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Perinatal Health Indicators

This section of the report looks at key health indicators of pregnant women and infants. The health of this group is of critical importance, both as a reflection of the current health status of a large segment of the population and as a predictor of the health of the next generation (Healthy People 2010). Infants who receive the healthiest start in life have the best chance for continued health and well being into childhood, adolescence, and adulthood. The indicators included here are primarily those that affect pregnant women and infant health and survival.

Many factors can impact the pregnancy and ultimate health and well-being of the infant and mother. Some of these factors are: whether the pregnancy was intended; access to prenatal care; smoking and alcohol abuse during pregnancy; physical abuse during pregnancy; and maternal weight gain. Low birth weight and preterm birth are among the leading causes of neonatal death. Breastfeeding is an important contributor to overall infant health because human breast milk presents the most complete form of nutrition for infants. Infant sleep position is an important factor in Sudden Infant Death Syndrome(SIDS), a leading cause of infant death after the first month of life.

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Indicator 1: Unintended Pregnancy

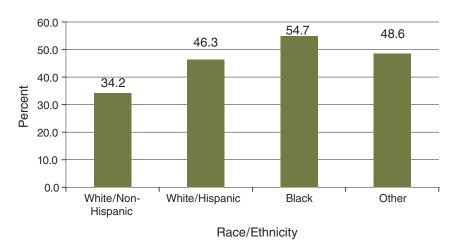
Healthy People 2010 Objective: 70 percent of pregnancies are to be intended at the time of conception. These pregnancies include those that end in live birth, miscarriage, and abortion. Colorado data are not directly comparable as they only reflect those pregnancies that ended in a live birth.

Significance of indicator: Many women with unintended pregnancies receive late or inadequate prenatal care, suffer from poor nutrition, and often use harmful substances like alcohol, tobacco, and other drugs. Their infants are at higher risk for low birth weight, dying in the first year of life, and of being abused or neglected. Unintended pregnancies are defined as those that are unwanted (pregnancy not wanted at any time) or mistimed (pregnancy not wanted until some time in the future) at the time of conception.

Colorado measure: Approximately 40 percent of all live births in Colorado are the result of an unintended pregnancy. In Colorado in 2004, the prevalence of unintended pregnancy was significantly lower among White, non-Hispanic women as compared to women in other racial categories.

Colorado data source: PRAMS, Health Statistics Section, CDPHE.

Women with unintended pregnancies by maternal race/ethnicity, 2004







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Indicator 2: Prenatal Care

Healthy People 2010 Objective: 90 percent of women receive prenatal care during the first trimester of pregnancy.

Significance of indicator: An inadequate number of prenatal care visits is associated with an increased chance of late identification of high-risk conditions and decreased opportunity to help women address behavioral factors, such as smoking and drinking alcohol, that can contribute to poor birth outcomes.

The Kotelchuck Adequacy of Prenatal Care Utilization Index combines information about prenatal care initiation, number of prenatal visits, and gestational age to determine the adequacy of prenatal care utilization for live births. The index does not provide any information about the quality of prenatal care, only the utilization.

Colorado measure: In Colorado in 2005, only 74.2 percent of White, non-Hispanic women received adequate care, and rates were even lower for women in other racial and ethnic groups. Overall, only 68.4 percent of Colorado women received adequate prenatal care in 2005.

Although just over two-thirds of Colorado resident women ages 15-44 get adequate prenatal care, that percent drops to just over half for teens ages 15-17. Mothers 25 and older are more likely to get adequate prenatal care than younger mothers.

Almost one-fifth of women in Colorado do not receive prenatal care services as early as they would like. The most common reasons for delayed prenatal care initiation include: inability to get an earlier appointment, the woman did not know she was pregnant, not enough money or insurance to pay for the visits, the woman did not have her Medicaid card, and the doctor or health plan would not start care earlier.

In 2004, Colorado ranked 34th (of the 43 states reporting comparable data) for the percentage of women receiving prenatal care in the first trimester of pregnancy with 80.2 percent (other states ranged from 69.4 to 90 percent). Among these same 43 states, Colorado ranked 35th for the percentage of women who received late or no prenatal care with 4.5 percent (other states ranged from 1.5 to 8.3 percent).

For these 43 states combined, 83.9 percent of women received first trimester prenatal care, and 3.6 percent received late or no prenatal care. The Healthy People 2010 objective is for 90 percent of women to receive care in the first trimester of pregnancy.

Colorado data source: Vital Statistics and Pregnancy Risk Assessment Monitoring System, Health Statistics Section, CDPHE.





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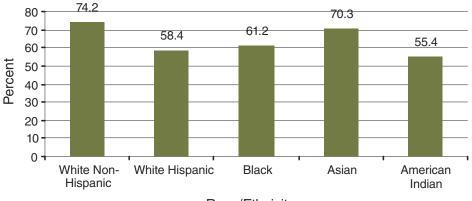




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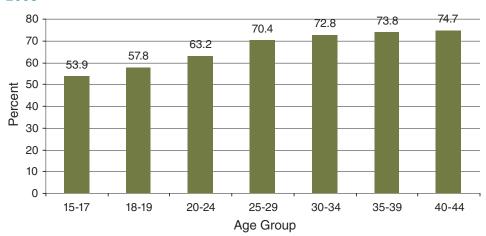
Indicator 2: Prenatal Care

Adequate prenatal care* by race/ethnicity: Colorado residents 2005



Race/Ethnicity

Percent adequate prenatal care* by age group of mother: Colorado residents 2005



^{*}Adequate prenatal care measured by Kotelchuck Adequacy of Prenatal Care Utilization Index for all ages. Denominator excludes cases with adequacy of prenatal care unknown. Source: Birth records, Health Statistics Section, CDPHE.

^{*}Adequate prenatal care measured by Kotelchuck Adequacy of Prenatal Care Utilization Index for all ages. Denominator excludes cases with adequacy of prenatal care unknown.

Source: Birth records, Health Statistics Section, CDPHE.





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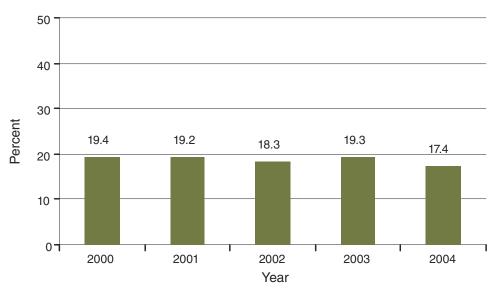




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Indicator 2: Prenatal Care

Women who did not get prenatal care as early as they wanted: Colorado residents 2000-2004







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Indicator 3: Smoking During Pregnancy

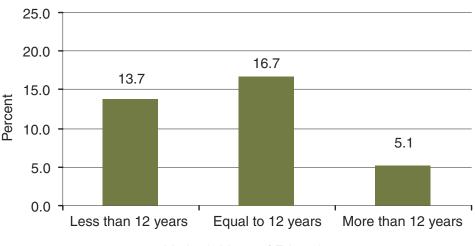
Healthy People 2010 Objective: 99 percent of women abstain from smoking during pregnancy.

Significance of indicator: Smoking during pregnancy has been shown to contribute to low birth weight infants. Many smokers quit smoking during their pregnancy, but more than half of smokers continued to smoke throughout their pregnancy. Although many women quit smoking while pregnant, some started up again after their babies were born, often exposing them to secondhand smoke.

Colorado measure: In 2004, more than 10 percent of all Colorado women smoked during pregnancy. When stratified by maternal years of education, women with less than or equal to 12 years of education were more likely to smoke during pregnancy when compared to women with more than 12 years of education.

Colorado data source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, CDPHE.

Women who smoked during pregnancy by years of education: Colorado residents, 2004



Mother's Years of Education





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Indicator 4: Alcohol Use During Pregnancy

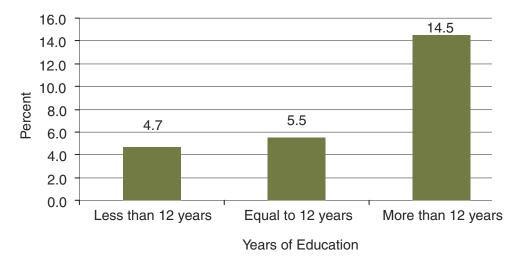
Healthy People 2010 Objective: 94 percent of women abstain from drinking alcohol during pregnancy.

Significance of indicator: Drinking early in pregnancy increases the risk of adverse outcomes including spontaneous abortion, growth and neurological problems. Many of these problems develop between 3 and 8 weeks gestation, often before women know they are pregnant.

Colorado measure: About 1 in 10 Colorado women drink alcoholic beverages during pregnancy and this has remained fairly constant over time. When viewed by maternal years of education, women with more than 12 years of education were found to have the highest prevalence of drinking alcohol during pregnancy (14.5%). In 2004, the vast majority (82%) of women who report drinking during pregnancy drink less than 1 drink per week.

Colorado data source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, CDPHE.

Women who drank alcohol during pregnancy by years of education: Colorado residents, 2004







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Indicator 5: Physical Abuse During Pregnancy

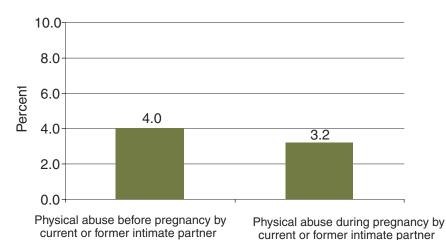
Healthy People 2010 Objective: Fewer than 0.33 percent of people experience physical assault by current or former intimate partner.

Significance of indicator: Physical abuse during pregnancy can result in fetal loss, early onset of labor, and delivery of a preterm low birth weight infant.

Colorado measure: 4.0 percent of Colorado mothers were physically abused by a current or former intimate partner in the year before pregnancy, and 3.2 percent of Colorado mothers were physically abused by a current or former intimate partner during pregnancy. These rates correlate to approximately 2,700 and 2,100 women in Colorado, respectively. Even though the rate decreased during pregnancy, it was still far greater than the Healthy People 2010 objective of fewer than 3.3 physical assaults by a current or former intimate partner per 1,000 persons (0.33%) 12 years or older.

Colorado data source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, CDPHE.

Physical abuse before and during pregnancy: Colorado residents, 2004



health watch



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Indicator 6: Maternal Weight Gain During Pregnancy

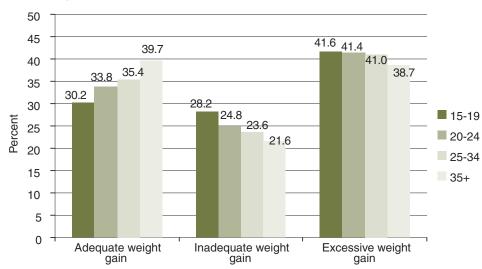
Healthy People 2010 Objective: None

Significance of indicator: Inadequate prenatal weight gain is a significant risk factor for intrauterine growth retardation and low birth weight in infants and, during the third trimester of pregnancy, can be associated with increased risk of spontaneous preterm delivery. Excessive maternal weight gain is associated with excessive postpartum weight retention, which is of concern given the trend toward increasing obesity among U.S. women and the health risks associated with obesity.

Colorado measure: Approximately one-third of women gained the appropriate amount of weight during pregnancy. However, the majority of Colorado women gained weight outside of the National Institute of Medicine guidelines, with approximately one quarter gaining an inadequate amount and about 40 percent gaining an excessive amount of weight during pregnancy. The proportion of women who gained an inadequate amount of weight was seen to vary by age, with younger women being more at risk.

Colorado data source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, CDPHE.

Adequacy of weight gain during pregnancy by maternal age: Colorado residents, 2001-2004



Weight Gain Adequacy





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Indicator 7: Low Birth Weight

Healthy People 2010 Objective: Reduce low birth weight births to 5 percent.

Significance of indicator: By definition, a newborn weighing less than 2,500 grams (less than 5 lb. 9 oz.) is considered a low weight birth. These infants are at much greater risk for long-term morbidity and early death.

Colorado measure: Colorado has continually experienced a relatively higher percentage of low weight births than the U.S. overall.

In 2004, Colorado ranked 11th among the fifty states and the District of Columbia for highest percentage of low weight births with 9 percent of births being low weight. Across the United States, the percentage of low weight births ranges from 6 to 11.6 percent.

The Healthy People 2010 objective is for 90 percent of very low birth weight (<1,500 grams) infants to be delivered at facilities for high-risk deliveries and neonates. In Colorado, in 2005, 80.9 percent of those deliveries took place at such facilities.

A significant health disparity exists for infants born to Black women with regard to birth weight. In Colorado, as in the U.S., the proportion of low weight births to Black women is significantly higher than for other women.

Low birth weight births are also related to the age of the mother. The youngest and the oldest mothers are at greatest risk of having a low birth weight infant.

Colorado data source: Vital Statistics, Health Statistics Section, CDPHE.

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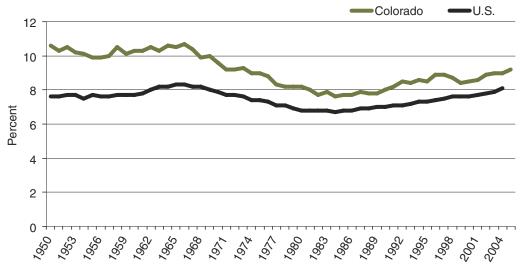


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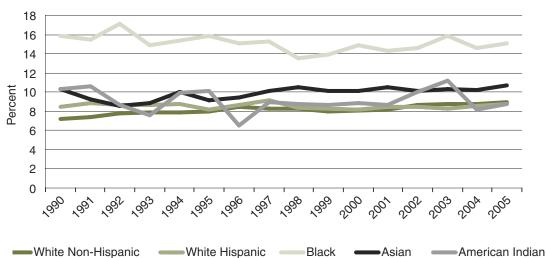
Percent low weight births: Colorado residents and United States*, 1950-2005



*U.S. data are not available for 2005

Source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, CDPHE and National Center for Health Statistics.

Percent low birth weight (<2500 grams) by race/ethnicity of mother: Colorado residents, 1990-2005



Source: Birth records. Health Statistics Section. CDPHE.

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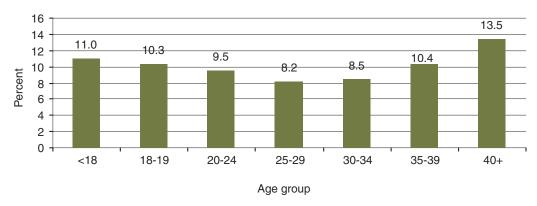


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Percent low birth weight (<2,500 grams) by age group of mother:Colorado residents, 2005



Source: Birth records, Health Statistics Section, CDPHE.





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Indicator 8: Preterm Birth

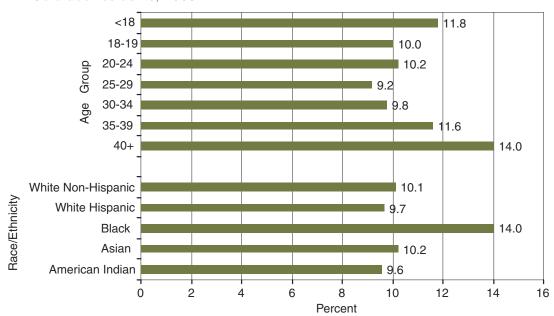
Healthy People 2010 Objective: Reduce preterm births to no more than 7.6 percent of all births

Significance of indicator: According to Healthy People 2010, preterm birth is the leading cause of neonatal death not associated with birth defects. Additionally, two-thirds of low birth weight infants and 98 percent of very low weight infants are born preterm. Consequently, reductions in preterm deliveries will result in large decreases in infant illness, disability, and death. One way to reduce preterm deliveries is to target inadequate weight gain and use of alcohol, tobacco, and other drugs during pregnancy as all of these are associated with preterm birth.

Colorado measure: In Colorado in 2005, 10.2 percent of births were preterm (<37 weeks gestation), while the oldest and the youngest mothers had the highest percentages of preterm births. Additionally, Black women are more likely than women of other racial/ethnic groups to have a preterm birth.

Colorado data source: Vital Statistics, Health Statistics Section, CDPHE.

Percent preterm births (<37 weeks) by age group and race/ethnicity of mother: Colorado residents, 2005



Source: Birth records, Health Statistics Section, CDPHE.





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Indicator 9: Breastfeeding

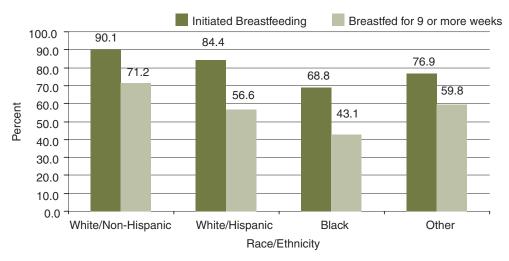
Healthy People 2010 Objective: 75 percent of women initiate breastfeeding after delivery.

Significance of indicator: Breastfeeding has long been known to be beneficial to both the infant and the mother. Some of the benefits for babies are fewer middle-ear infections and fewer chronic illnesses such as diabetes, allergies, and obesity. In addition, schoolchildren who were breastfed as infants have been found to have IQs about eight points higher than those who were not.

Colorado measure: Most Colorado women start breastfeeding shortly after their baby is born (87.1%), but many do not continue long enough for the baby to gain all of the benefits. The American Academy of Pediatrics recommends breastfeeding for one year, but most women do not continue for that length of time. Although more women are breastfeeding, less than two-thirds currently do so for nine weeks or more (65.2%).

Colorado data source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, CDPHE.

Women who initiated breastfeeding and continued to breastfeed for 9 or more weeks by race/ethnicity, 2004







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Indicator 10: Infant Sleep Position

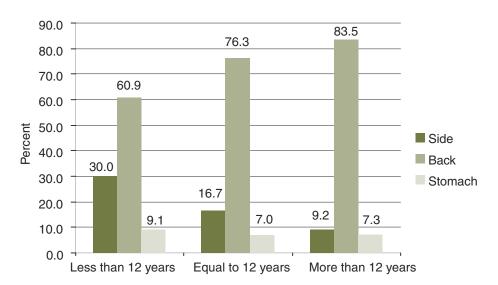
Healthy People 2010 Objective: At least 70 percent of infants sleep on their backs.

Significance of indicator: Infant sleep position has been identified as an important factor in preventing Sudden Infant Death Syndrome (SIDS). Infants who sleep on their stomachs are estimated to be up to 9.3 times more likely to die of SIDS than infants who sleep on their backs. Since the implementation of the 1994 "Back to Sleep" campaign, the percent of infants who sleep on their backs has increased significantly.

Colorado measure: In Colorado in 2004, 76.9 percent of infants in Colorado are laid to sleep on their backs. However, continued efforts are needed for women with less than 12 years of education to meet the Healthy People 2010 objective of at least 70 percent of infants being put to sleep on their backs. <Link: Infant sleep position by years of education: Colorado residents, 2004>

Colorado data source: Pregnancy Risk Assessment Monitoring System, Health Statistics Section, CDPHE.

Infant sleep position by years of education: Colorado residents, 2004







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Indicator 11: Infant Mortality

Healthy People 2010 Objective: Reduce infant mortality to 4.5 infant deaths per 1,000 live births.

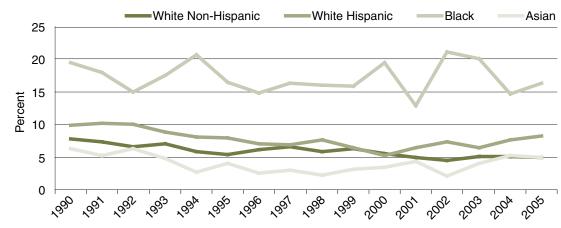
Colorado measure: The infant mortality rate is the number of infant deaths per 1,000 live births. In 2005, the infant mortality rate for Colorado was 6.4. Colorado has made progress in reducing this rate, as has the U.S., but there is still a large disparity in infant mortality by race/ethnicity. In 2005, the infant mortality rate for Black infants was two times as high as that for White Hispanic infants and approximately three times higher than the other racial/ethnic groups.

Four underlying cause categories were identified in two-thirds of all infant deaths to Colorado residents in 2005: congenital malformations, deformations, and chromosomal abnormalities; newborn affected by maternal complications of pregnancy, labor, and delivery; disorders related to short gestation and low birth weight; and Sudden Infant Death Syndrome (SIDS). For the first three of these causes, the rate for Black infant mortality was higher than that for White infants (regardless of ethnicity).

Infant mortality rates vary also by such maternal characteristics as smoking during pregnancy and mother's age.

Colorado data source: Vital Statistics, Health Statistics Section, CDPHE.

Infant mortality rates by race/ethnicity of mother: Colorado residents, 1990-2005



Source: Birth and death records, Health Statistics Section, CDPHE.





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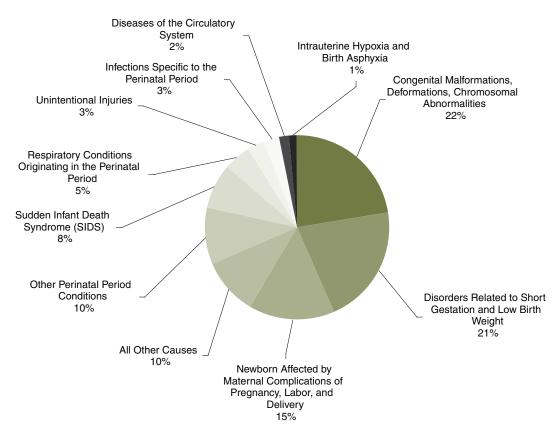


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Percent of infant deaths by underlying cause: Colorado residents, 2005



Source: Death records, Health Statistics Section, CDPHE.

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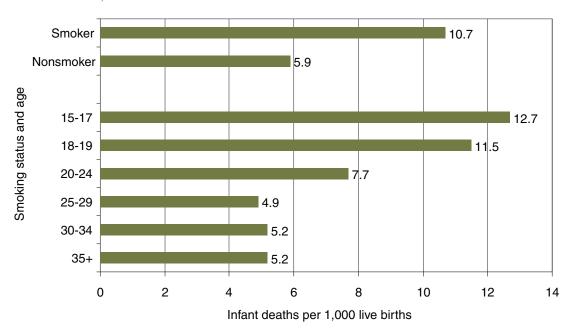


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Infant mortality rates by prenatal smoking status and age of mother: Colorado residents, 2005



Source: Birth and death records, Health Statistics Section, CDPHE.