

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] 2019 Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults)

Interpretation 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

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 [Accessing Indicator Results on Your Health System: In Depth \(PDF\)](#)

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] 2019 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

Unit of Analysis: Patients

Calculation: Geographic Assignment Place of service

Calculation: Type of Measurement Percentage or proportion

Calculation: Adjustment Applied Age-sex-adjusted

Calculation: Method of Adjustment Direct Standardization
Standard Population: Canadian senior population (Statistics Canada, Demography Division, CANSIM table)

Description: Total number of seniors with at least one claim accepted by a public drug program

Inclusions:

Denominator 1. All seniors (age 65 years and older)

Exclusions:

1. All non-seniors (age younger than 65 years)

Description:

Total number of senior claimants with at least one claim for a drug from the Beers list accepted by a public drug program

Inclusions:

Numerator 1. All seniors (age 65 years and older) with at least one claim for a drug from the Beers list

Exclusions:

1. All non-seniors (age younger than 65 years)
2. Seniors without a claim from the Beers list

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.

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.

Interpretation

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**

Health System Outputs: Appropriate and effective

Dimension**Areas of****Need**

Living With Illness, Disability or Reduced Function

Targets

/Benchmark Not applicable

References

Not applicable

Availability of Data Sources and Results**Data Sources**

NPDUIS Database

Type of Year:

Fiscal

Available Data Years**First Available Year:**

2005

Last Available Year:

2018

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

Frequency**Web Tool:****Indicator**

Your Health System: In Depth

or**URL:****Results**

[Accessing Indicator Results on Your Health System: In Depth \(PDF\)](#)

In the 2019 update, 2 medications (ticlopidine and pentazocine) were removed and 4 medications (glimepiride, homatropine, methscopolamine and pyrilamine) were added, compared with the 2015 criteria. These changes caused an absolute decrease of 0.3% in the proportion of seniors identified as using a drug meeting the Beers criteria.

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****ons**

- 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
- 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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Issues

Results for this indicator are also available on

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