Age Standardized Rates

What: An age standardized rate is a summary of rates that have been age adjusted to a standard population for the purpose of rate comparisons between genders, disparate geographic regions or populations, or over time periods.

Why: When comparing rates between different time periods or geographic regions, there exist differences in age structures that may cause variations in the rates. To account for these variations, a standard population is applied to the rate calculations to give the same age distribution structure to allow for better comparisons across the geographic regions, populations, or time periods.

How: An age-specific rate (ASR) for each age group is first calculated by dividing the number of cases by the respective population and then multiplying the resulting number by 100,000.

Each age specific rate is then multiplied by the proportion of the standard population belonging to the particular age group.

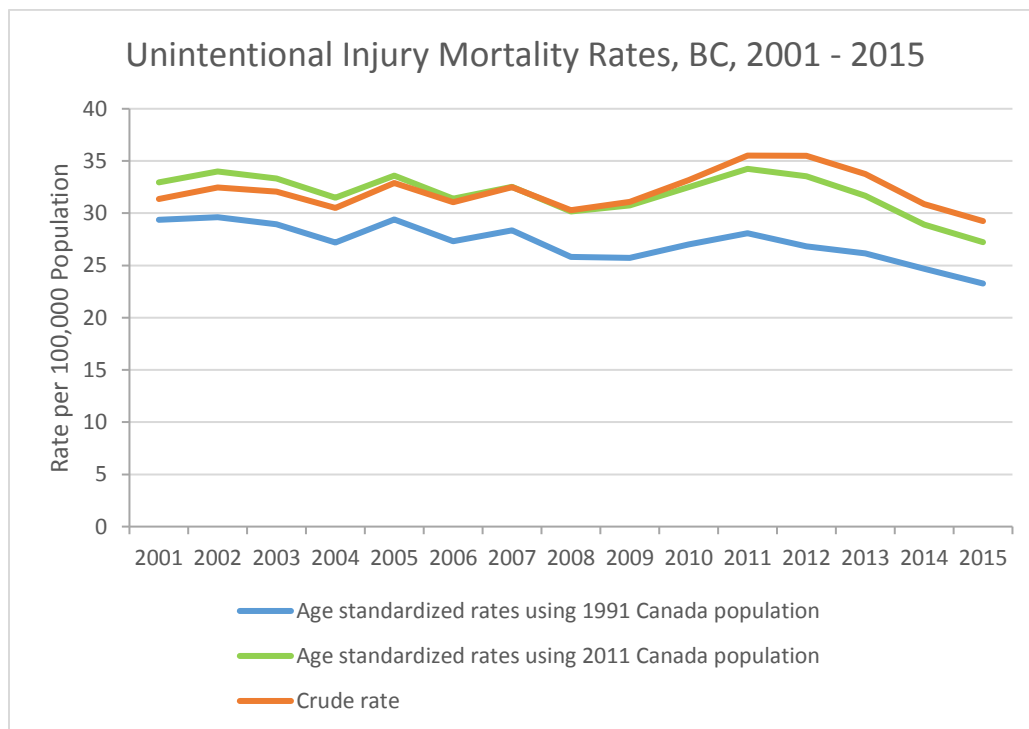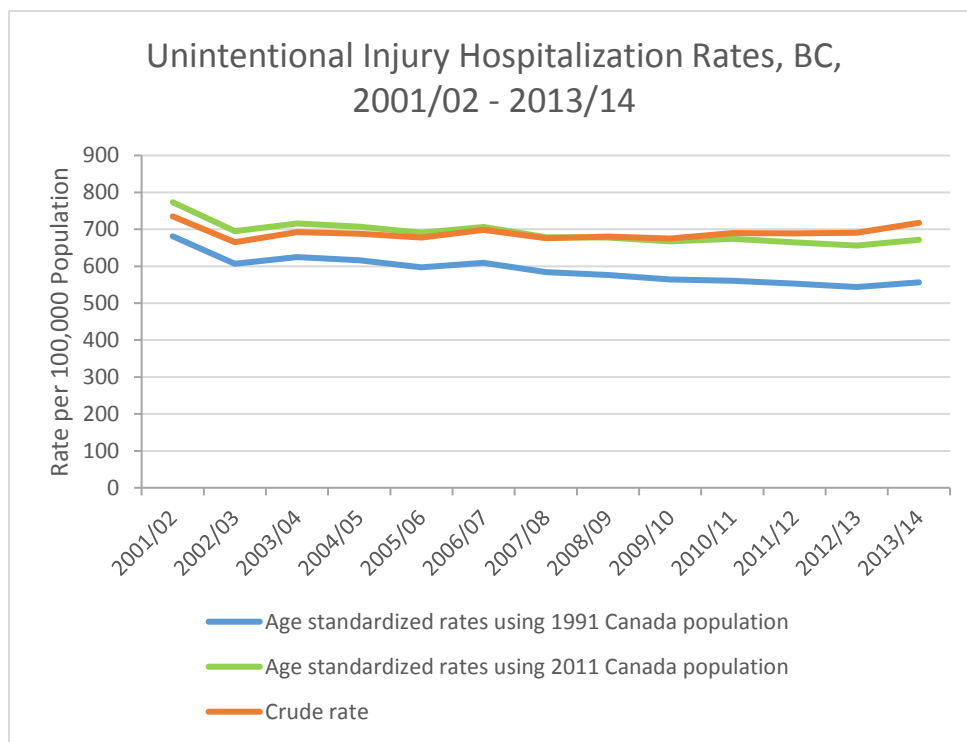The age-standardized rate (AAR) is obtained by adding the resulting numbers.

AAR = Summation of (ASR *X* standard proportion)

When: Previously, the 1991 Canadian Census Population was used as a standard population; however, a transition is being made to a more recent age structure using the 2011 Canadian Census Population.

Typically the 2011 Canadian Census Population is used as the standard population to calculate the age standardized rates. The iDOT tool provides the user an option of using either the 2011 BC Census Population or the 2011 Canadian Census Population as a standard population based on the requirements of rate calculations, particularly when looking at smaller geographic regions.

Below are examples of unintentional acute injury hospitalization/ mortality rates for BC by year using crude rates, age standardized rates with Canadian 1991 population and age standardized rates with Canadian 2011 population.

As seen in the examples below, the update of the standard population allows the age-standardized rates in recent years to closely reflect crude rates. Age-standardized rates are hypothetical and often mistakenly interpreted as reflecting actual risk. Using the updated standard will minimize any such misinterpretation of data for more recent years.

Unintentional Injury Hospitalization Rates, BC, 2001/02 - 2013/14

- Age standardized rates using 1991 Canada population
- Age standardized rates using 2011 Canada population
- Crude rate

Unintentional Injury Mortality Rates, BC, 2001 - 2015

- Age standardized rates using 1991 Canada population
- Age standardized rates using 2011 Canada population
- Crude rate

Updating the standard population had a negligible effect on trends in overall age-standardized hospitalization or mortality rates.