

# Life Expectancy

## Why Is This Important?

Life expectancy at birth is one of the most widely used public health indicators to assess population health. Increases in life expectancy are often associated with improvements in health. It measures the expected length of life, not necessarily the quality of those years. In developed countries with health care systems, life expectancy is related to socio-economic factors such as poverty. Life expectancy has been increasing in Canada since early 20<sup>th</sup> century. Health regions with lower than average life expectancies in Canada tend to have high levels of unemployment, lower education levels and be located in more remote locations. Life expectancy is also related to smoking, obesity and heavy drinking.

## What Is Being Done?

[Saskatoon Poverty Reduction Partnership](#)

The [Canadian Public Health Association](#) has listed 12 achievements that have increased life expectancy over the years.

## To Learn More:

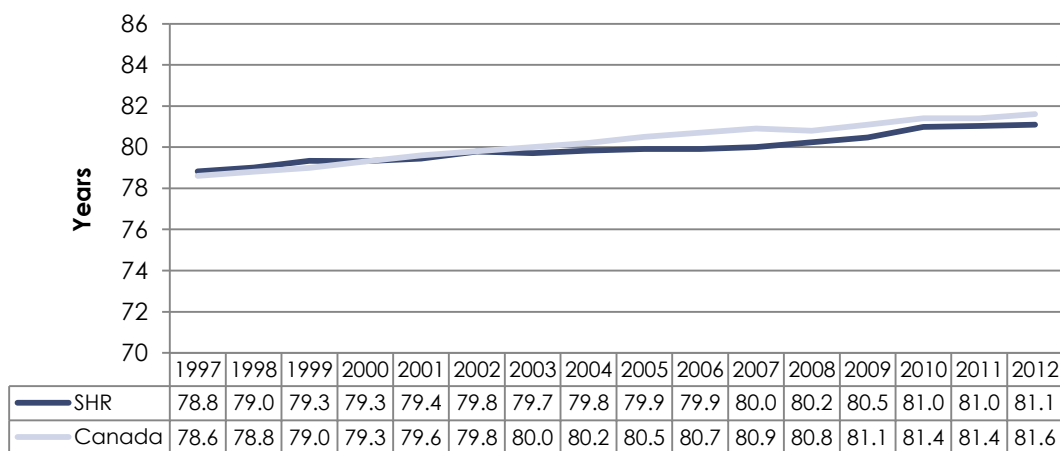
Chief Medical Health Officer's [Call to Action](#)

## Highlights

**Life expectancy is increasing in the Region, though disparities exist.**

- Life expectancy at birth for a Regional resident has been increasing over time and was 81.1 years in 2012. This is slightly below the Canadian average for this time period (*Figure 1*).
- The gap in life expectancy between those living in areas of most advantage and those in areas of least advantage has been increasing (*Figure 2*). The gap was 6 years in 1997 and increased to 8.4 years in 2012.
- Life expectancy by sex, and Saskatoon and rural areas is shown [here](#).

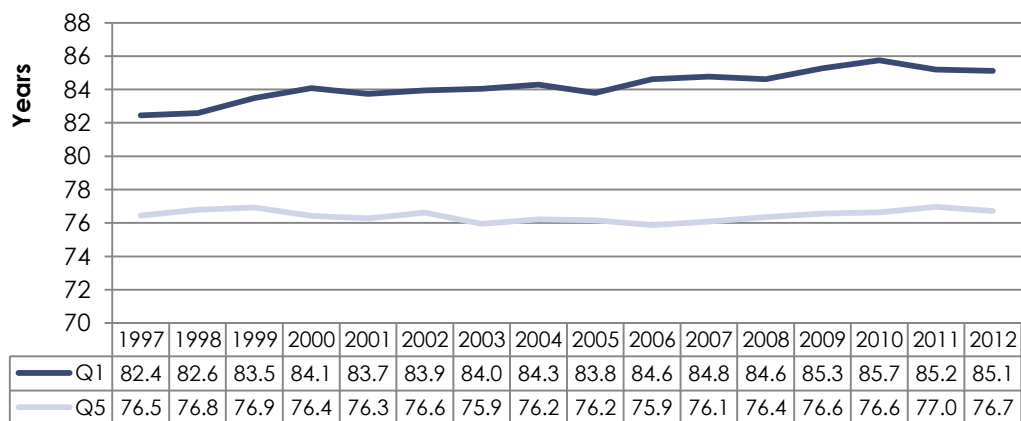
**Figure 1: Life Expectancy at Birth, Saskatoon Health Region and Canada\*, 1995 to 2012**



\* Canada values based on three year average death values. SHR values based on five year average death values.

Source: [Vital Statistics](#) and [Statistics Canada](#)

**Figure 2: Life Expectancy at Birth, Areas of Advantage, Saskatoon, 1995 to 2012**



Q1: Residents living in the highest areas of advantage.  
Q5: Residents living in the lowest areas of advantage.  
Life expectancy based on five year average death values.

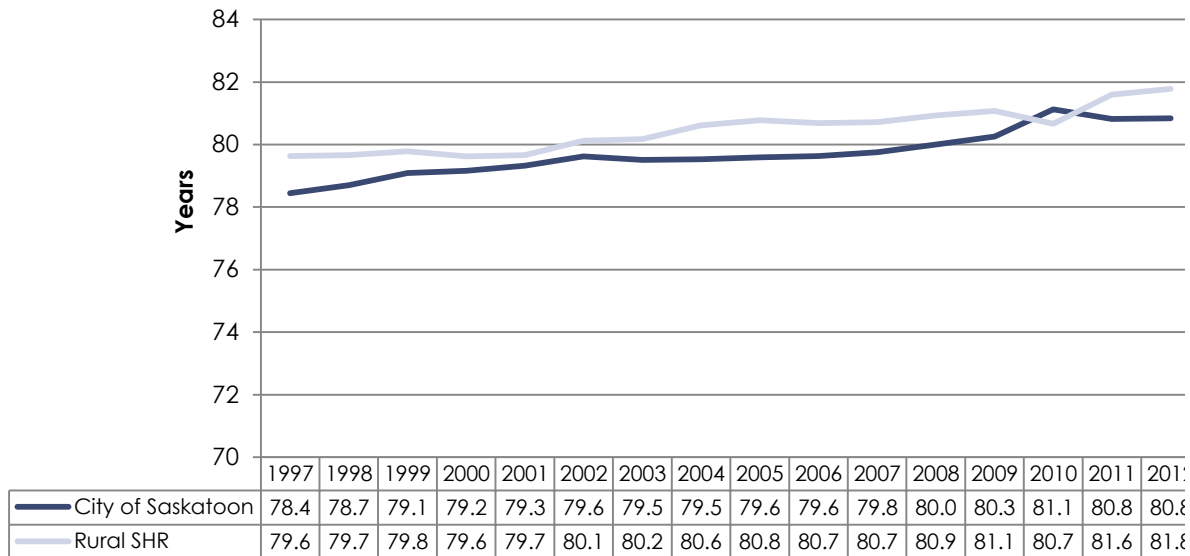
Source: [Vital Statistics](#)

# Life Expectancy

## Highlights

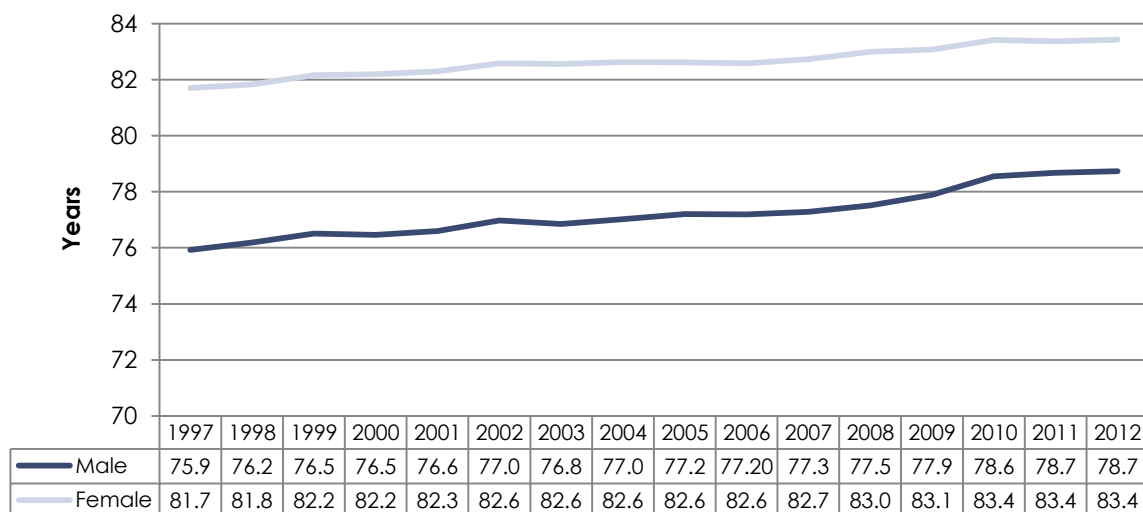
- Life expectancy has increased over time for those living in Saskatoon and rural areas of the Region (Figure 1). Rural residents have longer life expectancy than residents of Saskatoon.
- Females have consistently longer life expectancy than males by about five years (Figure 2).

**Figure 1: Life Expectancy at Birth, City and Rural Saskatoon Health Region, 1997 to 2012**



Source: Vital Statistics and Saskatchewan Ministry of Health

**Figure 2: Life Expectancy at Birth, Male and Female, Saskatoon Health Region, 1997 to 2012**



Source: Vital Statistics and Saskatchewan Ministry of Health

# Technical Appendix

## Health Status Reporting Series Three

### Life Expectancy

#### Saskatoon Health Region

#### *Life Expectancy at Birth*

##### **Definition**

Life expectancy predicts the average number of years that an individual born today is expected to live, based on the death rate of today's population. This does not reflect the quality of those years, only quantity.

##### **Calculation**

Life expectancy calculations were derived from the Association of Public Health Epidemiologists of Ontario. The abridged life table calculates life expectancy based on Chiang (1984), adapted for local area use (Manuel et al. 1998). For each data point, mortality data for five years was used as the numerator and one year worth of population data (from Covered Population, Saskatchewan Ministry of Health<sup>4</sup>) was used as the denominator. For example, to calculate life expectancy in 2012, 2010 to 2014 mortality data was used as the numerator in each age group with 2012 population used as the denominator. In some cases, the number of deaths in a five year time period was 0, in which case, an average value of 0.2 (1 death divided by 5 years) was imputed for each age group where this occurred.

Where Canada values are shown, each data point has three years of mortality used in the numerator. For example, to calculate life expectancy in 2012, 2011 to 2013 mortality data was used in the numerator.

##### **Limitations**

Death data for Saskatoon Health Region residents from Vital Statistics is up to 2014.

##### **References**

Association of Public Health Epidemiologists of Ontario. Life table template V 1.2 [online]. 2006 [cited 2007 Oct 22]. Available from: URL: <http://www.apheo.ca/index.php?pid=223>

Chiang CL. (1984). *The life table and its applications*. Malabar, Florida: Robert E. Krieger Publ. Co.

Manuel DG, Goel V, Williams JI. (1998). The derivation of life tables for local areas. *Chronic Diseases in Canada*, 19(2):52-6.

Saskatchewan Ministry of Health. Covered population report. Saskatchewan Ministry of Health 2013 [cited 2014 Mar 11]; Available from: URL:

<https://opendata.ehealthsask.ca/MicroStrategyPublic/asp/Main.aspx>

Greenberg L & Normandin C. Disparities in life expectancy at birth. Catalogue no. 82-624-X. Statistics Canada 2011 [cited 2017 Jan 6]; Available from: URL: <http://www.statcan.gc.ca/pub/82-624-x/2011001/article/11427-eng.pdf>

Statistics Canada. Life Expectancy. Catalogue no. 82-229-X. Statistics Canada 2016 [cited 2017 Jan 6]; Available from: URL: <http://www.statcan.gc.ca/pub/82-229-x/2009001/demo/lif-eng.htm>

## *Mortality Data*

### **Time Frame**

1995 – 2014.

### **Source**

Saskatchewan Ministry of Health's Vital Statistics Branch.

### **Definition**

Deaths are those that occur to SHR residents using data from 1991-2014 from Saskatchewan Vital Statistics, Alberta Vital Statistics, and CIHI hospital separations for deaths occurring in all other provinces. ICD-9 codes are used for all deaths before calendar year 2000 and after this date ICD-10 codes are used.

### **Inclusion/Exclusion**

Includes those persons with Saskatchewan recorded as their province of residence.

### **Limitations**

Conversion between ICD-9 and ICD-10 codes can be problematic for certain disease conditions because the codes are not comparable. Vital Statistics data is based on the underlying cause of death, which is limited to one diagnosis, unless there is an injury, then there is a separate code for the external cause. Readers should note that there may be more than one contributing cause of death, but that only the most responsible cause is used.