

# Average Number of Drug Classes Used by Seniors on Public Drug Programs

Name	Average Number of Drug Classes Used by Seniors on Public Drug Programs
Short/Other Names	Not applicable
Description	<p>This indicator measures the average number of distinct drug classes (as defined by WHO ATC classification level 4) with at least one claim accepted by a public drug program for a senior (age 65 and older).</p> <p>Notes</p> <p>WHO: World Health Organization</p> <p>ATC: Anatomical Therapeutic Chemical</p>
Interpretation	<p>The indicator measures the average number of drug classes seniors take over the course of a year. Seniors with multiple chronic conditions often require treatment with multiple medications. Using a higher number of drugs is associated with a higher risk of adverse drug reactions and other adverse events, like drug interactions. As some drugs are taken consistently over long periods of time and some (such as antibiotics) are taken for shorter durations, this indicator should not be interpreted as the number of drugs seniors take at one time.</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, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, Yukon
Reporting Level/Disaggregation	Province/Territory
Indicator Results	<a href="https://secure.cihi.ca/estore/productSeries.htm?locale=en&amp;pc=PCC520">https://secure.cihi.ca/estore/productSeries.htm?locale=en&amp;pc=PCC520</a>

## Identifying Information

Name	Average Number of Drug Classes Used by Seniors on Public Drug Programs
Short/Other Names	Not applicable
Indicator Description and Calculation	This indicator measures the average number of distinct drug classes (as defined by WHO ATC classification level 4) with at least one claim accepted by a public drug program for a senior (age 65 and older).
Description	<p>Notes</p> <p>WHO: World Health Organization</p> <p>ATC: Anatomical Therapeutic Chemical</p>
Calculation: Description	The total number of distinct drug classes for each senior (age 65 and older), summed for all seniors on public drug programs, divided by the number of seniors with at least one claim accepted by a public drug program over a defined period (usually one year)
Calculation: Geographic Assignment	Place of service
Calculation: Type of Measurement	Average or mean
Calculation: Adjustment Applied	None
Calculation: Method of Adjustment	<p>Not applicable</p> <p><b>Standard Population:</b> Not applicable</p> <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> 1. All non-seniors (age younger than 65 years)</p> <p><b>Description:</b> Number of distinct drug classes (as defined by WHO ATC classification level 4) with at least one claim accepted by a public drug program for a senior, summed for all seniors on public drug programs</p>
Denominator	

Numerator	<p><b>Inclusions:</b> 1. All seniors (age 65 years and older)</p> <p><b>Exclusions:</b> 1. All non-seniors (age younger than 65 years)</p>
Background, Interpretation and Benchmarks	Using a higher number of drugs is associated with a higher risk of adverse drug reactions and other adverse events, like drug interactions.
Rationale	<p>Drug class was selected rather than drug to avoid the impact of seniors switching between drugs for the same condition (it is unlikely that two drugs from the same class would be used at the same time).</p> <p>This indicator can be used to see whether the average number of drugs a senior is using changes over time and whether there are different prescribing patterns as seniors age.</p> <p>The indicator measures the average number of drug classes seniors take over the course of a year. Seniors with multiple chronic conditions often require treatment with multiple medications. Using a higher number of drugs is associated with a higher risk of adverse drug reactions and other adverse events, like drug interactions. As some drugs are taken consistently over long periods of time and some (such as antibiotics) are taken for shorter durations, this indicator should not be interpreted as the number of drugs seniors take at one time.</p>
Interpretation	
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
	<b>Type of Year:</b> Calendar
Available Data Years	<b>First Available Year:</b> 2000
	<b>Last Available Year:</b> 2016
Geographic Coverage	Newfoundland and Labrador, Prince Edward Island, New Brunswick, Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, Yukon
Reporting Level/Disaggregation	Province/Territory
Result Updates	
Update Frequency	Whenever it is required for analytical product or data request
	<b>Web Tool:</b>
Indicator Results	CIHI's eStore: Drug Use Among Seniors on Public Drug Programs in Canada
	<b>URL:</b> <a href="https://secure.cihi.ca/estore/productSeries.htm?locale=en&amp;pc=PCC520">https://secure.cihi.ca/estore/productSeries.htm?locale=en&amp;pc=PCC520</a>
Updates	Not applicable
Quality Statement	<p>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.</p> <p>The NPDUIS Database does not include information regarding</p> <ul style="list-style-type: none"> <li>– Prescriptions that were written but never dispensed</li> </ul>
Caveats and Limitations	<ul style="list-style-type: none"> <li>– Prescriptions that were dispensed but for which the associated drug costs were not submitted to or accepted by the public drug programs</li> <li>– Diagnoses or conditions for which prescriptions were written</li> </ul> <p>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).</p> <p>All data is not available for all years:</p> <ul style="list-style-type: none"> <li>– Manitoba, Saskatchewan, Alberta, New Brunswick: From January 2000</li> <li>– Nova Scotia: From April 2001</li> <li>– Prince Edward Island: From April 2004</li> </ul>
Trending Issues	<ul style="list-style-type: none"> <li>– British Columbia: From January 2006</li> <li>– Yukon: From January 2007</li> <li>– Newfoundland and Labrador: From April 2008</li> </ul>

– Ontario: From April 2010

– First Nations and Inuit Health Branch: From October 2010

Comments Not applicable