 were used to generate the SIDS study population. (A description of the matched birth and death certificate files methodology is found on page 2.) The variables used for analysis include:

- cause of death
- month of birth
- month of death
- sex
- maternal race/ethnicity
- birth weight
- gestational age

Only the cases where the infant's mother resided in Chicago at time of birth were included in the study population.

Underlying cause of deaths due to SIDS (R95) and other ill-defined and unspecified causes of mortality (R99) for infants were selected from the 2000-2002 matched files in order to generate a potential study population. From this potential study population, all R99 records were reviewed manually to validate cause of death. A total of 44 records were reviewed (Table 1). Of these, 2 records were reassigned as R95 and included in the final SIDS study population. The manual review of R99 also revealed that previously unknown causes of death had been reassigned to other causes of deaths. The total study population included 107 SIDS deaths.

Due to the relatively small sample size, months of death and birth were aggregated into two groups for analysis, autumn-winter or spring-summer. Autumn-winter season included those who were born or died in October through December and spring-summer included those who were born or died in March through September. The definition of season was chosen to reflect the vernal and autumnal equinox, where colder and darker months generally occur in the autumn-winter season.[5]

To accurately define denominators for exposure of births and deaths, different years were included for each. Only births from 2000 and 2001 were used to measure the hypothesized association with birth season, while deaths from 2000-2002 were utilized for death season. Individual Chi-Square tests were used to measure the association of birth and death season and SIDS as well as test for potential confounders, gender, race/ethnicity, gestational age and birth weight. Relative risks were calculated for season of birth and death.

Table 1 Study Population

Year	2000	2001	2002
Births	50,885	49,596	47,958
All infant deaths	542	412	421
All potential SIDS deaths* (% of all infant deaths)	67 (12.4)	55 (13.3)	47 (11.2)
Autopsied potential SIDS deaths	65	50	45
R95	38	36	31
R99	29	19	16
Validated R99 Deaths (% of all autopsied R99 deaths)	19 (65.5)	15 (78.9)	10 (62.5)
Reclassified as R95	1	0	1
Reassigned as another cause of death	1	2	1
Final SIDS deaths (% of all infant deaths)	39 (7.2)	36 (8.7)	32 (7.6)

*Sudden infant death syndrome (R95) and Other ill-defined and unspecified causes of mortality (R99)

Table 2 Demographics

Gender	n	Percent
Male	62	42.1
Female	45	57.9
Maternal race/ethnicity		
Hispanic	20	18.7
Non-Hispanic Asian	1	*
Non-Hispanic Black	83	77.6
Non-Hispanic White	3	*
Gestational age (wks)		
< 37	30	28.3
≥ 37	76	71.7
Maternal age at delivery (yrs)		
< 20	35	32.7
20-24	41	38.3
25-29	15	14
30-35	13	12.1
> 35	3	*

* Percentages suppressed for fewer than 6 events.

Table 3 X^2 Test Results for Potential Confounders

Odds Ratio (95% CI)	Gender: Male/Female	Race: Black/White	Ethnicity: Hispanic/Non-Hispanic	Gestational Age: <37 wks/≥ 37 wks	Birth weight: < 2.5 kg/≥ 2.5 kg
Death Season	1.1 (0.9, 1.3)	1.2 (0.9, 1.4)	0.9 (0.7, 1.2)	0.8 (0.6, 1)	0.8 (0.6, 1)
Birth Season	1 (1, 1)	1.1 (1, 1.1)	1 (0.9, 1)	1.1 (1, 1.1)	1 (1, 1.1)

RESULTS

SIDS deaths accounted for 7.8 percent of all infant deaths during the study period (Table 1). There was no significant increase or decrease in SIDS deaths during the study period compared to previous years. In Chicago, female infants were slightly more likely to have died of SIDS. Non-Hispanic Black infants represented the majority SIDS-related deaths in Chicago. Less than 30 percent of all SIDS deaths were premature. More than 70 percent of all infants who died of SIDS had mothers less than 25 years of age (Table 2).

Neither gender, maternal race or ethnicity, gestational age or birth weight were significantly associated with season of birth or death (Table 3). Fifty-seven percent of SIDS deaths occurred in autumn-winter (Table 4) and 54% of SIDS deaths were born in autumn-winter (Table 5). The relative risk for autumn-winter season of death and birth were slightly higher than spring-summer, 1.4 (1, 2.1) and 1.2 (0.8, 1.9) respectively, but not significantly.

DISCUSSION

There were fewer SIDS deaths during the summer months in our study population. Though we were unable to detect a significant difference in SIDS risk for either month of birth or death in our study population, the direction of our relative risks for autumn-winter season were consistent with prior research. The number of SIDS deaths may not have been large enough to detect small but significant differences in monthly relative risk because of our small study population. Aggregating more than 3 years of data or studying a larger population may be helpful in demonstrating a statistically significant association between season and SIDS.

Table 4 Season of Death and SIDS

	Cause of Death		
Death Season	SIDS	Other	Total
Autumn-Winter	61	628	689
Spring-Summer	46	670	716
Total	107	1,298	1,405

Table 5 Season of Birth and SIDS

	Birth Outcome		
Birth Season	SIDS	Other*	Total
Autumn-Winter	40	49,242	49,282
Spring-Summer	34	51,165	51,199
Total	74	100,407	100,481

*Infants who lived or died from other causes.

Although this study did not significantly correlate season of birth or death with SIDS, other studies that have demonstrated a seasonal pattern of SIDS.[5,6] The CDC encourages health care providers and parents to be aware that colder months may put infants at greater risk for SIDS.[1]

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