

Prevalence of disease, health behaviors, and demand for health services are all pivoted upon the demography of a population. Demography is defined as “the study of populations, especially with reference to size and density, fertility, mortality, growth, age distribution, migration, and vital statistics and the integration of all of these with social and economic conditions.”² This section contains a review of the demographic trends in Alberta over the past 100 years.

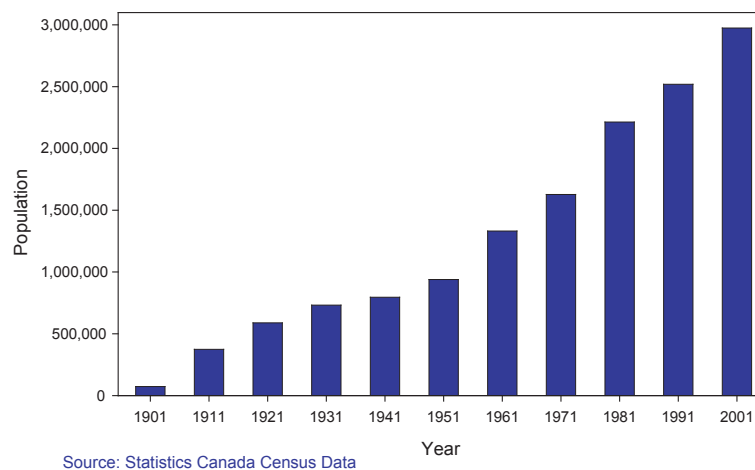
Figure 1 shows Alberta’s population size from 1901 to 2001. In 1901, Alberta’s population was 73,022. One hundred years later, its population has almost reached three million.



Provincial Archives of Alberta, A9436
John Neil Hospital, Cold Lake - 1959



Figure 1 Alberta population 1901 to 2001



Population Distribution

A population pyramid provides a graphic representation of the percentage of males and females in each age group in a total population.³ The series of population pyramids, **Figures 2 to 7**, show a dramatic shift in the structure of Alberta's population over the past 100 years. The population structures in 1901 and 1921 were heavily weighted with young people age nine years or less. In 1901, over 28 per cent of Alberta's population was less than 10 years of age. This dropped slightly in 1921 to about 26 per cent.

Figure 2 Population Distribution, 1901

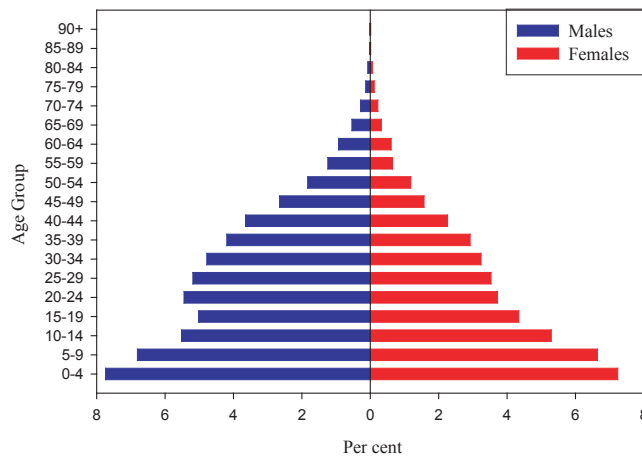
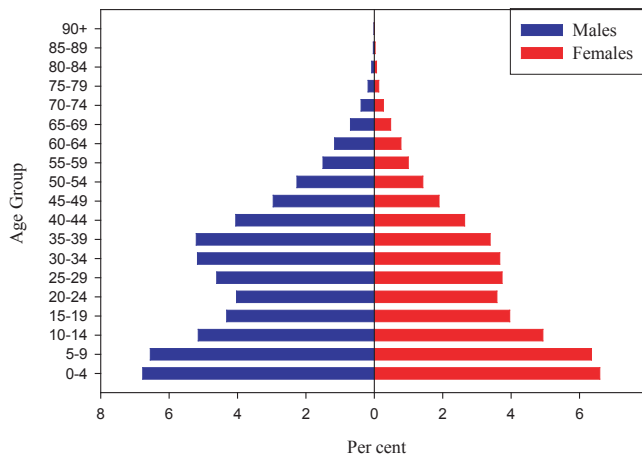


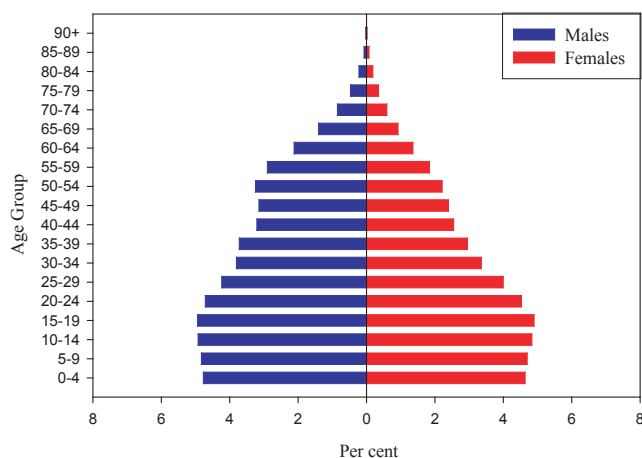
Figure 3 Population Distribution, 1921



Source: Statistics Canada, 1921

The population distribution in 1941 shows a shift towards a higher distribution of people in the teen years and early twenties. The proportion of people under 10 years decreased to 19 per cent in 1941.

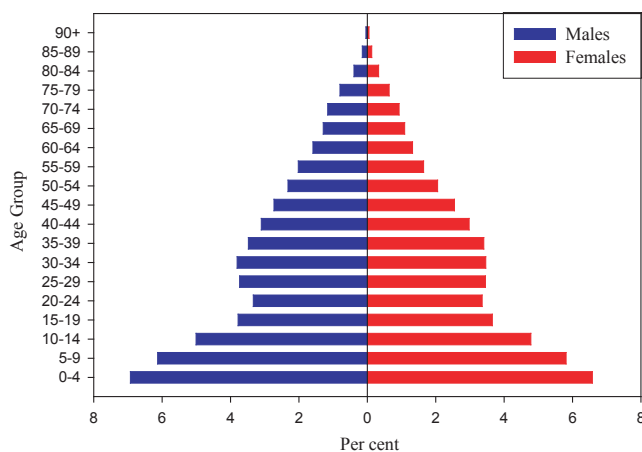
Figure 4 Population Distribution, 1941



Source: Statistics Canada, 1941

The effect of the baby boomer generation (those born between 1941 and 1967) is evident in the pyramid for 1961. The peak of the baby boomer generation occurred in 1960. The 1961 pyramid shows a significant increase in children age nine years or younger compared to 1941.

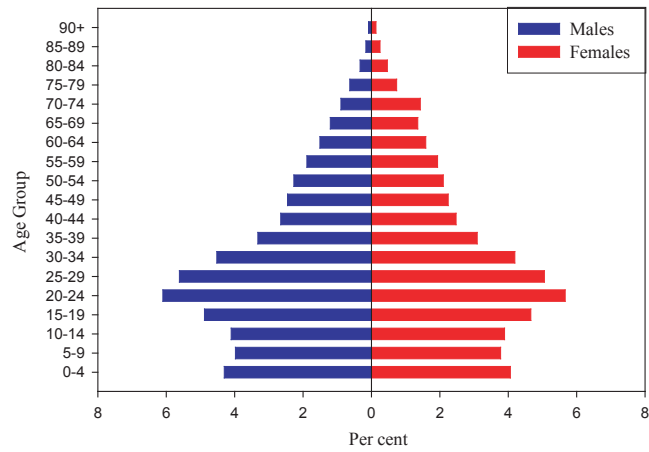
Figure 5 Population Distribution, 1961



Source: Statistics Canada, 1961

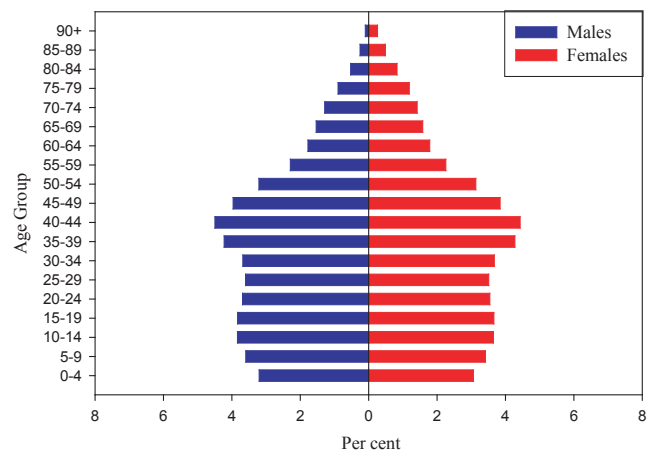
The pyramids in 1981 and 2001 reflect the aging of the baby boomers, in their 20s in 1981 and 40s in 2001. A low proportion of people less than 10 years of age is reflected in the pyramid for 1981; the so-called baby bust cohort of children born between 1967 and 1979, coinciding with a decline in fertility.

Figure 6 Population Distribution, 1981



Source: Statistics Canada, 1981

Figure 7 Population Distribution, 2001

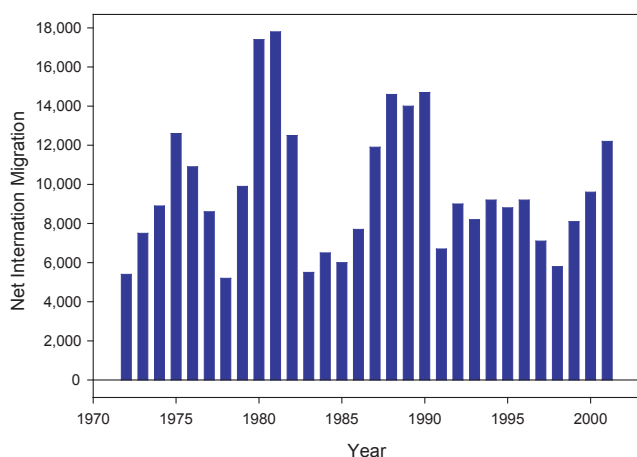


Source: Statistics Canada, 2001

Immigration

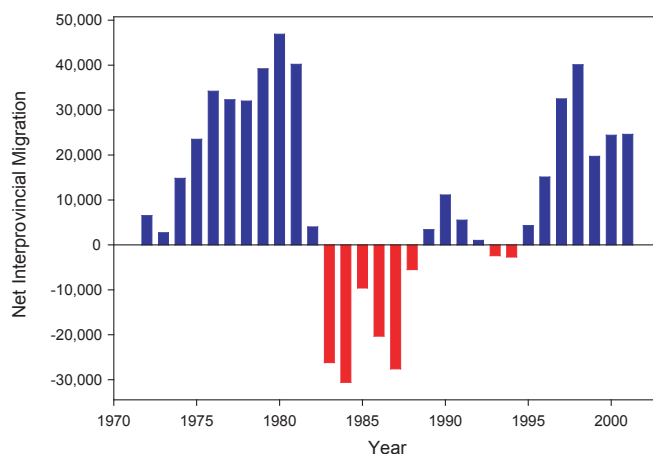
Figure 8 shows the net international migration for Alberta from 1970 to 2000. **Figure 9** shows the net inter-provincial migration between 1970 and 2004. Peak immigration times for international immigration occurred in 1980 and 1990, whereas inter-provincial migration peaked in 1980 and 1998. It should be noted that international immigration continually remains positive, suggesting that more individuals are entering Alberta from outside of Canada than are leaving to other countries. Although more Albertans left for other provinces than came to Alberta between 1981 and 1995, recent trends in provincial migrations show that more individuals from other provinces are now migrating to Alberta.

Figure 8 Net international migration to Alberta, 1970 to 2000



Source: Statistics Canada

Figure 9 Net inter-provincial migration to Alberta, 1972 to 2001

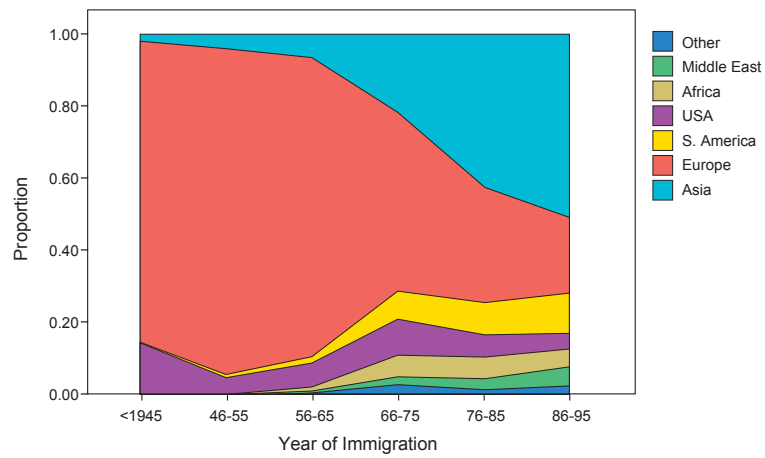


Source: Statistics Canada

Alberta Immigrants

Figure 10 shows Alberta immigrants by time and origin. Alberta has seen a significant shift in immigration over the past century. In the early 1900s, immigrants to Alberta primarily originated in Europe. In 2001, the majority of immigrants in the five years prior came from Asia. This is indicative of an older less mobile population in Europe compared to a younger more mobile population in Asia.

Figure 10 Alberta Immigrants by Year and Origin



HISTORICAL EVENTS

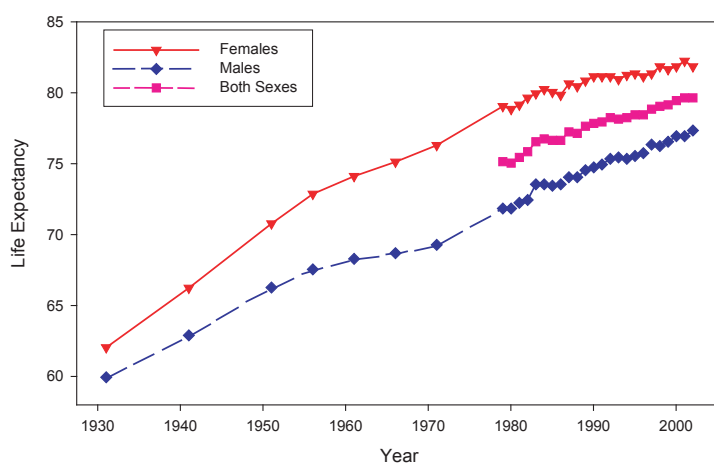
- 1890** Medicine Hat hospital is built and incorporated. The Dominion and Territorial governments, public donations, and companies financed the construction and equipment costs with interests in the west.
- 1891** The Grey Nuns arrive in Calgary taking possession of their new hospital, an unfinished two storey building.
- 1895** The Grey Nuns establish the General Hospital in Edmonton.

Life Expectancy

Life expectancy is an important health status indicator based on the average number of years a person at a given age may be expected to live given current mortality rates.⁴ **Figure 11** shows the life expectancy for males and females in Alberta from 1931 to 2001. Life expectancy in both sexes increased dramatically in the first half of the century reflecting the reduction in infectious diseases and the improvements in maternal and child health. In the second half of the century, life expectancy continued to increase, although at a slower rate.

Over the years, the life expectancy for females continues to be higher than that for males.

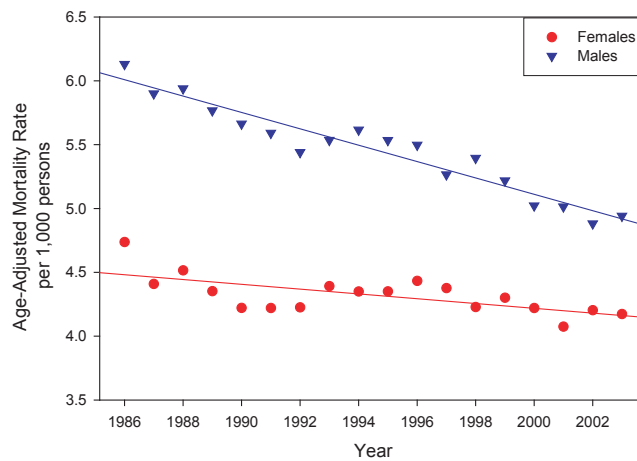
Figure 11 Life expectancy at birth in Alberta, 1931 to 2001



Mortality

Mortality rates give an indication of the overall health of a population. **Figure 12** shows the age-adjusted mortality rates from all causes for Alberta from 1986 to 2003. The age-adjusted mortality rates in Alberta have steadily declined from 1986 to 2003 although the decline has been more prominent in males.

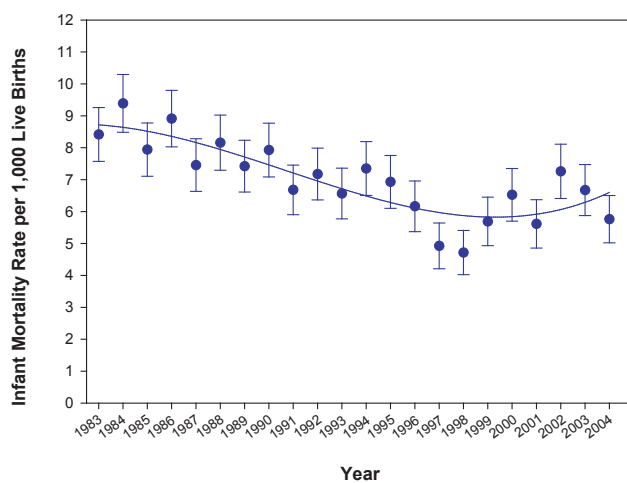
Figure 12 Age adjusted mortality rates per 1,000 population for all causes of death, Alberta, 1986 to 2003



Source: Alberta Vital Statistics Death Files, 1986 - 2003

Infant Mortality

Infant mortality refers to the death of a newborn prior to their first birthday. The infant mortality rate is an internationally accepted measure of population health status. Prematurity and low birth weight are the two strongest predictors of infant mortality. **Figure 13** displays the infant mortality rate for Alberta from 1983 to 2004. Between 1983 and 1998 there was a significant decline in the rate of infant deaths. Since 1998 the rate appears to have leveled at a rate between six and seven deaths for every 1,000 live births.

Figure 13 Infant mortality rate per 1,000 live births, Alberta, 1983 to 2004

HISTORICAL EVENTS

- 1905** The province of Alberta is born on September 1. Physicians in southern Alberta claim regular outbreaks of typhoid are due to polluted water
- 1906** The first Provincial Medical Officer of Health, Dr. A.E. Clendennan, is appointed. He reports outbreaks of smallpox, diphtheria, scarlet fever, and typhoid fever. In Germany, Dr. Alois Alzheimer first describes a disorder with progressive loss of memory and intellectual functioning.
- 1907** The *Public Health Act* is passed as Alberta's first piece of health legislation, creating a Provincial Board of Health. The Alberta Provincial Laboratory was established with Dr. G.V. Revell appointed Provincial Bacteriologist.
- 1907** The Holy Cross Hospital, operated by the Grey Nuns, opens its school of nursing. Five graduates receive their diplomas in 1910.

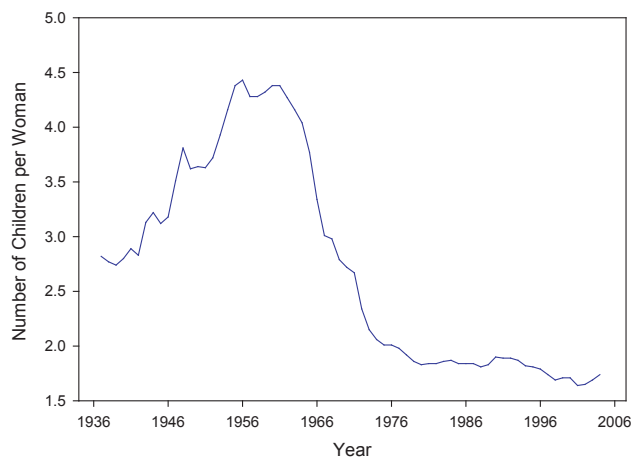
Fertility

Fertility is the bearing of living children. A complex issue, fertility is more than biological potential and is influenced by cultural, social, economic, religious and other factors.

Total Fertility Rate

The Total Fertility Rate (TFR) is defined as the average number of babies born to women during their reproductive years. A TFR of 2.1 births per woman is considered the replacement rate; and would imply a stable population assuming no immigration or emigration takes place. The total fertility rate in Alberta decreased from 1.81 births per woman in 1986 to 1.69 births per woman in 2003. The years 1945 thru 1960 show a spike in fertility that is indicative of the baby boom; at its peak, women were having over four children on average.

Figure 14 Total fertility rate for Alberta, 1936 to 2003

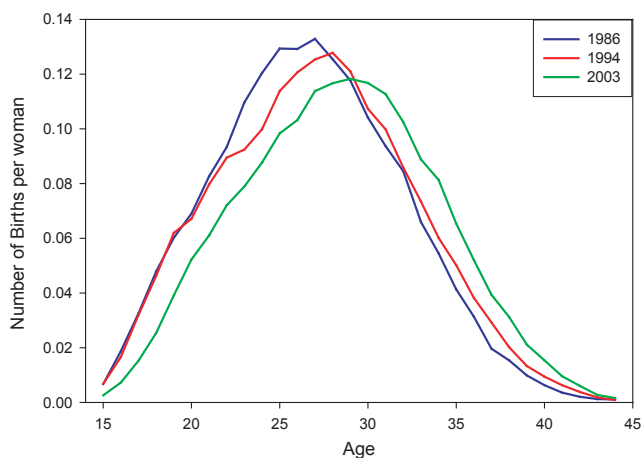


Source: Statistics Canada

Age Specific Fertility

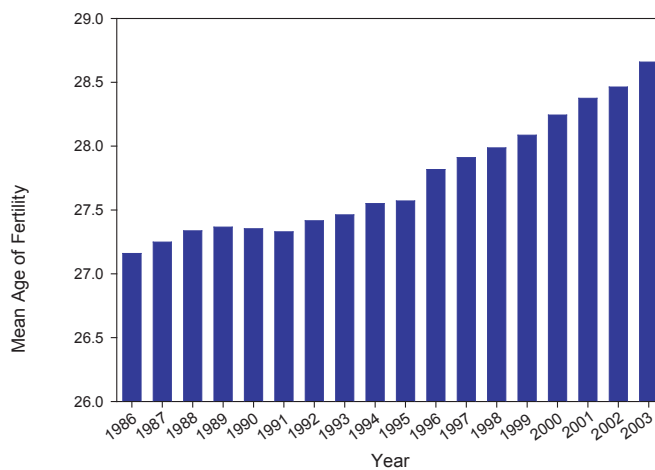
Figures 15 and 16 show the age specific fertility rates in Alberta for 1986, 1994 and 2003 and the mean age of fertility in Alberta from 1986 to 2003. The downward shift in the fertility curve indicates decreased fertility. The shift to the right indicates an increase in the mean age of fertility. Adjusting for the changing age structure of female population aged 15 to 44, the mean age of fertility increased from 27.2 in 1986 to 28.5 in 2002. This indicates that childbearing is starting later and women are having fewer children.

Figure 15 Age-specific fertility rates, Alberta 1986, 2004, and 2003



Source: Alberta Vital Statistics Birth Files, 1986 - 2003

Figure 16 Mean age of fertility in Alberta, 1986 to 2003

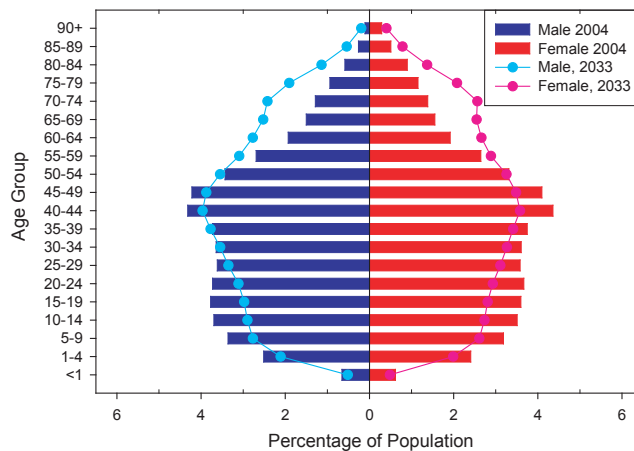


Source: Alberta Vital Statistics Birth Files, 1986 - 2003

Population Growth

Alberta’s population is projected to surpass five million by the year 2033, growing at about 1.6 per cent annually. Not only will the population be growing, but it will continue to get older. The median age of Alberta’s population in 2004 was just over 35 years, and is expected to be over 40 years by 2033. **Figure 17** compares Alberta’s age structure in 2004 with what was projected by 2033. The proportion of the Alberta population aged 65 and over is projected to be 18.6 per cent by 2033, compared to 10.5 per cent in 2004.

Figure 17 Population Distribution, 2004 and projected to 2033



Source: AHCIP Stakeholder Registry, 2004
Population Projections for Alberta and its Health Regions, 2004 to 2033