

## B: Child and Infant Health



# Health Trends in Alberta: A Working Document

## ***SECTION B: CHILD AND INFANT HEALTH***

Data used in this section come from the following sources:

National rates are obtained from the Statistics Canada's Health Indicators database, the Canadian Community Health Survey and the Longitudinal Survey of Children and Youth.

Provincial data used to report rates over time and regional variations are obtained from the Alberta Vital Statistics and Alberta Congenital Anomalies Surveillance System databases.

The specific data sources are indicated for each graph.

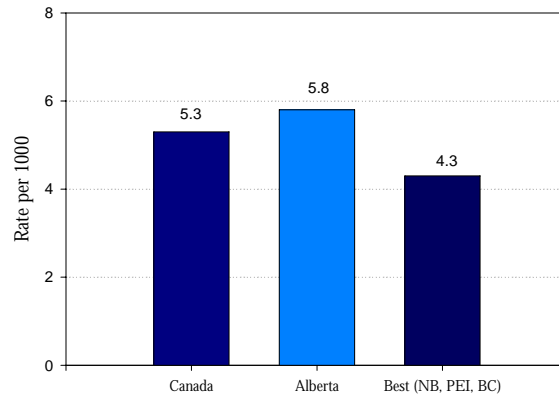


## Infant Mortality

Infant mortality – death in the first year of life – is recognized internationally as an indicator of population health. The infant mortality rate is defined as the number of infants who die before their first birthday out of every 1000 live born babies, and reflects the health of infants and their mothers. Infant mortality is closely related to congenital anomalies, premature births and low birth weight. Determinants affecting the previous factors include the mother’s age, use of tobacco, alcohol, or other drugs; her access to adequate prenatal care; adequacy of nutrition, living conditions and presence of acute or chronic disease.

In 2004, excluding the territories, the infant mortality rate in Alberta was the third highest in Canada at 5.8 per 1,000 live births, higher than the Canadian average of 5.3 per 1,000 live births. New Brunswick, Prince Edward Island, and British Columbia were tied for the lowest rate in Canada for infant mortality at 4.3 per 1,000 live births.

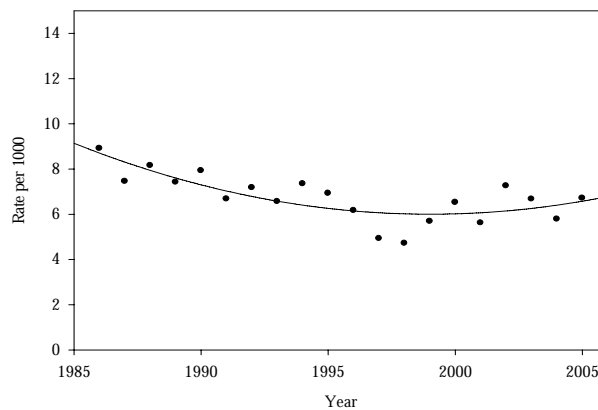
Figure 16: Infant Mortality, 2004 (Canada, Alberta, Best Province)



Source: Statistics Canada

Over the last 20 years, while the infant mortality rate has fluctuated, the trend has remained fairly stable. The graph shows a gradual decline from the late 1980s with greater fluctuations in more recent years.

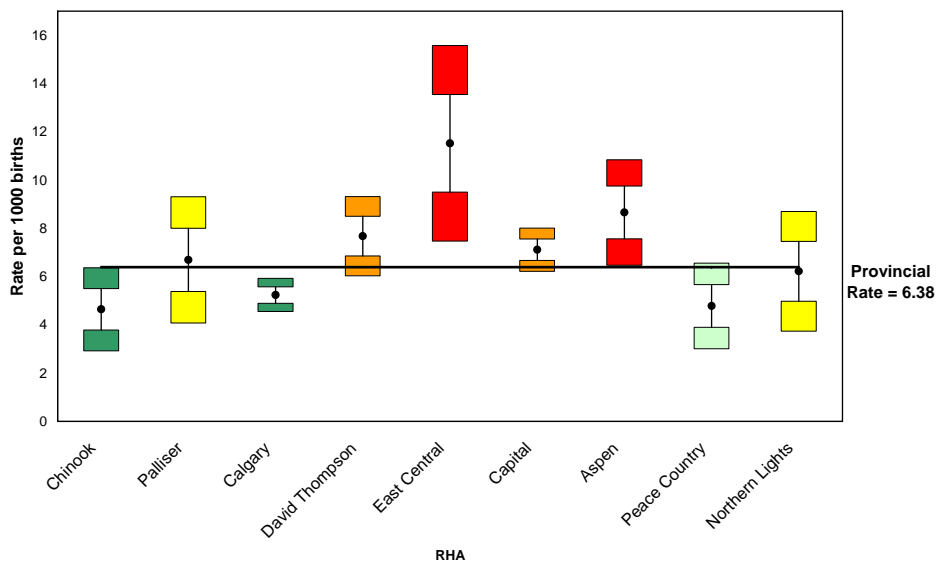
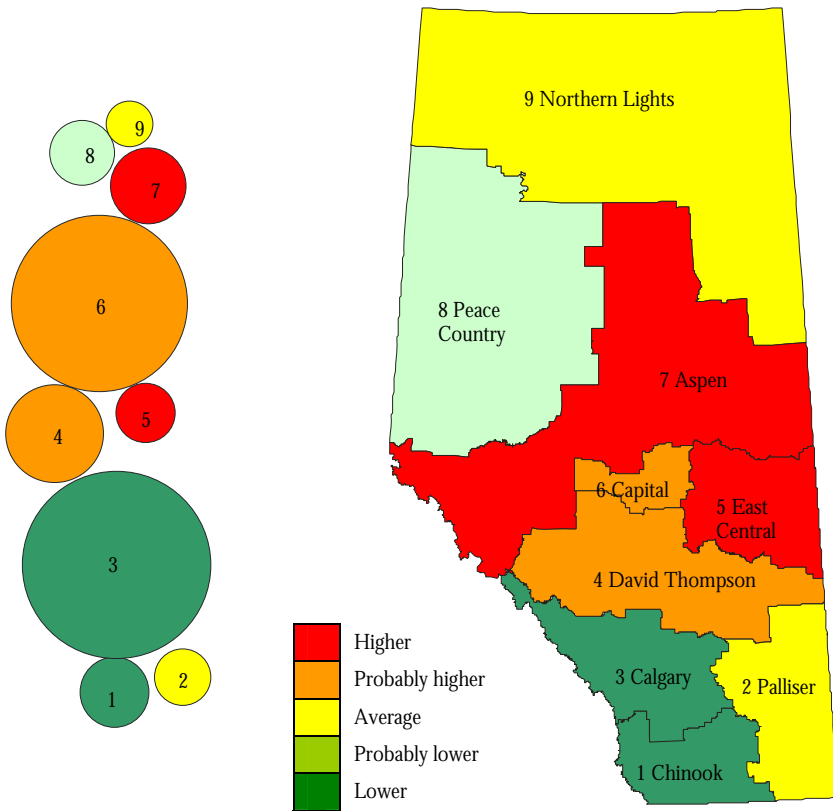
Figure 17: Trends in Infant Mortality in Alberta, 1986 - 2005



Source: Vital Statistics Death File and Birth File, May 2006 release

A look at the regional map shows that the Aspen and East Central health regions had an infant mortality rate higher than the provincial average for 2003-05 combined. Calgary and Chinook had lower rates than the provincial average.

Figure 18: Regional Differences in Infant Mortality Rates, 2003 - 05 combined



Source: Vital Statistics, Death File & Birth File, May 2006 release

## Birth Weight

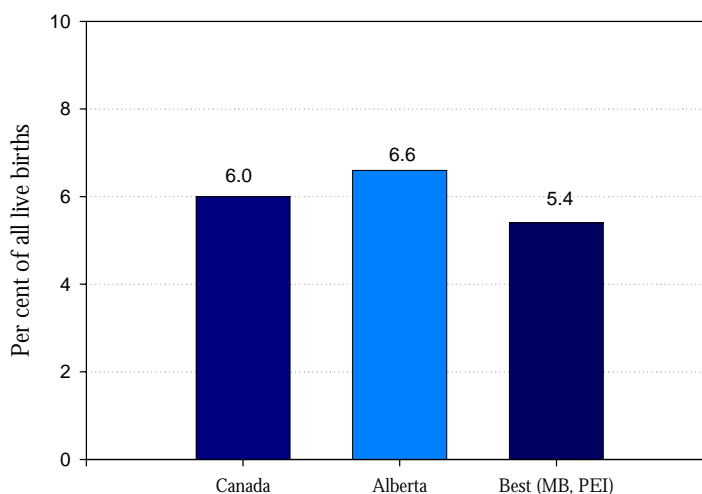
Birth weight is an indicator of the health status of newborns. Adequate prenatal growth is essential for future growth and development. Low birth weight (LBW) babies – those who weigh less than 2,500 grams (5.5 pounds) at birth – are more likely to have birth-related complications, disabilities, and other health problems. They are also more likely to have developmental delays, learning and behavioural problems and long-term health problems. Very low birth weight (VLBW) babies – those under 1,500 grams or 3.5 pounds – are especially likely to have long-term health problems and to require higher levels of health care throughout their lives.

Low birth weight babies may be pre-term, small for gestational age, or both. Compared to babies who are pre-term but have growth appropriate for their gestational age, babies who are small for gestational age have greater risk of developing health problems.

Factors associated with low birth weight include premature birth, multiple pregnancy, congenital anomalies, acute or chronic disease in the mother, and maternal age. Alcohol consumption, smoking and illicit drug use during pregnancy have also been linked to low birth weight. Low socioeconomic status can contribute through inadequate nutrition, poor living conditions, and a lack of prenatal care.

In 2005, 6.6 percent of all live births in Alberta were considered to be low or very low birth weight infants. This percentage is higher than the Canadian average (5.9 per cent), and the best provinces, Manitoba and Prince Edward Island (5.4 per cent).

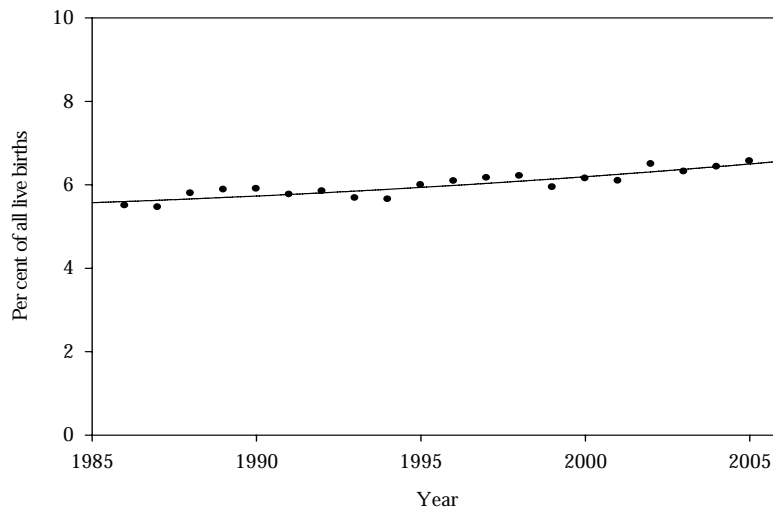
Figure 19: Low Birth Weight, 2005 (Canada, Alberta, Best Province)



Source: Statistics Canada, Health Indicators Database

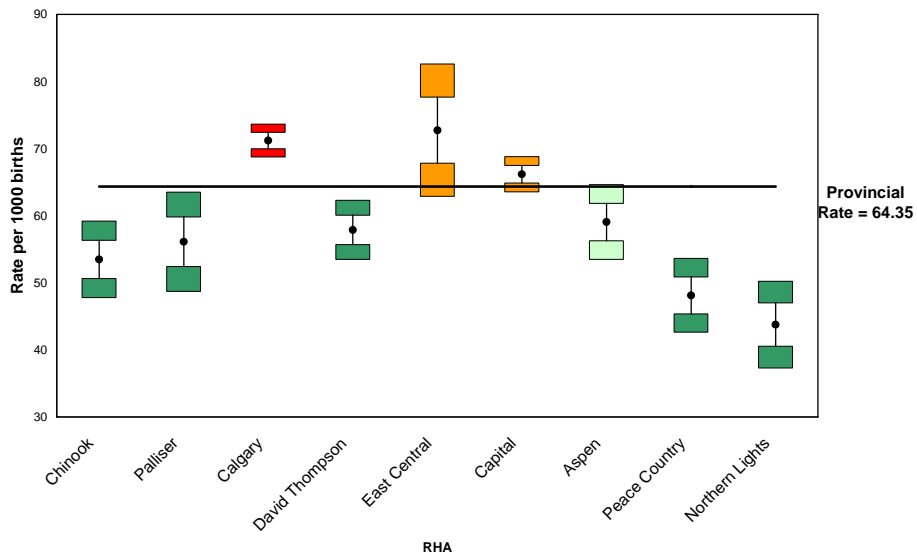
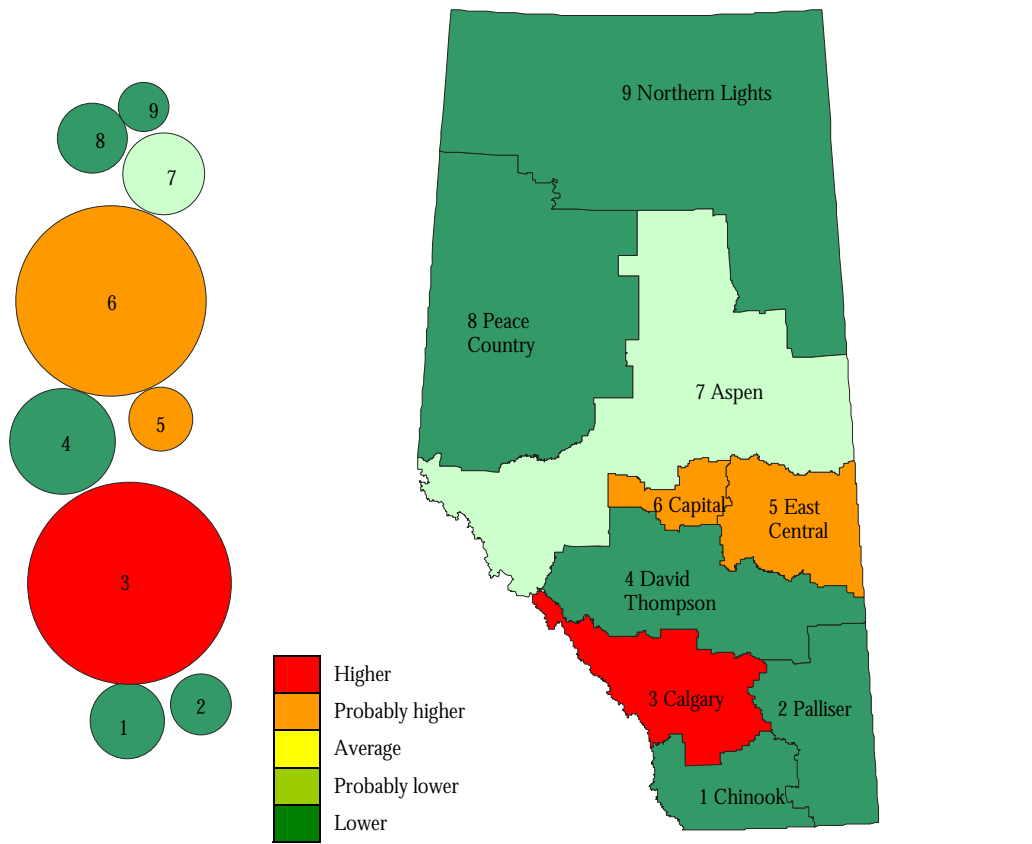
The incidence of low birth weight in Alberta has followed a slight but steady increase over the last 20 years.

Figure 20: Trends in Low Birth Weight in Alberta, 1986 - 2005



Source: Vital Statistics, Birth File, May 2006 release

Figure 21: Regional Differences in Low Birth Weight, 2003 - 05 combined

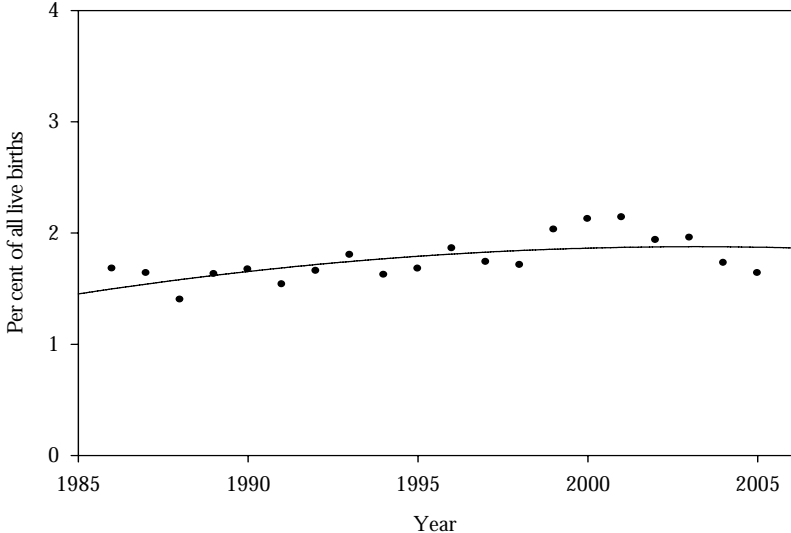


Source: Vital Statistics, Birth File, May 2006 release

Babies that are large for their gestational age can also be more susceptible to health problems. Poorly controlled diabetes mellitus and gestational diabetes are the primary causes of high birth weight babies. Diabetes increases plasma glucose and insulin levels of the mother which stimulates the fetus to grow. Large babies can cause complications during delivery, and may also be more prone to developing diabetes in later life.

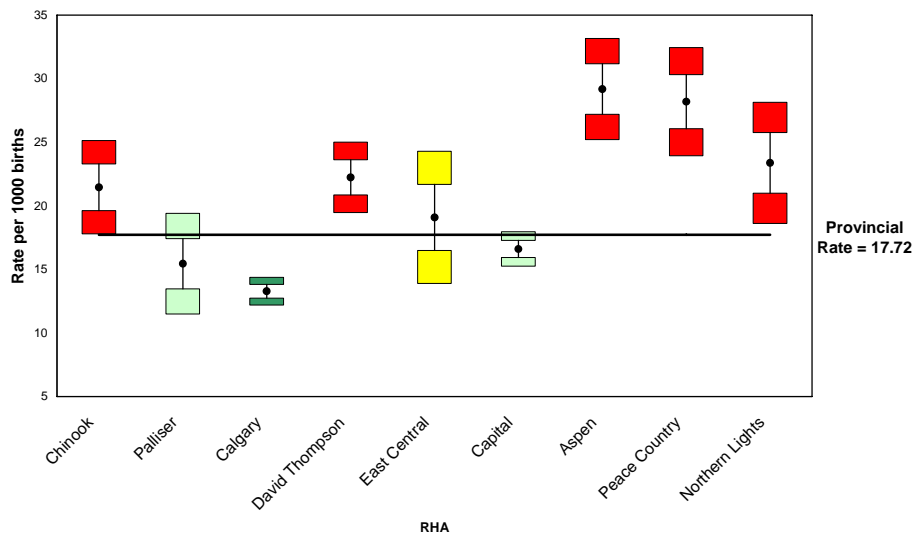
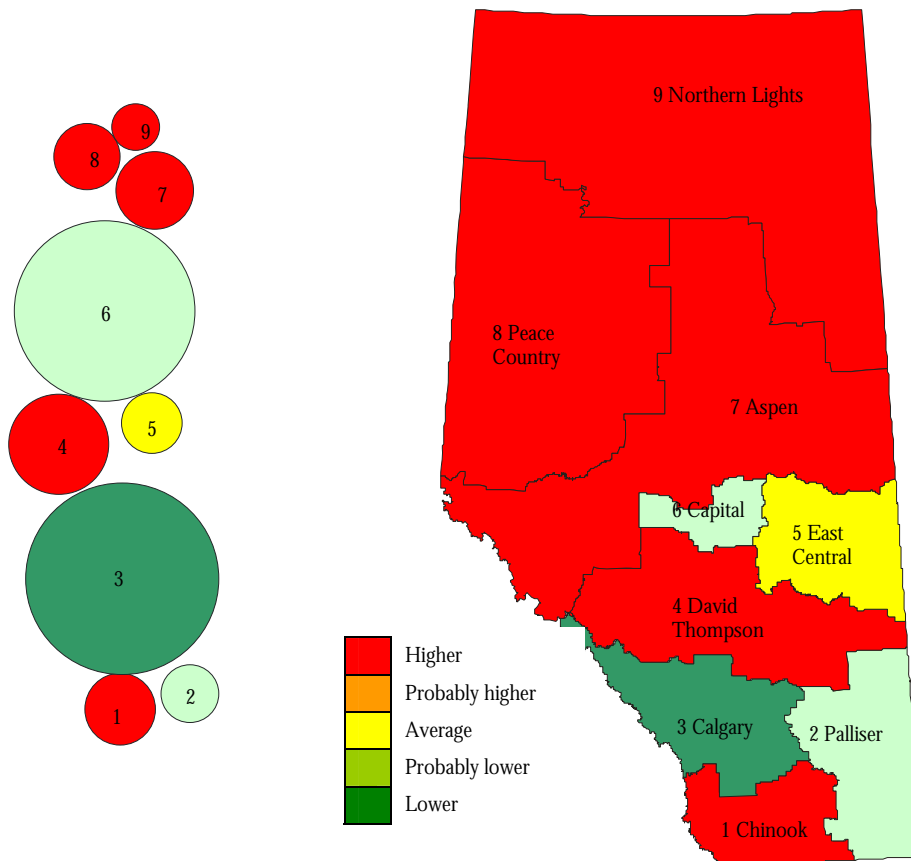
High birth weight babies are classified for this report as those who weigh equal to or over 4500 grams (9.9 pounds) at birth. The incidence of high birth weight is low in Alberta making up 1.6 percent of all live births in 2005. The incidence of high birth weight has remained fairly stable over the last two decades.

Figure 22: Trends in High Birth Weight in Alberta, 1986 - 2005



Source: Vital Statistics, Birth File, May 2006 release

Figure 23: Regional Differences in High Birth Weight, 2003 - 05 combined



Source: Vital Statistics, Birth File, May 2006 release

## Congenital Anomalies

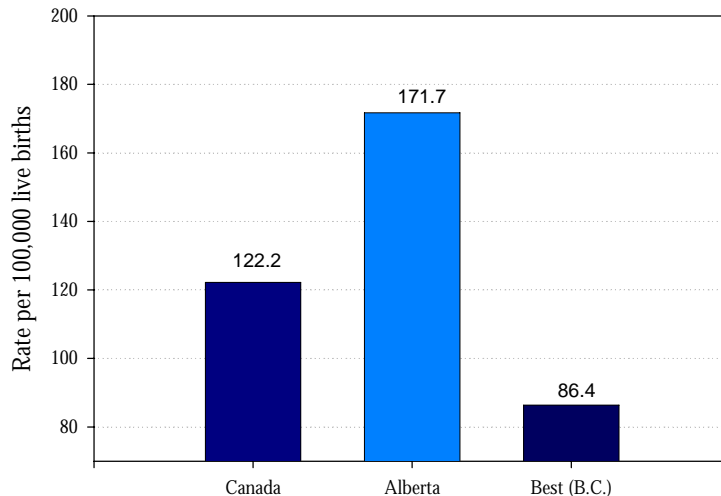
Congenital anomalies are a major contributor to infant mortality. Congenital anomalies represent a wide range of birth defects including heart malformations, skeletal deformities, and body chemistry imbalances. They range from minor to severe, and may result in debilitating disease, physical or mental disability, or early death.

Congenital anomalies may be inherited, or they may result from interference in the womb or from environmental factors such as chemicals or pollutants. Although the causes of most birth defects are unknown, several have been identified. These causes include heredity, genetic abnormalities, chromosomal abnormalities, infections, some prescription and non-prescription drugs, alcohol, smoking, malnutrition, and environmental effects.

Few birth defects can be attributed to a single cause; most result from the interaction between environmental factors and heredity. The outcome depends on inherited susceptibility, the degree of exposure to a hazard, and the stage of pregnancy at which exposure occurs.

In 2004, deaths due to congenital anomalies in infants under one year of age in Alberta was the second highest across the provinces at (171.7). The national average was 122.2 and the best province, British Columbia was 86.4. Alberta's higher rate may in part be due to better case ascertainment and reporting.

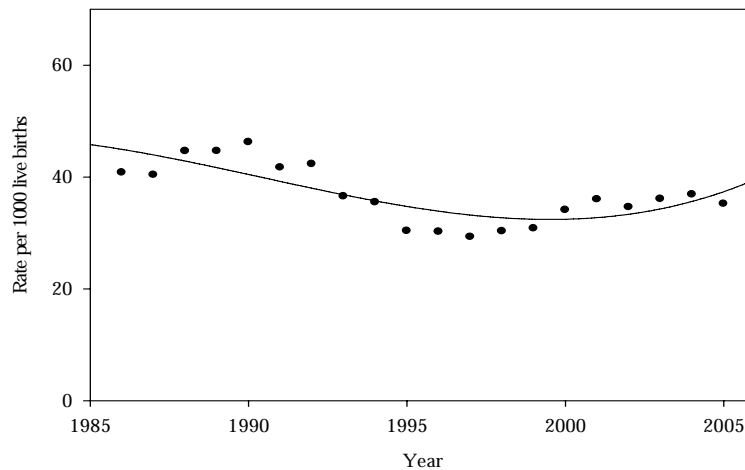
Figure 24: Mortality Rate from Congenital Anomalies, 2004 (Canada, Alberta, Best Province)



Source: Statistics Canada, Health Indicators Database

Over 1,200 babies in Alberta are annually diagnosed with birth defects before their first birthday. In 2005, 1468 babies were born with congenital anomalies (*Alberta Reproductive Health Report, 2006*). Over the past 20 years, the birth prevalence of congenital anomalies decreased during the first decade, and now appears to be increasing again for some categories.

Figure 25: Trends in Congenital Anomalies in Alberta, 1986 - 2005



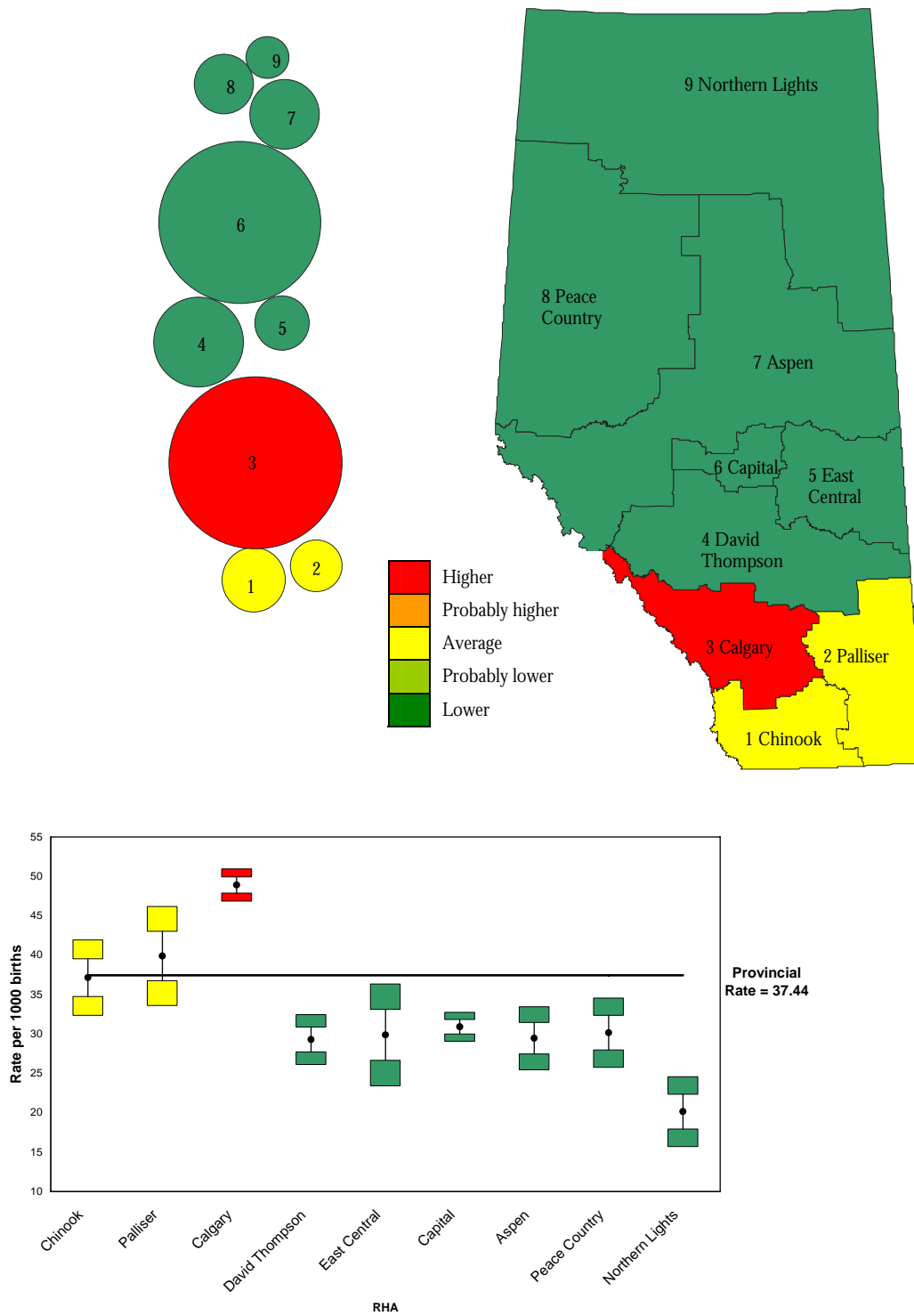
Source: Alberta Congenital Anomalies Surveillance System (ACASS), July 2006 release  
Infants diagnosed with congenital anomalies before their first birthday.

Pre-conception screening for maternal infections and other conditions that may affect the first eight weeks of fetal development is important in preventing congenital anomalies. Establishing good health habits before conception is also important. For example, folic acid supplements taken prior to conception can help prevent neural tube defects.

The availability of genetic services for at-risk couples can help reduce congenital anomalies. Gene analysis, chromosome studies, and biochemical analyses can be done to gather data for diagnosis and treatment of genetic disorders, and to give accurate information to those concerned. Education is also an indispensable tool in preventing congenital anomalies. Teaching prospective parents about how to have a healthy pregnancy is essential.

The rate of all congenital anomalies was higher than the provincial average in the Calgary Health Region. This higher rate may in part be due to better case ascertainment and reporting in the Calgary Health Region. For more detailed information on specific birth defects as they pertain to the Alberta context please refer to the report entitled *Alberta Congenital Anomalies Surveillance Report*. This report is updated on an ongoing basis.

Figure 26: Regional Differences in Congenital Anomalies, 2003 – 05



Source: Alberta Congenital Anomalies Surveillance System (ACASS), July 2006 release

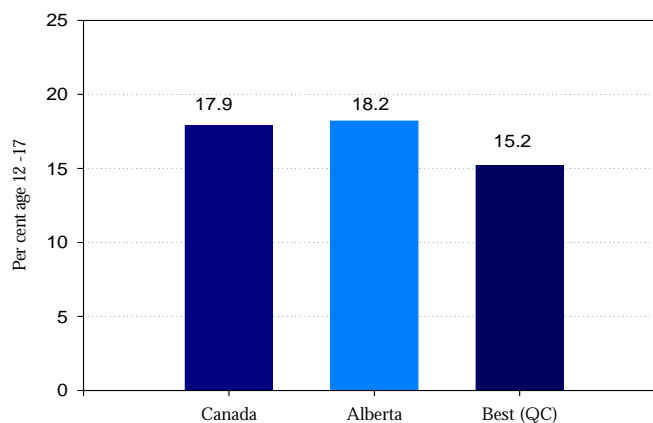
## Childhood Overweight and Obesity

Body Mass Index (BMI) is defined as a person's weight in kilograms, divided by their height in meters squared. International norms have recently been developed that allow for the classification of children aged 2 to 17 as "overweight" or "obese" based on BMI (Cole et al., 2000).

There is concern that overweight and obese children may have a higher risk of developing health problems in later life such as type II diabetes, asthma, arthritis, high blood pressure, hyperlipidemia and thyroid conditions. Further overweight children may also suffer from more emotional stress and lower self-esteem than their normal weight counter parts.

The Canadian Community Health Survey, Cycle 3.1 asked a sample of Canadian Children aged 12-17 years to report their height and weight. From this survey, national and provincial rates for overweight and obese children were estimated. In 2005, Alberta had a slightly higher estimated percentage of overweight children (18.2 per cent) than the Canadian average (17.9 per cent), and Quebec, the province with the lowest percent 15.2.

Figure 27: Percentage of children aged 12 to 17 classified as "obese" or "overweight", 2005 (Canada, Alberta, and best province)

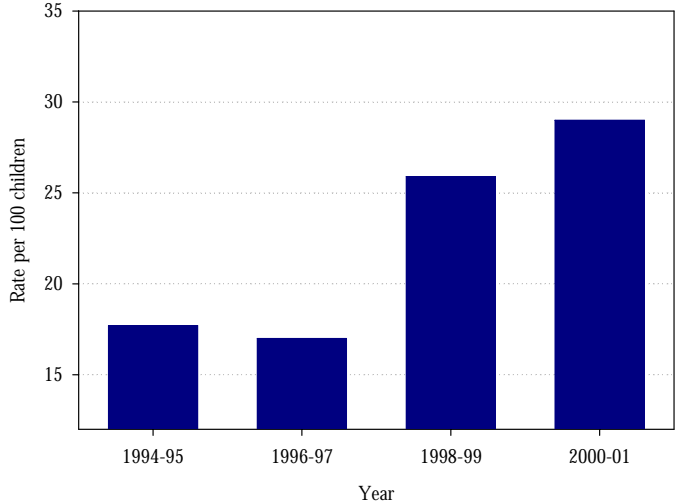


Source: Statistics Canada, Canadian Community Health Survey (CCHS 3.1), 2005

Increases in rates of overweight and obesity in children has been widely reported. However, data on childhood overweight and obesity has only recently been collected on a national and provincial scale, and is only widely available as self-reported measures. In Statistics Canada's National Longitudinal Survey of Children and Youth (NLSCY), height and weight were reported by parents for a sample of Canadian children.

The following table shows the rate of overweight or obesity per 100 children aged 10 and 11 years old in Alberta since 1994-95. Despite the appearance of a rising trend, the confidence intervals reveal that no time trend exists during this time period. Because this data represents only a short time frame, and is based on self-report, trends cannot be inferred. For a more in-depth look at overweight and obesity in children, see the *Alberta Child Health Surveillance Report, 2005*.

Figure 28: Trends in overweight children aged 10 to 11 years (1994-2001)



Source: National Longitudinal Survey of Children and Youth, Cycle 4, Statistics Canada, 2005  
Notes: Children are classified as overweight based on BMI, as per Cole et al. (2000) norms. Data may differ from previously published data due to differences in definitions and dates of data extraction.

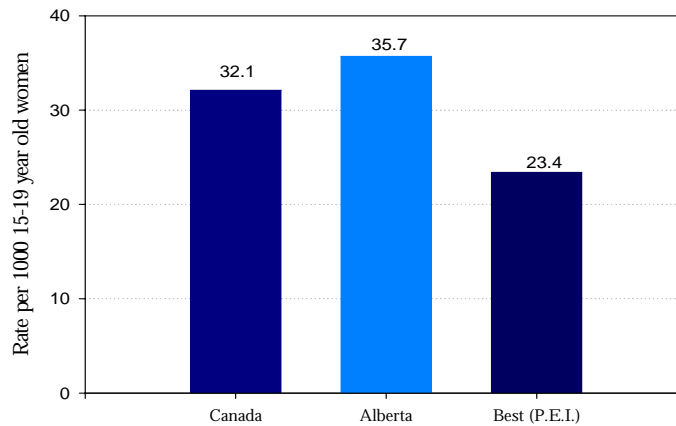
Due to sampling variability and small sample sizes of provincial data, regional health authority comparisons can not be made for childhood overweight or obesity, but may be possible in future reports.

## Teenage Pregnancy

Births to teenage mothers are associated with low birth weight and pre-term birth. Pregnant teenagers are at an increased risk of emotional distress and complications related to pregnancy, such as preclampsia and anemia. However, age is mediated by other factors such as poverty, lack of education, poor family support, and lack of prenatal care.

In 2003, the teenage pregnancy rate in Alberta was 35.7 pregnancies per 1,000 women aged 15 to 19. This rate is somewhat higher than the national average (32.1 per 1,000 females). PEI had the lowest rate (23.4 per 1,000 females aged 15-19 years).

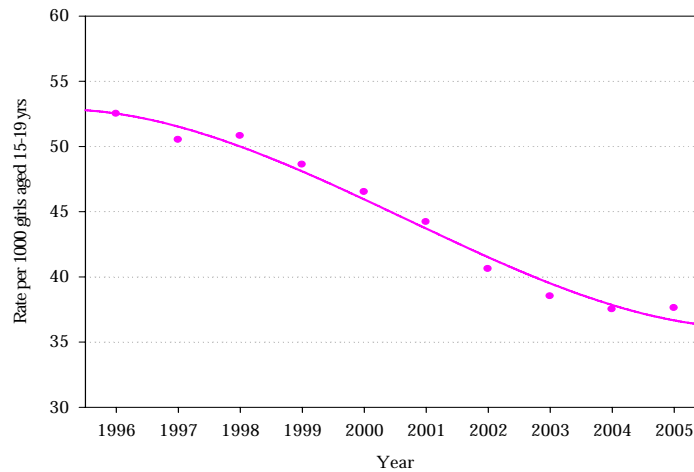
Figure 29: Teenage Pregnancy for Girls Aged 15-19 years, 2003 (Canada, Alberta, Best Province)



Source: Statistics Canada Health Indicators Database

Between 1996 and 2005, the rate of teen pregnancy in Alberta decreased. However, since 2003 it appears to be leveling out. For a more detailed description of teen pregnancy in Alberta see the *Alberta Reproductive Health Pregnancies & Births Report, 2006*. For a more detailed description of pregnancy in girls 10-17 years of age see, the *Alberta Child Health Surveillance Report, 2005*.

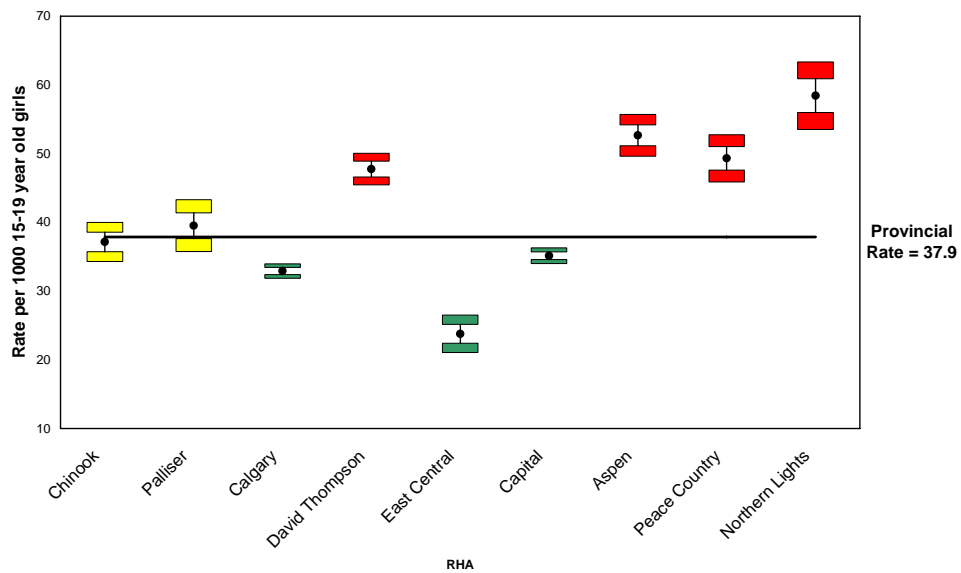
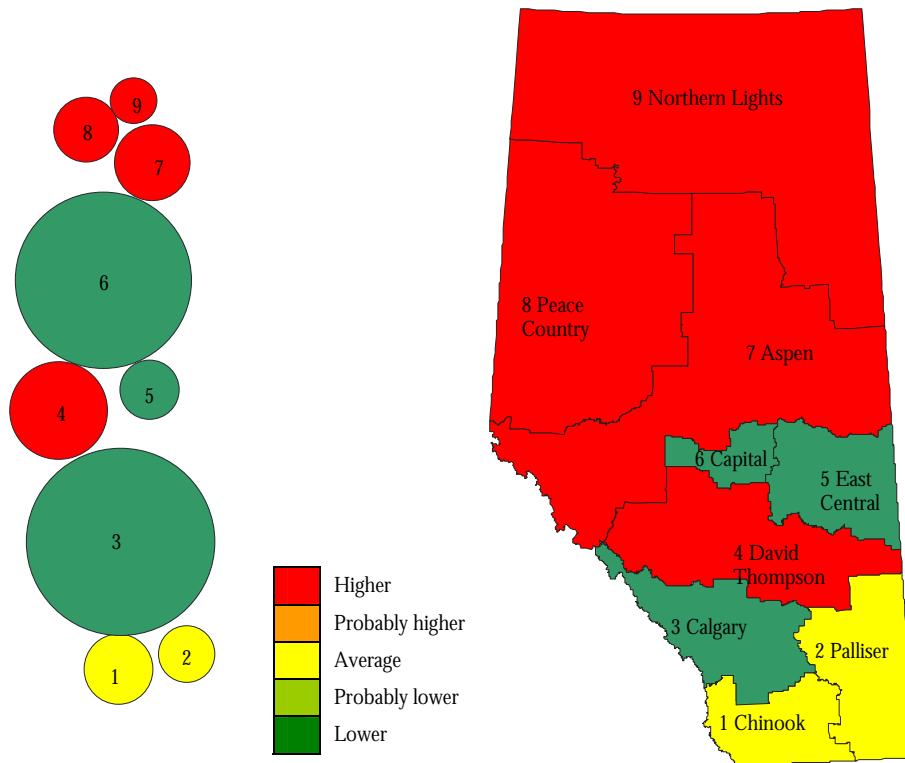
Figure 30: Trends in Teenage Pregnancy in Alberta, 1996 – 2005



Source: Vital Statistics, Birth File

A look at the regional map reveals higher teen pregnancy rates than the provincial average in the northern half of the province and the David Thompson health region. The Capital, Calgary and East Central regions had lower rates than the provincial average.

Figure 31: Regional Differences in Teenage Pregnancy, 2003 - 05 combined



Source: Vital Statistics, Birth File, May 2006 release