

# Potentially Inappropriate Medication Prescribed to Seniors

Name	Potentially Inappropriate Medication Prescribed to Seniors
Short /Other Names	Percentage Rate of Beers Drug Use Among Seniors on Public Drug Programs
Description	The rate of seniors who have a claim from the Beers list (American Geriatrics Society [AGS] 2015 Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults)
Interpretation	<p>This indicator is interpreted as the rate of seniors who take a medication identified as potentially inappropriate to prescribe to seniors because it is either ineffective or it poses unnecessarily high risk for older persons and a safer alternative is available. It should be noted that there may be cases where it is appropriate for seniors to take drugs on the Beers list.</p> <p>There may be differences in population characteristics (such as age and health status) between seniors with and without public coverage. In provinces where a lower proportion of seniors have claims accepted by the public plan, drug utilization patterns among those with public coverage are more likely to be affected by these differences and, therefore, may be less reflective of utilization patterns among all seniors in the province.</p>
HSP Framework Dimension	Health System Outputs: Appropriate and effective
Areas of Need	Living With Illness, Disability or Reduced Function
Geographic Coverage	Newfoundland and Labrador, Prince Edward Island, New Brunswick, Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, Yukon
Reporting Level /Disaggregation	Province/Territory
Indicator Results	<a href="#">Accessing Indicator Results on Your Health System: In Depth</a>
Identifying Information	
Name	Potentially Inappropriate Medication Prescribed to Seniors
Short/Other Names	Percentage Rate of Beers Drug Use Among Seniors on Public Drug Programs
Indicator Description and Calculation	
Description	The rate of seniors who have a claim from the Beers list (American Geriatrics Society [AGS] 2015 Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults)
Calculation: Description	The total number of seniors with at least one claim for a drug from the Beers list that was accepted by a public drug program divided by the total number of seniors with at least one claim for any drug accepted by a public drug program
Calculation: Geographic Assignment	Unit of Analysis: Patients Place of service
Calculation: Type of Measurement	Percentage or proportion
Calculation: Adjustment Applied	Age-sex-adjusted
Calculation: Method of Adjustment	Direct Standardization <b>Standard Population:</b> Canadian senior population (Statistics Canada, Demography Division, CANSIM table)
Denominator	<p><b>Description:</b> Total number of seniors with at least one claim accepted by a public drug program</p> <p><b>Inclusions:</b> 1. All seniors (age 65 years and older)</p> <p><b>Exclusions:</b> 2. All non-seniors (age younger than 65 years)</p> <p><b>Description:</b> Total number of senior claimants with at least one claim for a drug from the Beers list accepted by a public drug program</p> <p><b>Inclusions:</b> 1. All seniors (age 65 years and older) with at least one claim for a drug from the Beers list</p> <p><b>Exclusions:</b> 1. All non-seniors (age younger than 65 years)</p> <p>2. Seniors without a claim from the Beers list</p>
Numerator	
Background, Interpretation and Benchmarks	

**Rationale** Seniors are at greater risk for adverse drug reactions (ADRs) as well as other types of drug-related adverse events due to the number of drugs they take, the higher prevalence of certain chronic conditions and age-related changes in the body. The higher prevalence of chronic conditions does contribute to the number of drugs seniors take. However, it is important to evaluate the appropriateness of each medication prescribed.

**Interpretation** The Beers list is an internationally recognized list of drugs identified as potentially inappropriate to prescribe to seniors because they are ineffective, they pose unnecessarily high risk for older persons or a safer alternative is available. This indicator is interpreted as the rate of seniors who take a medication identified as potentially inappropriate to prescribe to seniors because it is either ineffective or it poses unnecessarily high risk for older persons and a safer alternative is available. It should be noted that there may be cases where it is appropriate for seniors to take drugs on the Beers list.

There may be differences in population characteristics (such as age and health status) between seniors with and without public coverage. In provinces where a lower proportion of seniors have claims accepted by the public plan, drug utilization patterns among those with public coverage are more likely to be affected by these differences and, therefore, may be less reflective of utilization patterns among all seniors in the province.

**HSP Framework Dimension** Health System Outputs: Appropriate and effective

**Areas of Need** Living With Illness, Disability or Reduced Function

**Targets/Benchmarks** Not applicable

**References** Not applicable

**Availability of Data Sources and Results**  
**Data Sources** NPDUIS Database

**Available Data Years** **Type of Year:** Fiscal  
**First Available Year:** 2005  
**Last Available Year:** 2017

**Geographic Coverage** Newfoundland and Labrador, Prince Edward Island, New Brunswick, Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, Yukon

**Reporting Level/Disaggregation** Province/Territory

**Result Updates**  
**Update Frequency** Whenever required for analytical product or data request

**Indicator Results** **Web Tool:** Your Health System: In Depth  
**URL:** [Accessing Indicator Results on Your Health System: In Depth](#)

**Updates** Not applicable

**Quality Statement**  
The National Prescription Drug Utilization Information System (NPDUIS) Database includes claims accepted by public drug programs, either for reimbursement or toward a deductible. Claims are included regardless of whether or not the patient actually used the drugs.

The NPDUIS Database does not include information regarding

- Caveats and Limitations**
- Prescriptions that were written but never dispensed
  - Prescriptions that were dispensed but for which the associated drug costs were not submitted to or not accepted by the public drug programs
  - Diagnoses or conditions for which prescriptions were written

The NPDUIS Database contains claims data from public drug programs in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador and Yukon. The First Nations and Inuit Health Branch (FNIHB), a federal drug program, also submits data, which comes from all Canadian provinces and territories (including those not listed above).

All data is not available for all years:

– Manitoba, Saskatchewan, Alberta, New Brunswick: From January 2000

– Nova Scotia: From April 2001

– Prince Edward Island: From April 2004

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– British Columbia: From January 2006

– Yukon: From January 2007

– Newfoundland and Labrador: From April 2008

– Ontario: From April 2010

– First Nations and Inuit Health Branch: From October 2010

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Results for this indicator are also available on

– [CIHI's eStore: Drug Use Among Seniors on Public Drug Programs in Canada](#)