

The Health and Well-being of the Aboriginal Population in British Columbia

Interim Update

February 2007



**Office of the
Provincial Health Officer**

Table of Contents

Terminology.....	1
Health Status of Aboriginal People in BC	2
Challenges in Vital Statistics Data.....	3
Contents of This Report	4
Healthy Growth and Development.....	5
Low Birthweight	5
Pre-term births	6
Infant Mortality	7
Births to Teenage Mothers.....	8
Disease and Injury Premature Mortality	9
Potential Years of Life Lost.....	9
Diabetes.....	11
All Cancers.....	12
HIV Disease	13
Suicide Deaths	14
Alcohol-related Deaths	15
Smoking-attributable Deaths	16
Drug-induced Deaths	17
Summary.....	17

The Health and Well-being of the Aboriginal Population – Interim Update

As reported in the 2001 Provincial Health Officer's Annual Report, *The Health and Well-being of Aboriginal People in British Columbia*, the health status of Aboriginal people in the past few decades has improved significantly in several key respects. Yet the Aboriginal population in BC continues to experience a higher incidence of poor health and a disproportionate rate of chronic diseases and injuries compared to other BC residents.

This report presents an interim update of selected health status indicators. A detailed update of the 2001 Provincial Health Officer's Annual Report will be released in the Fall 2007.

Terminology

The terminology used to refer to the indigenous population in Canada has varied over the years. Aboriginal people are the descendants of the original inhabitants of North America. The *Constitution Act* recognizes three groups of Aboriginal people: Indian, Inuit, and Métis people. "First Nations" has largely replaced the term "Indian" as the terminology preferred by many Aboriginal people in Canada, although "Indian" is still used when referring to legislation or government statistics.

First Nations people are often considered to be members of a First Nation band or tribe. First Nations refers to both Status Indians and Non-Status Indians. Status Indians are those who are entitled to receive the provisions of the *Indian Act*. Non-Status Indians are those who do not meet the criteria for registration or who have chosen not to be registered.

The Inuit live primarily in Nunavut, the Northwest Territories, and northern Labrador and Quebec. While not subject to the *Indian Act*, Inuit can be subject to regulation by similar federal legislation.

The Métis population consists of people of mixed First Nation and European ancestry who identify themselves as Métis, distinct from Indian people, Inuit, or non-Aboriginal people. Most Métis people live in the three prairie provinces. Unlike Status Indians and Inuit, the Métis are not entitled to the provisions of the *Indian Act*.

The size of the Aboriginal population in BC is uncertain. According to the 2001 Canadian Census, 170,025 Aboriginal people lived in BC in 2001. Of these individuals, 118,290 were Status Indians, 44,270 were Métis, 805 were Inuit, and 6,660 were considered as other.

Although there is considerable interest in the health status of all Aboriginal people (including Métis, Non-Status, and Inuit), in most cases, relevant data are only available for Status Indians. Information to identify Status Indian data in this report was obtained from the British Columbia Vital Statistics Agency (VSA), British Columbia Medical Services Plan, and the First Nations and Inuit Health Branch of Health Canada.

The major source of birth and death data is from the British Columbia Vital Statistics Agency's statistical database (VS). Information from registrations of birth includes a Status Indian identifier based on parent information, while registrations of death include band numbers for Status Indians. Another database used to identify Status Indians in the province was the Indian

The Health and Well-being of the Aboriginal Population – Interim Update

Status Verification File (SVF) of the First Nations and Inuit Health Branch, Health Canada, originating from the Department of Indian Affairs and Northern Development. It should be noted that this database of Status Indians resident in British Columbia includes Status Indians born and registered in other provinces. A third database used to identify Status Indians in the province was the Status Indian Entitlement files from the British Columbia Medical Services Plan. Through an extensive computer matching process, a birth or death in the VS database was considered to be a Status Indian event if the individual was identified as a Status Indian in any of the three sources.

Using all the above sources, the data presented in this report represent an estimated 151,783 Status Indians, or approximately 3.7 per cent of BC's population. As in the 2001 report, we have extrapolated the findings from this population and make the assumption that they are relevant to the Non-Status Aboriginal population in BC.

Health Status of Aboriginal People in BC

Improvements in health status for First Nations people are seldom achieved from isolated activities, but instead are the result of longer-term commitments to greater inclusiveness and to addressing the socio-economic determinants of health. This approach has led to a focused, outcome-based plan to improve the health of First Nations people in BC.

In March 2005, the Province of British Columbia and the First Nations Leaders agreed to a *New Relationship* guided by principles of trust, recognition, and respect for Aboriginal rights and title. The *New Relationship* commits to greater collaboration to close the gap in the quality of life between the First Nations population and other BC residents.

In November 2005, the Province of British Columbia, the First Nations Leadership Council, and the Government of Canada signed the *Transformative Change Accord*, which identified general actions to close the gaps in education, health, housing, and economic opportunities over the next ten years. Building on the Accord, the *First Nations Health Plan* was developed and released in November 2006. This plan identified 29 specific actions in four areas, with seven key targets, to close the gap and improve the health of the First Nations population in BC. These seven key targets are:

- Life expectancy at birth
- Mortality rates (deaths due to all causes)
- Status Indian youth suicide rates
- Infant mortality rates
- Diabetes rates
- Childhood obesity
- Practicing, certified First Nations health care professionals

The focus on First Nations people will help address health status issues for about two-thirds of the Aboriginal population in BC. Additional attention will be required to improve the health of Métis and other Aboriginal people whose needs are not directly addressed in the *First Nations Health Plan*.

Challenges in Vital Statistics Data

Since 1991, the Vital Statistics Agency (VSA) has provided data and analysis for the Status Indian population, based on birth and death events registered in British Columbia. The agency has conducted extensive record linkages and matching processes using several available source systems to flag vital records as Status Indian.

Previously, the process for determining Indian status for life events required the extraction into separate files of life event records from the Vital Statistics registries. Reference files were also extracted from other systems, including Medical Services Plan, and were used for matching and record linkage processes. Several complex, hand-coded programs were also manually executed to perform these linkages and to flag the life events.

In 1998, VSA implemented a new operational registry system. Changes to this source system and the resulting file extraction for record linkage resulted in the external programs no longer identifying some deaths, in particular infant deaths. From 1998 onwards, Status Indian infant deaths were only identified based on information from death records, leading to approximately 50 per cent lower reported infant mortality in the Status Indian population.

Status Indian infant deaths are now identified using Generic Application Modeling Environment (GAME) technology. This technology improves data quality assurance processes by increasing data accuracy and integrity; organizing information into dimensional structures that support the linkage of events and enable the consistent maintenance and integrity of Status Indian identification of individuals over time; and providing a robust means to create, maintain, and report information that intersects multiple event types.

The use of this technology has resulted in the detection of the systemic error in identifying and reporting Status Indian infant deaths. It also provides a more robust technology that enables more complete and automated processes that can detect and prevent these types of errors from occurring.

In addition to the difficulties seen with infant mortality data, the accurate calculation of mortality rates for the older age groups in the Status Indian population has also been a challenge. This problem is due to the small number of deaths and small-sized age groups, which generally result in large, random variations. To correct this problem, a modified approach using a life expectancy indicator is being adopted. In this approach, for any particular age group, where the preliminary estimate of the mortality rate for the Status Indian group is less than the mortality rate for other BC residents, the higher rate is used in all calculations of Status Indian health statistics. The reason for this modification is that when rates of rare events are estimated, observed numbers may not reflect the underlying mortality risk, in which case an alternative rate may be more accurate.

Contents of This Report

This interim report updates a limited number of health indicators for which information was available. Data for some of these indicators are preliminary and are therefore subject to change. A more detailed analysis will be provided in the upcoming Provincial Health Officer's annual report, which will be released in the Fall 2007. The indicators included in this interim report are:

Healthy Growth and Development

- Low birthweight
- Pre-term births
- Infant mortality
- Births to teenage mothers

Disease and Injury Premature Mortality

- Potential years of life lost standardized rates (PYLLSR) for all causes of deaths - Total, males, females
- Potential years of life lost standardized rates (PYLLSR) for the following causes of deaths:
 - Diabetes
 - All cancers
 - HIV disease
 - Suicide deaths
 - Alcohol-related deaths
 - Smoking-attributable deaths
 - Drug-induced deaths

Please Note:

Throughout this report, confidence intervals have been added to the charts. A confidence interval is a statistical technique that measures the range of values estimated in the sample of a population. A 95 per cent confidence interval means that 19 times out of 20, the true values lies between the horizontal bars shown as (I) on the charts. Because of the fluctuations in the small numbers of events, the use of confidence intervals helps to determine whether changes from year to year are more likely to be due to chance alone or are reflecting a real “change”.

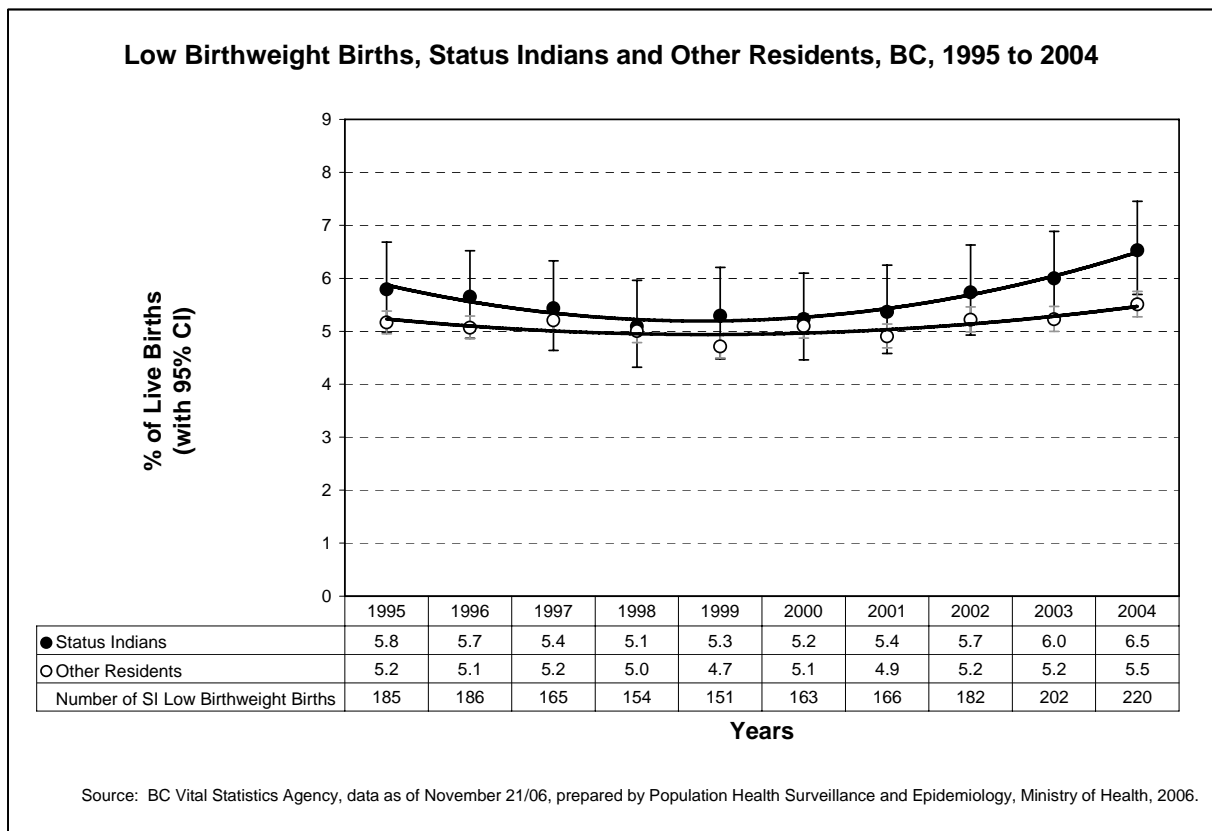
Healthy Growth and Development

Low Birthweight

Low birthweight refers to live births of less than 2,500 grams (5.5 lbs). This indicator is chosen as these babies have a higher probability of encountering problems with illness and development. Internationally, this indicator is used to measure the adequacy of maternal prenatal care. Canada as a whole compares well with other countries and BC compares well with the rest of the Canada.

From 1995 to 2004, the Status Indian population had consistently higher rates of low birthweight compared to other BC residents. In 2004, 6.5 per cent of all births were categorized as low birthweight in this population, compared to 5.5 per cent for other BC residents (Figure 1).

Figure 1

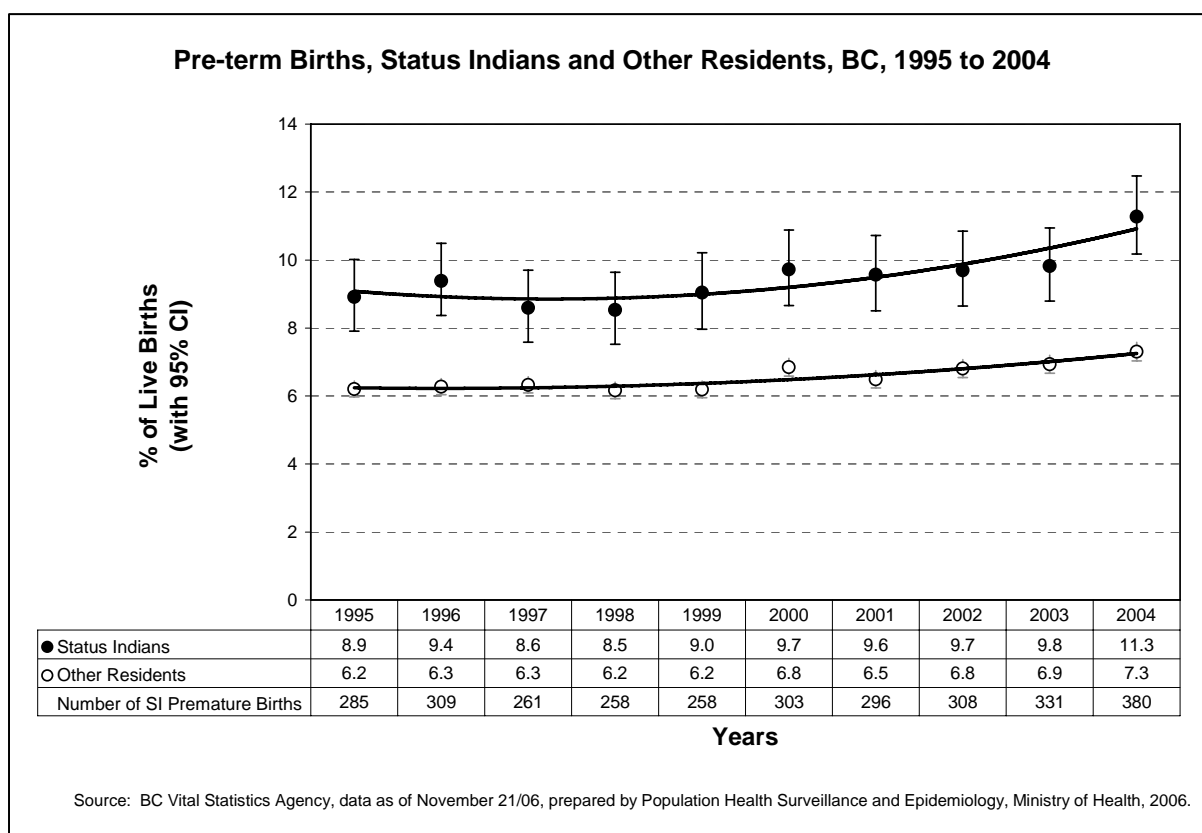


Pre-term births

Pre-term births are defined as premature births that have a gestational age of less than 37 weeks. As with low birthweight, this indicator also reflects the fact that pre-term babies have a higher probability of encountering problems with illness and development.

From 1995 to 2004, the rates of pre-term births for Status Indians were much higher than for other BC residents. The increase in trends is evident in both populations during the 10-year period, with the highest rates in 2004 at 11.3 and 7.3 respectively (Figure 2).

Figure 2



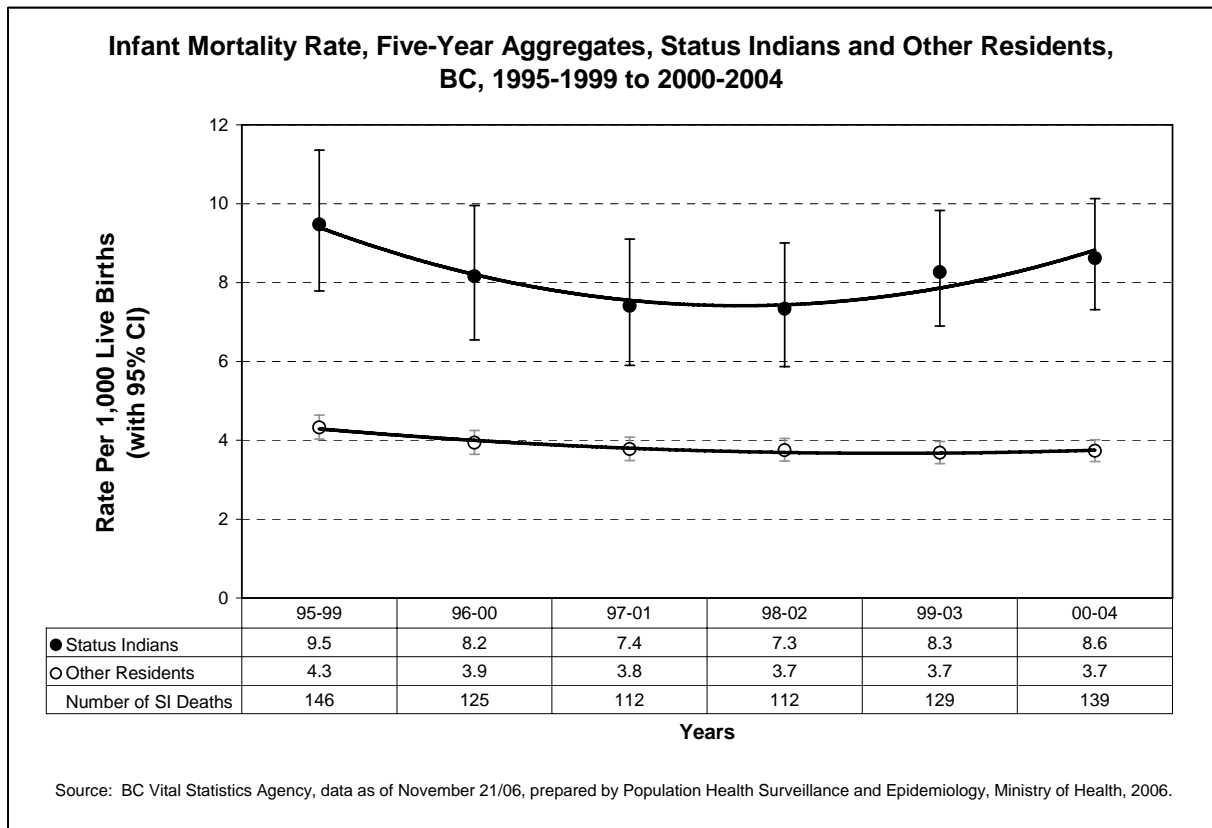
For both Status Indians and other BC residents, it looks as if the rates of both low birthweight and pre-term births have been increasing over the past five years. Detailed analysis of other BC resident births suggests that this is due, in part, to increasing maternal age, increasing access to reproductive technologies, and an accompanying increase in multiple births, which are likely to result in smaller premature babies. These causes are unlikely to underlie the increase for Status Indian mothers since, on average, they are younger than mothers in the other BC resident population. More research needs to be done to investigate the factors that underlie the worsening indicators of maternal/infant health, and appropriate remedial programming should be implemented once the underlying factors are understood.

Infant Mortality

Infant mortality refers to the death of a child less than one year of age; it is widely accepted as a measure of health status in a population.

Figure 3 illustrates 5-year aggregate infant mortality rates from 1995–1999 to 2000–2004. From 1995–2004, the infant mortality rates decreased slightly for both Status Indian and other BC residents; however, a large gap still exists between the two populations. This is not unexpected in view of the above-noted gaps in low birthweight and pre-term birth rates. The 5-year aggregate rate during 2000–2004 was 8.6 for the Status Indian population and 3.7 for other BC residents. In the last 5 years, there has been a small (although not statistically significant) increase in the Status Indian infant mortality rates.

Figure 3



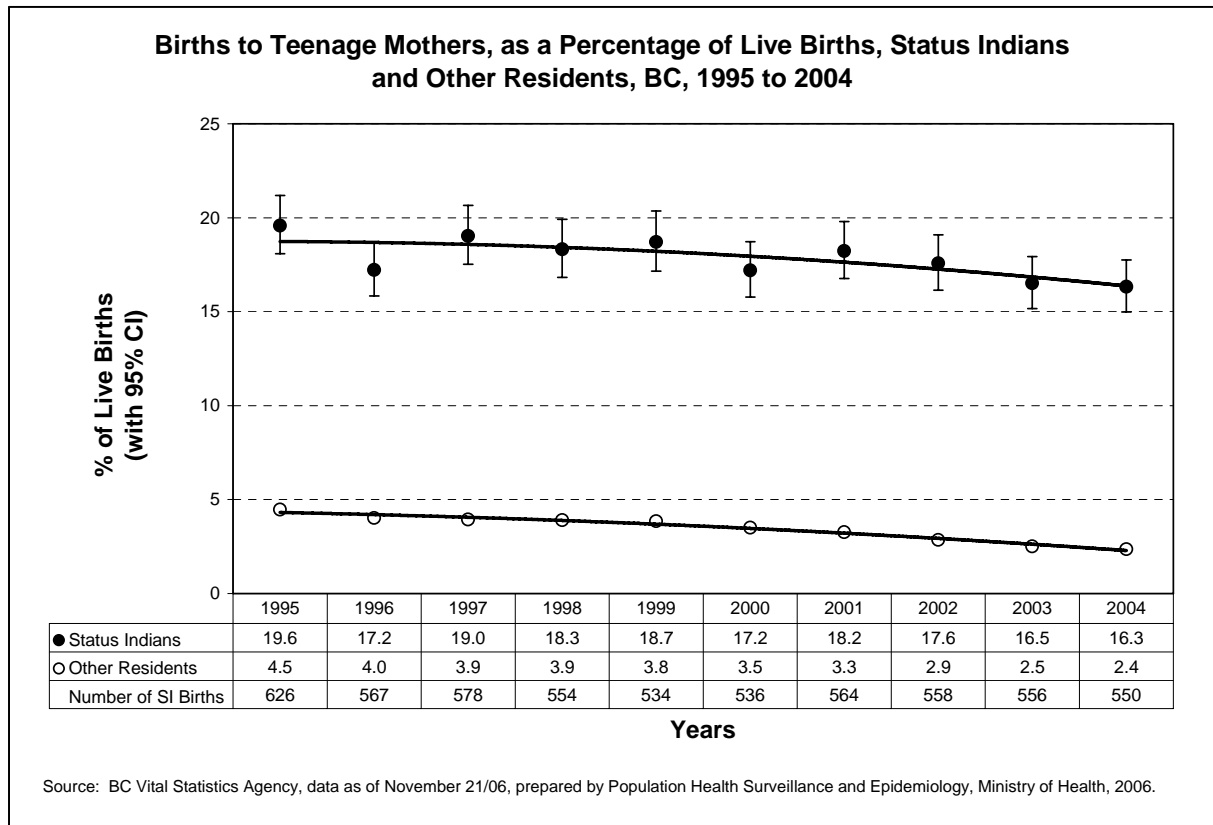
Based on the *First Nations Health Plan*, released in November 2006, a target has been set to reduce the gap in infant mortality between First Nations and other British Columbians by 50 per cent by 2015.

Births to Teenage Mothers

A teenage mother is defined as a mother who is less than 20 years of age at the time of delivery of her baby. From a biological perspective, the ideal time for a woman to have children is in her twenties. Teen pregnancy—especially before the age of 18—is a health and social concern in the general population, because mothers in their early teens face higher risks during pregnancy, and early childbearing often begins a cycle of poverty and dependence. Babies born to teen mothers are more likely to die in the first year of life, in both the Status Indian population and the other BC residents population. On average, Aboriginal women have more children and have them earlier in life compared to other BC women.

From 1995 to 2004, the rate of births for teenage mothers has decreased for both Status Indians and other BC residents; however, the Status Indian population has a significantly higher rate of teenage mothers compared to other BC residents. In 2004, the percentage of teenage mothers was 16.3 for the Status Indian population compared to 2.4 for other BC residents (Figure 4).

Figure 4



Disease and Injury Premature Mortality

Potential Years of Life Lost

The Potential Years of Life Lost (PYLL) indicator is a measure of premature death which counts the number of years of life lost when a person dies before a specified age (75 years in this case). The PYLL Standardized Rate (PYLLSR) is age-standardized and is expressed as a rate per 1,000 population, adjusted to a standard population (1991 Canada Census). From 1995–2004, the top five highest PYLLSR for the Status Indian population were: motor vehicle accidents, accidental poisoning, suicides, ischemic heart disease, and chronic liver disease/cirrhosis (Figure 5). Figures 6 and 7 illustrate the difference in the PYLLSR patterns for males and females. The top five highest rates for males were: suicides, motor vehicle accidents, accidental poisoning, ischemic heart disease, and HIV disease. For females, the top five were: accidental poisoning, motor vehicle accidents, chronic liver disease/cirrhosis, suicides, and cerebrovascular diseases.

Status Indians are more likely to die before age 75 from any cause compared to other BC residents. However, the differences are particularly marked for what are called external causes of death, i.e., motor vehicle accidents, accidental poisonings, suicides, homicides, as well as causes such as heart disease, cirrhosis, and HIV disease. All of these are theoretically preventable and are amenable to interventions.

Figure 5

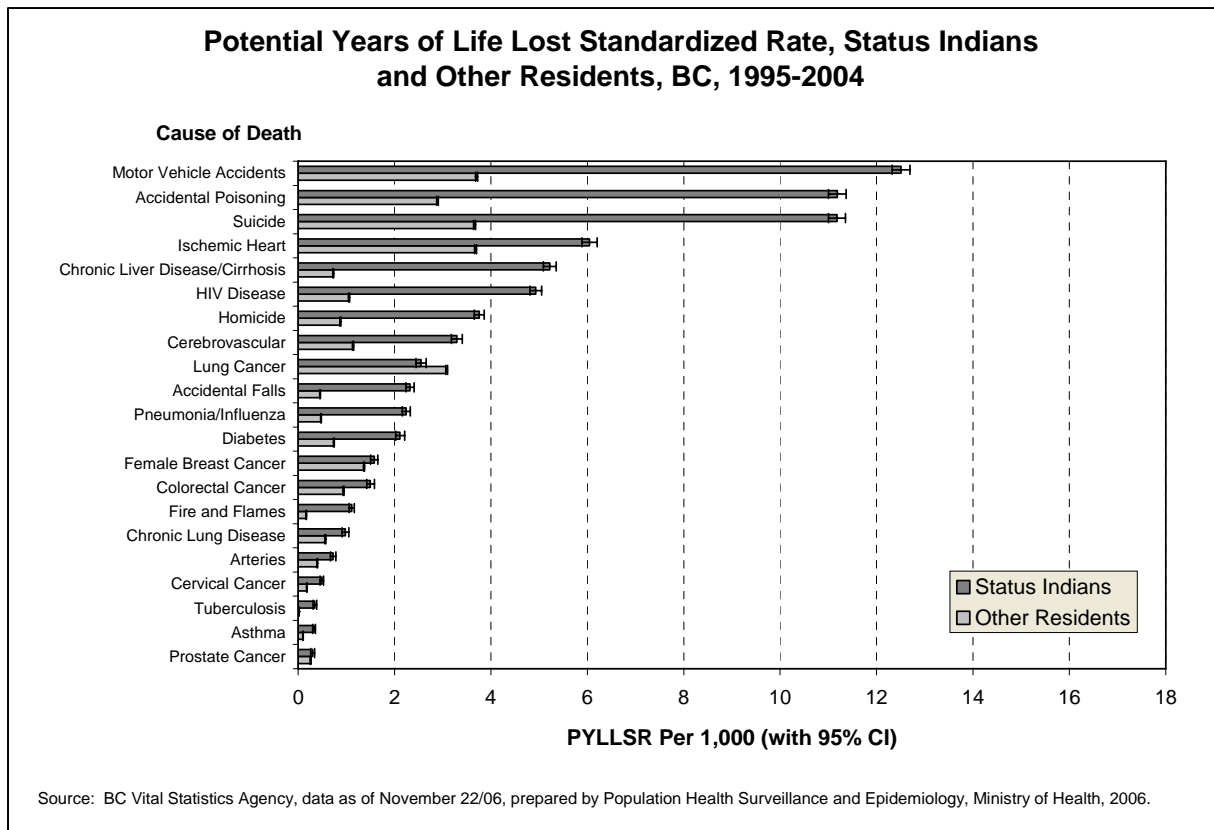


Figure 6

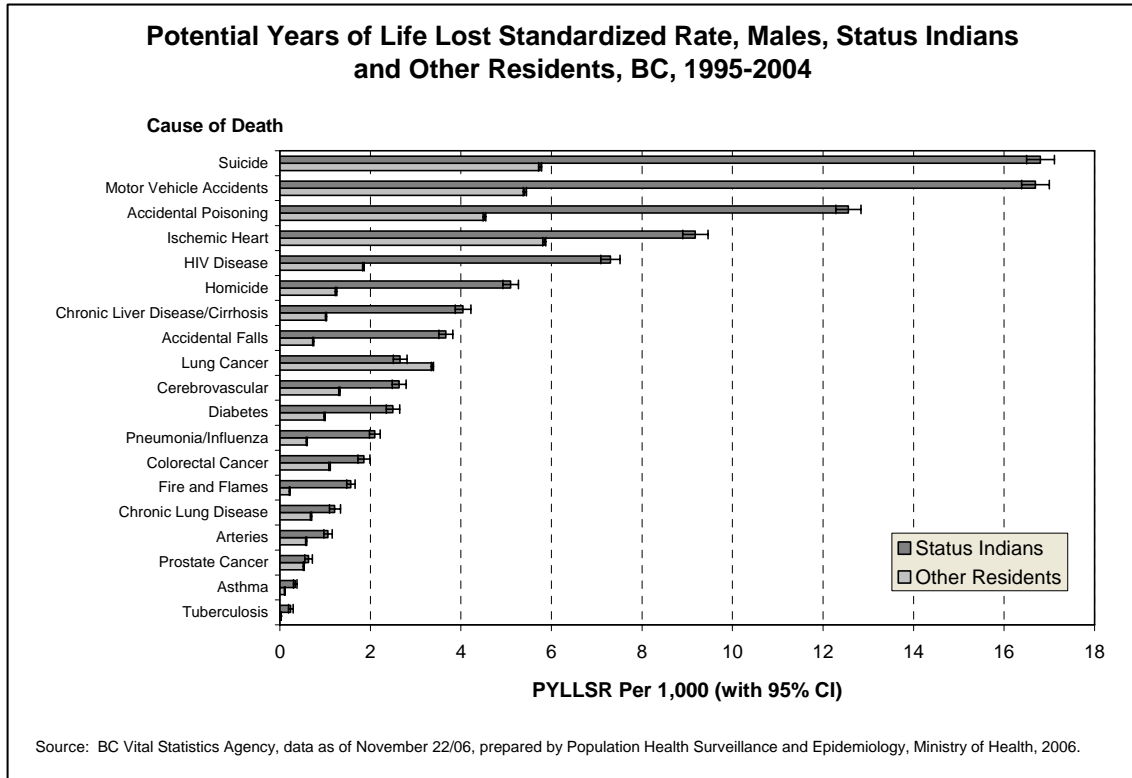
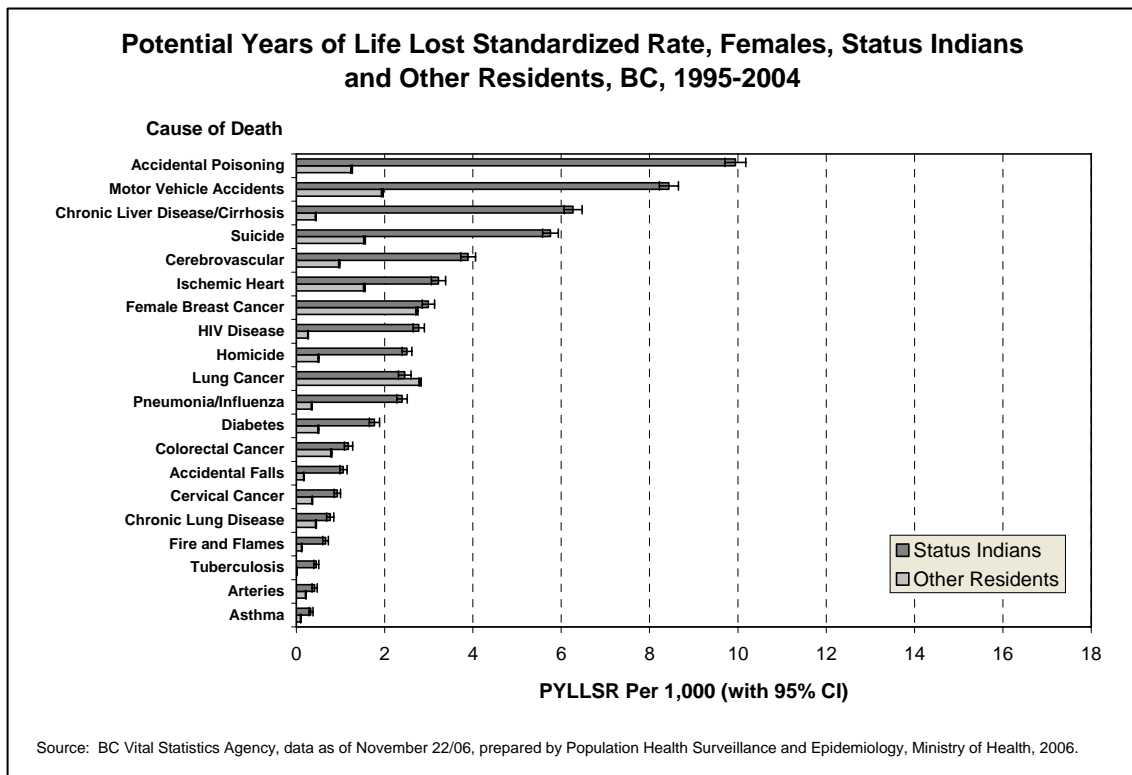


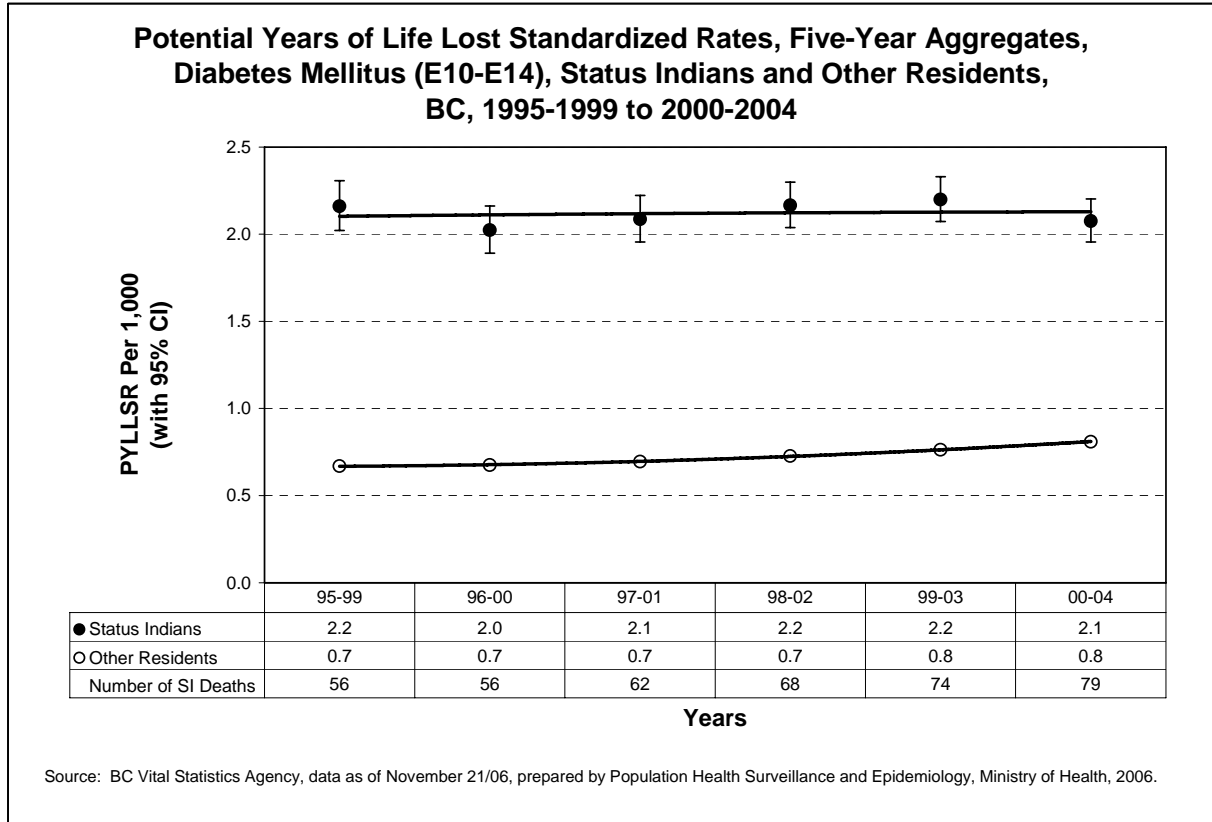
Figure 7



Diabetes

The prevalence of diabetes among the Status Indian population is about 1.4 times higher than for other BC residents. The 5-year aggregate PYLLSR for diabetes was significantly higher for this population during the 10-year period of 1995 to 2004, with no improvement over this time period. From 2000–2004, the PYLLSR for diabetes for the Status Indian population was 2.1, compared to 0.8 for other BC residents (Figure 8).

Figure 8

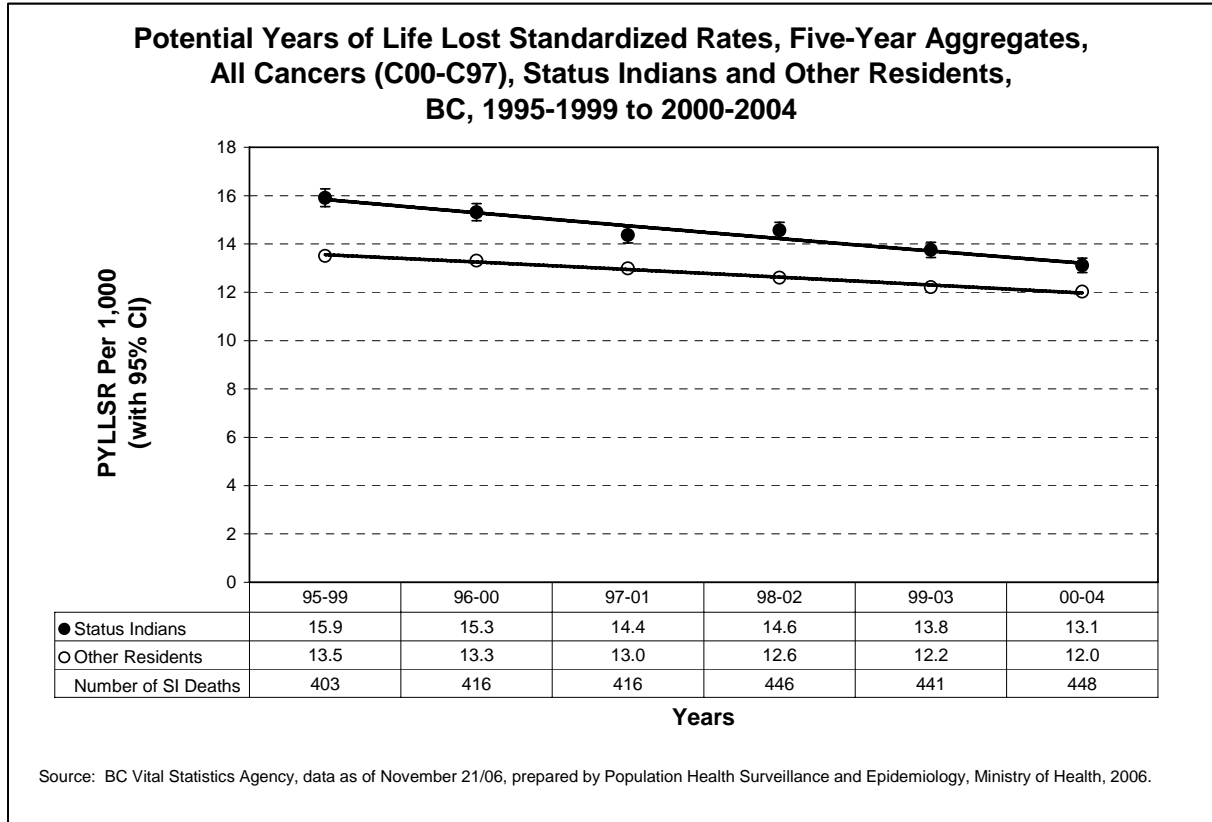


Based on the *First Nations Health Plan*, released in November 2006, a target has been set to reduce the gap in the prevalence of diabetes between First Nations and other British Columbians by 33 per cent by 2015.

All Cancers

Figure 9 illustrates the five-year aggregate PYLLSR for all cancers. Since 1995, the five-year aggregate rates show continuously higher PYLLSR for all cancers for the Status Indian population compared to other BC residents. However, the rates for the Status Indian population appear to be decreasing faster than for other BC residents, and the gap has gradually narrowed. The PYLLSRs have been declining for both populations since 1995.

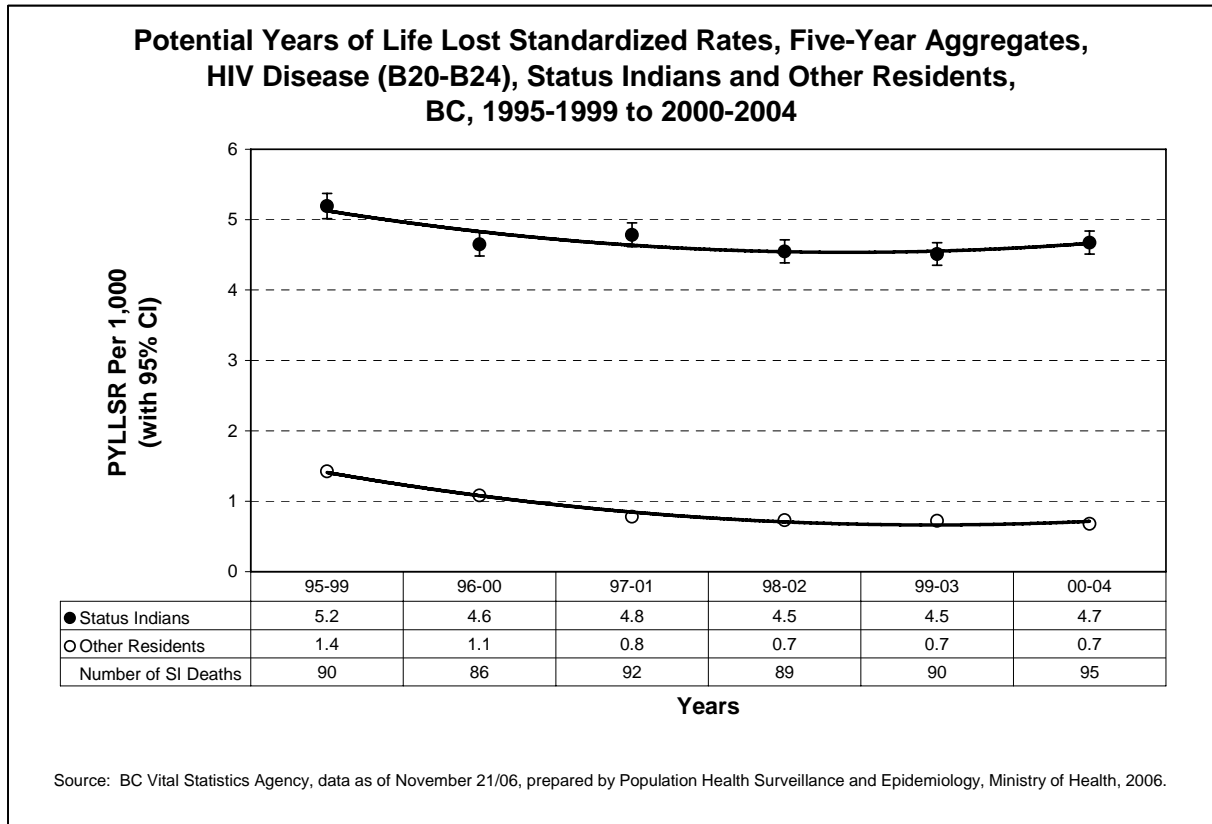
Figure 9



HIV Disease

From 1995 to 2004, the PYLLSR for HIV disease for the Status Indian population were significantly higher than for other BC residents; the rates levelled off during that time period, but a persisting gap remains between the two populations. During the 5-year period of 2000–2004, the PYLLSR for the Status Indian population was 4.7, compared to 0.7 for other BC residents (Figure 10).

Figure 10

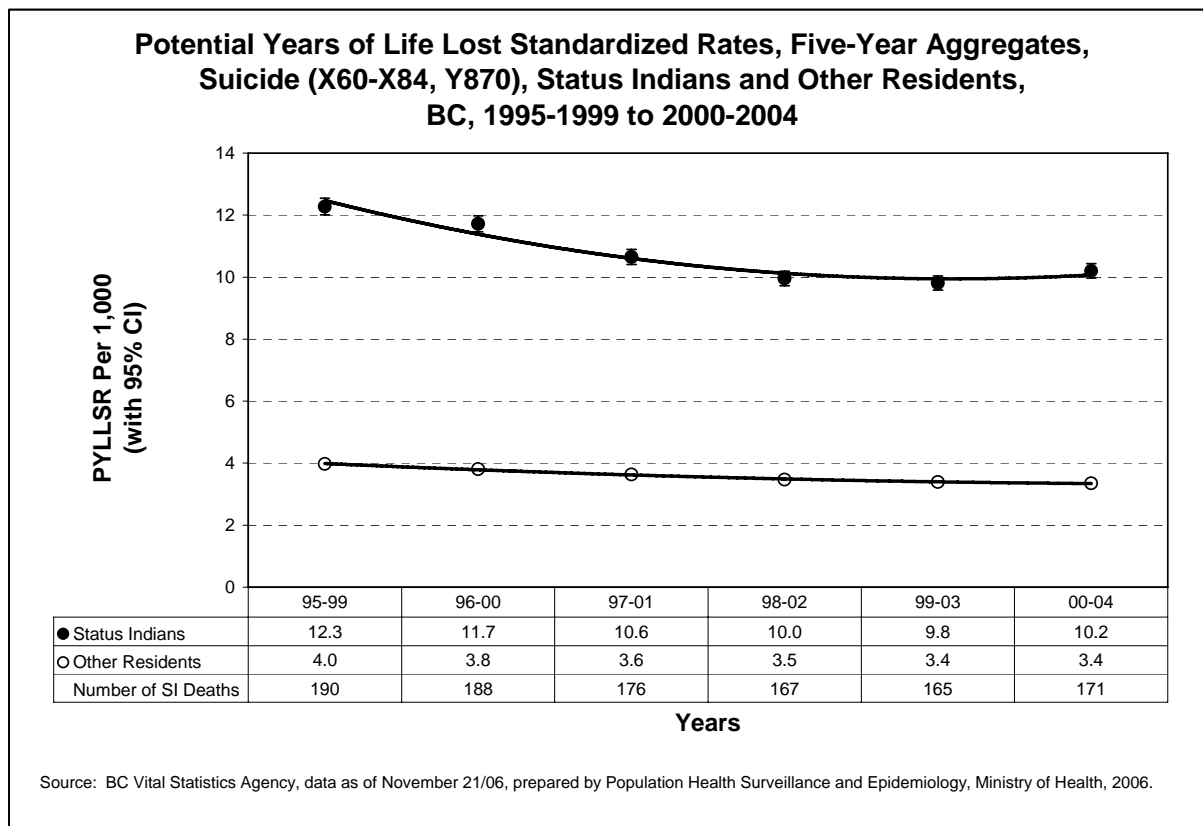


As noted in the 2001 report, the rates for the Status Indian population are not only higher than for other BC residents but also appear to be diverging. This may reflect the over-representation of Status Indians in the marginalized and hard-to-reach injection drug user-infected cohorts.

Suicide Deaths

From 1995 to 2004, suicide was the third highest overall cause of death for the Status Indian population, with a PYLLSR rate of 11.2. From 2000–2004, the PYLLSR rate for the Status Indian population was 10.2 compared to 3.4 for other BC residents, during the same period. Figure 11 shows that from 1995 to 2004, the PYLLSR for suicides have been significantly higher for the Status Indian population when compared to other BC residents.

Figure 11



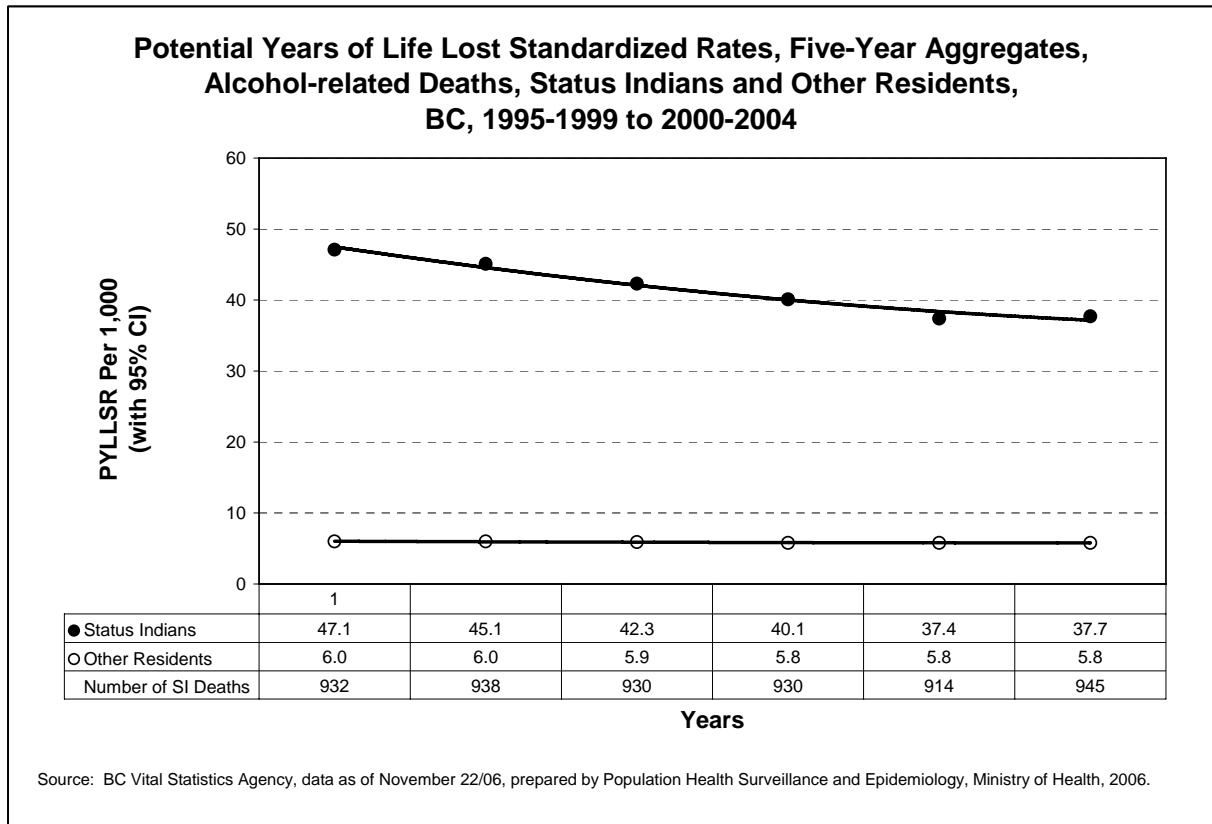
While noting that the Status Indian population rates are higher, we would like to draw attention to the work by researchers, such as Chris Lalonde, suggesting that the suicide rates are declining. The aboriginal research network has revealed that a substantial number of First Nations communities have experienced fewer or no adolescent suicides in the past few years.

Based on the *First Nations Health Plan*, released in November 2006, a target has been set to reduce the gap in youth suicide rates between First Nations and other British Columbians by 50 per cent by 2015.

Alcohol-related Deaths

From 1995 to 2004, the overall PYLLSR for alcohol-related deaths for the Status Indian population was 48.4, compared to 6.8 for other BC residents. Figure 12 illustrates that the 5-year aggregate PYLLSR for the Status Indian population are significantly higher than for other BC residents during the time period of 1995 to 2004, although the declining rates are gradually narrowing the gap. From the late 1990s, a decrease in the PYLLSR for alcohol-related deaths has been seen in the Status Indian population.

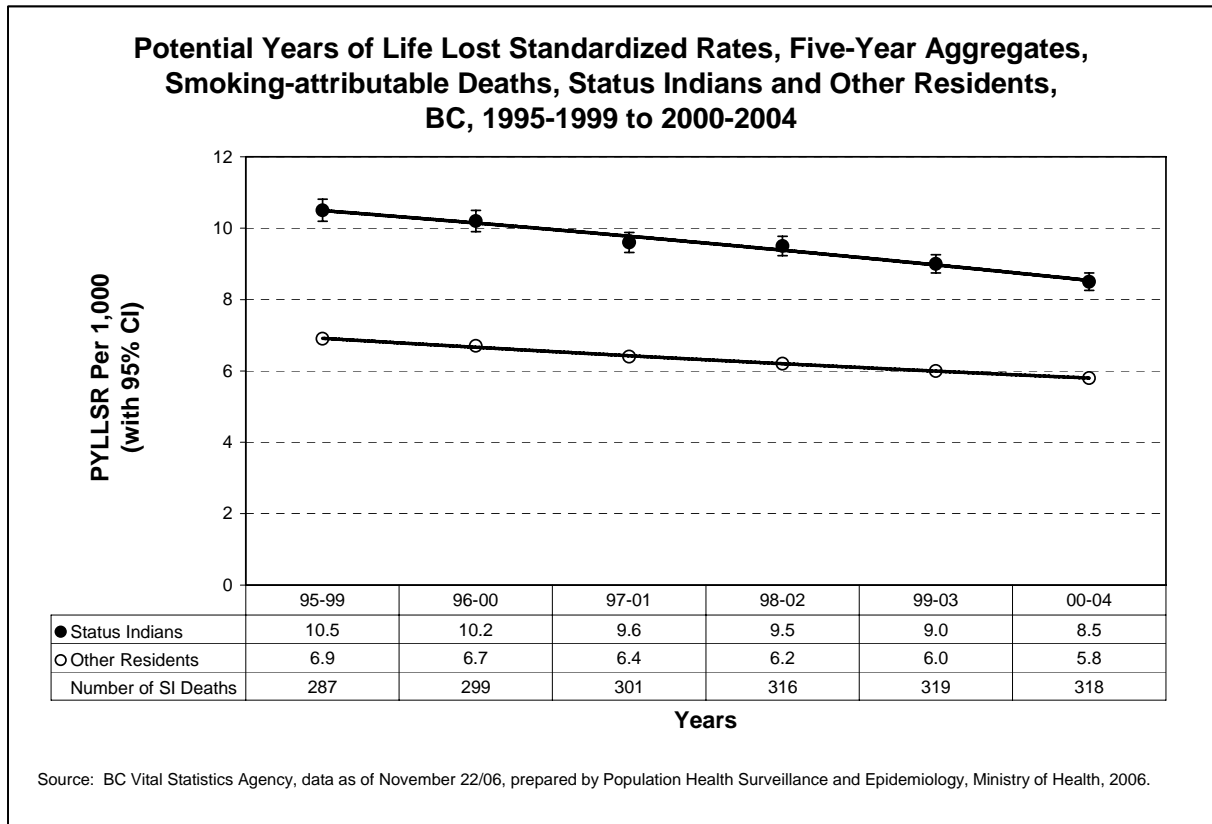
Figure 12



Smoking-attributable Deaths

From 1995 to 2004, the 5-year aggregate PYLLSR for smoking-attributable deaths for the Status Indian population have shown a decline. However, the rates are still significantly higher for this population when compared to the rates for other BC residents. From 2000–2004, the PYLLSR for the Status Indian population was 8.5, compared to 5.8 for other BC residents. It is important to note that the PYLLSR has declined significantly for the Status Indian population since 1995 (Figure 13).

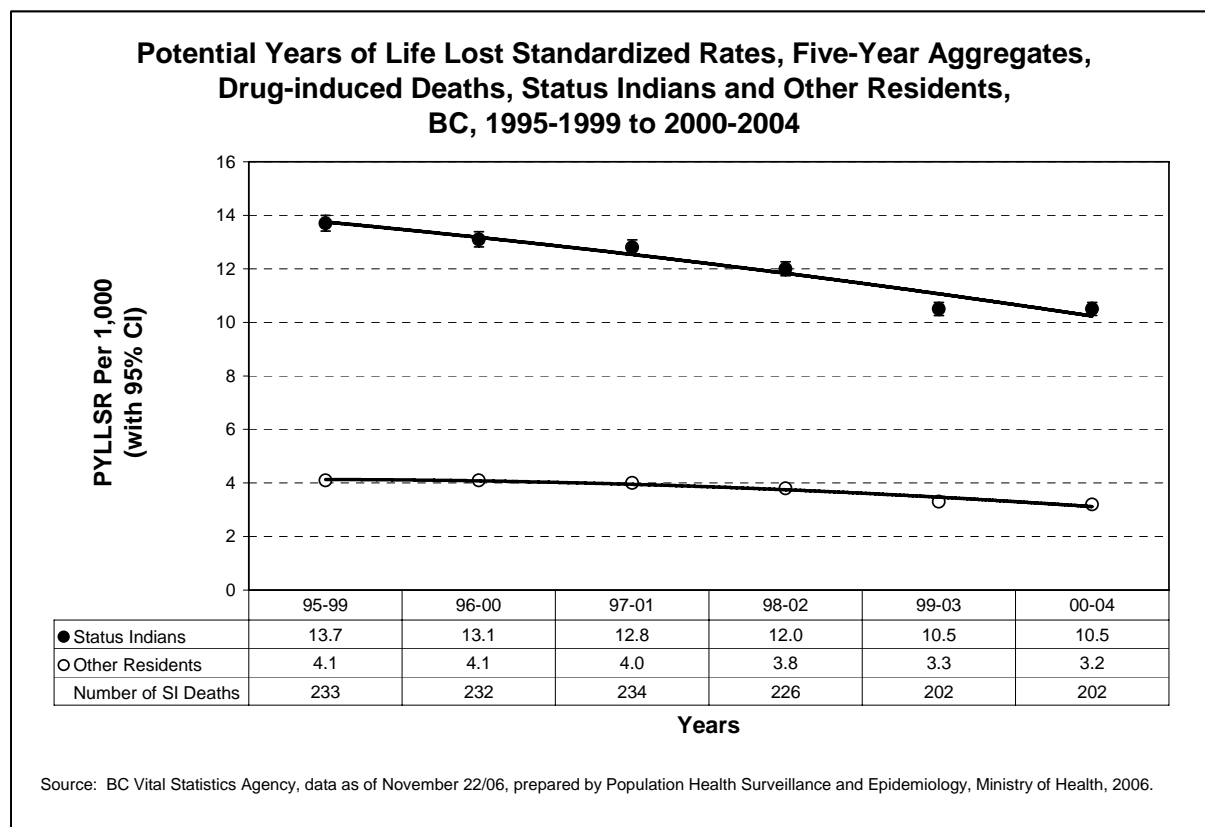
Figure 13



Drug-induced Deaths

Drug-induced deaths are due to drug use/abuse, accidental poisoning by drugs, suicide by drugs, assault by drugs, and adverse effects of drugs and medications. The majority of drug-induced deaths are due to accidental poisoning. Between 2000 and 2004, there were 202 drug-induced deaths in the Status Indian population. Although the PYLLSR has declined from 13.7 to 10.5 in the past 11 years, a large gap still remains between the Status Indian population and other BC residents (Figure 14).

Figure 14



Summary

For all measures of premature mortality examined in this report, whether during infancy or later in life, Status Indians die at earlier ages and at greater rates than other BC residents. This is true for the major disease and injury causes of death, and for the major risk factors of alcohol, drugs, or smoking. While the trend shows improvement for some of these health indicators in absolute terms for Status Indians, there is a persisting and broadly based gap across multiple indicators that cannot be explained by some specific genetic risk alone, as the causes are varied and rooted in socio-economic disparities and cultural disruption.