# Health Quality Ontario

The provincial advisor on the quality of health care in Ontario

April 19th, 2016

Equity Report:

Technical Appendix

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# 1. Introduction

This report includes equity sensitive indicators from the Common Quality Agenda as well as some additional indicators with a focus on variation by income quintile. The technical appendix provides general information on the data source, analytical methods, limitations, as well as detailed information for each indicator presented in the report.

# 2. Analysis

## a) Adjustment

To enable appropriate and fair comparisons of performance, some of the indicators were age- or age- and sex-adjusted to the 1991 Canadian census population. This is the population standard specified by Statistics Canada.[i] The 2011 Canadian census population was used to calculate age-standardized rates for the colorectal cancer screening and cervical cancer screening.[ii]

Survey data were weighted to reflect the design characteristics of the survey and the population of Ontario. For further details on which indicators were adjusted, which were weighted, and the methodology used, please see the individual indicator templates in section 4, Indicator Templates.

## b) Income analysis

### Cancer screening

Income analyses provided by Cancer Care Ontario for colorectal cancer screening and cervical cancer screening are based on residents living in urban areas only. In contrast, income analyses for other indicators include residents of both rural and urban areas of Ontario.

### Income levels

In this report, the umbrella term, "income levels," describes two methods of income analyses. These two methods are described below:

- *Neighbourhood Income quintile:* Neighbourhood income is based on census data and attributes an average household income to individuals within an area. This method of analysing income is based on dissemination area-level average household income values from census files. A dissemination area is a small area composed of one or more neighbouring dissemination blocks, with a population of 400 to 700 persons. Each person within a dissemination area is assigned the average household income of the dissemination area. These dissemination areas are then ranked and divided into five equal population groups called quintiles. Quintile 1 refers to the least affluent neighbourhoods, while quintile 5 refers to the most affluent. The quintiles were constructed according to the methods developed at Statistics Canada[iii.]

- *Household income:* Household income is based on a respondent's self-reported income and is collected through surveys.

o For indicators from the Health Care Experience Survey, household incomes are categorized within the survey itself.  In this case, household income categories are defined within the report.
o For indicators based on the Canadian Community Health Survey, Statistics Canada prepares a derived income variable based on information from multiple questions from the survey.  The derived variable is a ratio of the total gross annual household income to the corresponding low-income cut-off for their household and community size and specific to their community. Adjusted ratios are then ordered from smallest to largest, and grouped into approximately equal deciles. Deciles are rolled into quintiles for reporting purposes. This results in a relative measure of income for all respondents.

For more information of which indicators used either of the above methods, please refer to the specific indicator templates.

### c) Significance testing

Statistical significance was determined by comparing the 95% confidence intervals for each value.  Confidence intervals were used to compare two results by time point, region, rural or urban area, income, language primarily spoken at home and immigration status. A value is said to be significantly different from another if the confidence intervals for the two values do not overlap. The report states an increase/decrease or higher/lower result only when results are statistically significant based on this method of testing.

### d) Limitations

There are certain limitations of the analysis that should be considered when interpreting the results. A few general limitations when considering the results presented in this report are:

- Findings in this report are associative. Causal links cannot be drawn based on the analyses used in this report.
- While many of the results presented in this report are adjusted for age and sex, other factors which may confound results are not accounted for.
- Neighbourhood-level income does not take into account people with a missing or invalid postal code, those who are unstably housed, and those living in institutions such as long-term care facilities. Neighbourhood-level income is also less accurate for rural areas as postal codes in rural regions cover larger geographical areas.[iii] In addition, as neighbourhood-level income assigns an average income to everyone in a dissemination area, it cannot be applied to individuals.
- Indicators that are dichotomized (e. g, screened or not screened) do not capture the magnitude of differences across the continuum of performance. For example, the percentage of people aged 50-74 overdue for colorectal cancer screening indicator only reveals whether or not people were overdue.  It cannot be used to discern how overdue for screening certain populations are or even if these populations have ever been screened.
- Income as well is a continuous variable.  By categorizing income into groups or quintiles, the impact of within category differences cannot be assessed

Some limitations are specific to the data source, the indicator and the methodology used to calculate it. For details on indicator-specific limitations, please see the individual indicator templates in section 4, Indicator Templates.

## 3. Data sources

The indicator results presented in this report were provided to Health Quality Ontario (HQO) by a variety of data providers, including the Ontario Ministry of Health and Long-Term Care (MOHLTC), the Institute for Clinical Evaluative Sciences (ICES), Statistics Canada and Cancer Care Ontario (CCO).

The data source(s) for each indicator are listed within the individual templates. More details on the specific data sources that HQO used to produce the indicators are noted below.

Canadian Community Health Survey (CCHS) – Statistics Canada
The CCHS is a nationally representative, cross-sectional survey of the Canadian community-dwelling population conducted by Statistics Canada. It collects information related to health status, health care utilization and health determinants of the Canadian population. It covers the population 12 years of age and older. Residents living on Indian Reserves and Crown Lands, institutional residents, full-time members of the Canadian Armed Forces, and residents of certain remote regions are excluded from the survey. The Ontario share files for the CCHS survey are used for all analyses and were prepared by the Institute for Clinical Evaluative Sciences (ICES). The CCHS is offered in English and French. To remove language as a barrier in conducting interviews, each of the Statistics Canada Regional Offices recruits interviewers with a wide range of language competencies. In addition, the survey questions are translated into Chinese, Punjabi and Inuktitut. As of 2007, data are now collected on an ongoing basis with annual releases rather than every two years, as was the case prior to 2007.

Canadian Mortality Database (CMDB) – Statistics Canada
The CMDB contains death events for the years 1950 up to the most recent year available. Death events are reported by the provincial and territorial Vital Statistics Registries in Canada. Cause of death information in the CMDB is coded using the version of the International Classification of Diseases (ICD) in effect at the time of death.

Canadian Vital Statistics, Birth and Death Databases – Statistics Canada
The Vital Statistics Birth Database is based on an administrative survey that collects demographic information annually from all provincial and territorial vital statistics registries on all live births in Canada. The central Vital Statistics Registry in each province and territory provides data from birth registrations to Statistics Canada, including the following data: date and place of birth; child's sex, birth weight and gestational age; parents' age, marital status and birthplace; mother's place of residence; type of birth; and parity.

The Vital Statistics Death Database is based on an administrative survey that collects demographic and medical information annually from all provincial and territorial vital statistics registries on all deaths in Canada. The cause of death variable in the death database is classified according to the World Health Organization "International Statistical Classification of Diseases and Related Health Problems" (ICD). The central Vital Statistics Registry in each province and territory provides data from death registrations to Statistics Canada, including the

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following data: age, sex, marital status, place of residence and birthplace of the deceased; date of death; underlying cause of death; province or territory of occurrence of death; place of accident; and autopsy information.

Since 1944, births, stillbirths, and deaths have been classified by area of reported residence, with births and stillbirths according to the residence of the mother. Responding to these surveys is mandatory.

The registration of births and deaths is a legal requirement in each Canadian province and territory and as such, reporting is virtually complete. Though under-coverage may occur as a result of late or incomplete registration, non-registration or over-coverage are minimal.[iv]

### Colonoscopy Interim Reporting Tool (CIRT) – Ministry of Health and Long-Term Care (MOHLTC)

The Colonoscopy Interim Reporting Tool (CIRT) is a secure web based tool that uploads colonoscopy information from hospitals to the program. It has been built for the colorectal cancer screening program. CIRT is an interim tool and enables the capture of required information.

### CytoBase – Cancer Care Ontario (CCO)

CytoBase is a secure web-based tool that stores cervical cytology results. It is a computerized medical record of over 80% of Pap tests performed on patients in Ontario. Diagnostic data are provided to the CytoBase system by participating laboratories, hospitals, and clinics performing cervical cytology tests.

### Discharge Abstract Database (DAD) – Canadian Institute for Health Information (CIHI)

The DAD is a database of information abstracted from hospital records that captures administrative, clinical and patient demographic information on all hospital inpatient separations, including discharges, deaths, sign-outs and transfers. CIHI receives Ontario data directly from participating facilities or from their respective regional health authorities or the Ministry of Health and Long-Term Care. The DAD includes patient-level data for all acute- and chronic-care hospitals, and rehabilitation hospitals in Ontario. Data are collected, maintained and validated by CIHI. The main data elements of the DAD are patient identifier (e.g. name, health care number), administrative information, clinical information (e.g. diagnoses and procedures) and patient demographics (e.g. age, sex, geographic location).

### Health Care Experience Survey (HCES) – Ministry of Health and Long-Term Care (MOHLTC)

The HCES is a voluntary telephone survey aimed at Ontarians aged 16 and older, conducted on a quarterly basis. The Health Care Experience Survey asks randomly selected Ontarians for their views about their health care system, how healthy they are, if they have chronic conditions, if they have a primary care provider (family doctor, nurse practitioner or other health care provider), how long it takes to see their provider, their experience using the health care system, if they have been to an emergency room or a walk-in clinic, and their household and demographic characteristics. People living in institutions, in households without telephones, and those with invalid/missing household addresses in the Registered Persons Database (RPDB) are excluded. The Ministry of Health and Long-Term Care uses the information from the survey to understand the experience of Ontarians with respect to primary care.

### Laboratory Reporting Tool (LRT) – Cancer Care Ontario (CCO)

The Laboratory Reporting Tool (LRT) includes data on the Colon Cancer Check (CCC) program, fecal occult blood testing (FOBT) kit distribution, dispensing, and results from eight

CCC-participating laboratories, including a unique physician identifier (the CPSO number) of the ordering physician. Data are available on CCC FOBT kits processed from April 2008 onwards.

## National Ambulatory Care Reporting System (NACRS) – Canadian Institute for Health Information (CIHI)

NACRS contains data for all hospital-based and community-based emergency and ambulatory care, including day surgeries, outpatient clinics and emergency departments. Data are collected, maintained and validated by CIHI. CIHI receives Ontario data directly from participating facilities or from their respective regional health authorities or the Ministry of Health and Long-Term Care. Data are collected, maintained and validated by CIHI. Data elements of the NACRS include patient identifier (e.g. name, health care number), patient demographics (e.g. age, sex, geographic location), clinical information (e.g. diagnoses and procedures), and administrative information.

## Ontario Cancer Registry (OCR) – Cancer Care Ontario (CCO)

The Ontario Cancer Registry (OCR) includes information about all newly-diagnosed cases of invasive neoplasia, except for basal cell and squamous cell skin cancers, in Ontario. The registry collects the data from multiple sources, including cancer-related hospital discharge and day surgery records from CIHI, cancer-related pathology reported from hospital and community laboratories, consultation and treatment records of patients referred to one of 14 Regional Cancer Centers and death certificates with cancer identified as the underlying cause of death from the Ontario Registrar General. Electronic records are linked at the person level and then "resolved" into incident cases of cancer using computerized medical logic.

## Ontario Diabetes Database (ODD) – Institute for Clinical Evaluative Sciences (ICES) derived cohort

The ODD employs a validated algorithm to identify people with diabetes using data on hospitalizations and physician visits. Hospital discharges, collected by the Canadian Institute for Health Information (CIHI) in the Discharge Abstracts Database (DAD) from April 1988 onwards were used to identify Ontarians with a valid health card number who had been hospitalized with a new or pre-existing diagnosis of diabetes. Physician claim records held by the Ontario Health Insurance Plan (OHIP) from July 1991 onwards were also used to identify individuals with visits to a physician for diabetes. When there was a hospital record with a diagnosis of pregnancy care or delivery close to a diabetic record (i.e., diabetic record date between 120 days before and 180 days after a gestational admission date), the diabetic record was considered to be for gestational diabetes and was excluded. Individuals were considered to have diabetes if they had at least one hospitalization or two physician service claims over a two-year period. People enter the ODD as incident cases when they are defined as having diabetes (i.e., the first of DAD admission date or OHIP service date over the two-year period as incident date). An analysis from 2002 by Hux and colleagues reported that the current algorithm had a sensitivity of 86% and a specificity of 97% for identifying diabetes in the population. The positive predictive value of the algorithm was 80%.[v] ODD doesn't distinguish between type 1 and type 2 diabetes.

## Ontario Health Insurance Plan (OHIP) – Ministry of Health and Long-Term Care (MOHLTC)

The OHIP claims database covers all reimbursement claims to the Ontario Ministry of Health and Long-Term Care made by fee-for-service physicians, community-based laboratories and

radiology facilities. The OHIP database at the Institute for Clinical Evaluative Sciences contains encrypted patient and physician identifiers, codes for services provided, date of service, the associated diagnosis and fee paid. Services which are missing from the OHIP data include: some lab services; services received in provincial psychiatric hospitals; services provided by health service organizations and other alternate providers; diagnostic procedures performed on an inpatient basis and lab services performed at hospitals (both inpatient and same day). Also excluded is remuneration to physicians through alternate funding plans (AFPs). Their concentration in certain specialties or geographic areas could distort analyses.

### Ontario Mental Health Reporting System (OMHRS) – Canadian Institute for Health Information (CIHI)

The OMHRS contains demographic, administrative and clinical information about individuals admitted to designated adult mental health beds in Ontario. The information in OMHRS includes data elements related to admissions and discharges as well as data collected using an internationally accepted standard, the Resident Assessment Instrument-Mental Health Version 2.0 (RAI-MH). The RAI-MH captures information about mental and physical health, social support and service use. Assessments are conducted at admission, every three months for patients with extended stays, and at discharge. Data are submitted to and validated by CIHI.

### Registered Persons Data Base (RPDB) – Ministry of Health and Long-Term Care (MOHLTC)

The RPDB provides basic demographic information about anyone who has ever received an Ontario health card number. The RPDB is a historical listing of the unique health numbers issued to each person eligible for Ontario health services. This listing includes corresponding demographic information such as date of birth, sex, address, date of death (where applicable) and changes in eligibility status. Data from the RPDB are enhanced with available information through other administrative data sources at the Institute for Clinical Evaluative Sciences (ICES); however, even the enhanced dataset overestimates the number of people living in Ontario for several reasons, including the source of death information and record linkage issues. Although improvements have been made in recent years, the RPDB still contains a substantial number of individuals who are deceased or no longer living in Ontario. As such, the RPDB will underestimate mortality. To ensure that rates and estimates are correct, a methodology has been developed to adjust the RPDB so that regional population counts by age and sex match estimates from Statistics Canada.

## 4. Indicator Templates

| FOOD INSECURITY | |
|---|---|
| **Description** | This indicator measures the proportion of the population aged 12 and older who report food insecurity.<br><br>A lower percentage is better. |
| **Relevance/Rationale** | Food insecurity exists when people do not have access to the variety and/or quality of the food they require due to a lack of financial resources, ranging from concerns about running out of food or inability to maintain a balanced diet to going hungry and skipping meals.[1]<br><br>Those who report food insecurity are more likely to report poor or fair health, poor functional status or inability to perform key activities due to poor health, long-term physical and/or mental disabilities that limit activity, multiple chronic conditions, major depression and a perceived lack of social support.[2] Adults with chronic conditions also experience compromised management of their chronic conditions when experiencing food insecurity.[1] |
| **HQO reporting tool** | None |
| **Reporting tools external to HQO** | Statistics Canada CANSIM tables and Health Fact Sheets |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>The number of respondents who were moderately or severely food insecure.<br><br>**Inclusions:**<br>    • if FSCDHFS2 = 1, 2<br><br>Based on CCHS variable FSCDHFS2 which indicates level of food security:<br>0 = Food secure<br>1 = Moderately food insecure<br>2 = Severely food insecure<br>9 = At least one required question was not answered (don't know, refusal, not stated) or the person most knowledgeable about the household was not available to answer questions for respondents aged 16 or younger |
| | **Denominator**<br>All CCHS respondents aged 12* or above<br><br>**Exclusions:**<br>    • Age < 12 at the time of interview<br>    • Invalid indication/Missing Values |
| | **Methods**<br>Numerator/Denominator*100 |
| | **Adjustment** *(risk, including age/sex standardization)*<br>Direct adjustment (age & sex) using 1991 Canadian Census population aged 12+. Age groups are 12-17, 18-29, 30-39, 40-49, 50-59, 60-69, 70+.<br><br>Sampling weights are used for calculating all estimates. |
| **Data source / data elements** | Canadian community health survey (CCHS) conducted by Statistics Canada; data provided by the Institute for Clinical Evaluative Sciences |

| Levels of comparability/stratification descriptions | Data are compared by household income quintile (see page 4 for a description) |
|---|---|
| Limitations / Caveats | As this indicator relies on self-reported data, the true rate might in fact be higher or lower.<br><br>In addition, this survey excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions, which will affect the representativeness of the sample and estimation of the true rates for Ontario. Altogether, these exclusions represent <3% of the target population.<br><br>Cell phones were not allowed for interviewing in the CCHS up to and including 2014. If an interviewer discovers that the phone the respondent is on is cellular, they ask if there is another number to call back on. This is also the case if they discover that the respondent answered on a cell that was forwarded to by a landline. The interviewer would not be able to enter the case once they determined the phone was a cell. As of 2015 cell phones are allowed. While this will help increase number of respondents and avoid biasing against the increasing trend for households to only have cell phones, it may result in differences in comparability of survey samples over time. |
| Timing and frequency of Release | CCHS is updated annually |

1. Tarasuk, V., Mitchell, A. & Dachner, N. (2014). Household Food Insecurity in Canada, 2012. Toronto: Research to identify policy options to reduce food insecurity (PROOF). Retrieved February 25, 2016 from: http://nutritionalsciences.lamp.utoronto.ca/
2. Statistics Canada. (2015). Food insecurity in Canada. Retrieved February 25, 2016 from: http://www.statcan.gc.ca/pub/82-624-x/2015001/article/14138-eng.htm

## CIGARETTE SMOKING (DAILY OR OCCASIONAL)

| Description | This indicator measures the proportion of the population aged 12 and older who report smoking cigarettes (daily or occasionally).<br><br>A lower percentage is better. |
|---|---|
| Relevance/Rationale | Tobacco is a leading preventable cause of premature death in Canada and is the main risk factor for four of the leading causes of death in Canada- cancer, heart disease, stroke, and lung disease.[1] Tobacco is responsible for over 85% of deaths from lung cancer; over 70% of deaths from cancers of the mouth, oropharynx and esophagus; and significant proportions of deaths from some others cancers.[2] Approximately 37,000 Canadians die each year as a result of tobacco use.[1]<br><br>Smoking cigarettes is the most common method of tobacco use and in 2010, it was estimated that approximately 16.7% of the Canadian population, or 4.7 million persons, smoked.[3] Approximately half of those smokers are expected to become ill or die from continued tobacco use.[3]<br><br>In addition, tobacco-related illnesses cost the Ontario economy $1.6 billion in health care costs and $4.4 billion in productivity losses, while contributing an estimated 500,000 hospital patient days annually.[4] |
| HQO reporting tool | Measuring Up, 2015 |
| Reporting tools external to HQO | Statistics Canada CANSIM tables and Health Fact Sheets<br><br>Other indicators in the same family: |

| | |
|---|---|
| | • Cancer Care Ontario Cancer System Quality Index (CSQI):Daily/occasional smoking for those aged 20+<br>• Ontario Tobacco Research Unit (OTRU): Use of tobacco (cigarettes, cigars, pipes) in past 30 days for those aged 12+; and those aged 12+ who have smoked cigarettes in the past 30 days and had smoked at least 100 cigarettes in their lifetime |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>The number of respondents who reported current daily or occasional smoking of cigarettes.<br><br>**Inclusions:**<br>• if SMKDSTY = 1, 2, 3<br><br>Based on CCHS variable SMKDSTY which indicates the type of smoker the respondent is, based on their smoking habits:<br>1 = Daily<br>2 = Occasional smoker (former daily smoker)<br>3 = Occasional smoker (never a daily smoker or has smoked less than 100 cigarettes in lifetime)<br>4 = Former daily smoker (non-smoker now)<br>5 = Former occasional smoker (at least 1 whole cigarette, non-smoker now)<br>6 = Never smoked (a whole cigarette)<br>99 = At least one required question was not answered (don't know, refusal, not stated) |
| | **Denominator**<br>All CCHS respondents aged 12 or above<br><br>**Exclusions:**<br>• Age < 12 at the time of interview<br>• Invalid indication/Missing Values |
| | **Methods**<br>Numerator/Denominator*100 |
| | **Adjustment** *(risk, including age/sex standardization)*<br>Direct adjustment (age) using 1991 Canadian Census population aged 12+. Age groups are 12-17, 18-29, 30-39, 40-49, 50-59, 60-69, 70+.<br><br>Sampling weights are used for calculating all estimates. |
| **Data source / data elements** | Canadian community health survey (CCHS) conducted by Statistics Canada provided by the Institute for Clinical Evaluative Sciences |
| **Levels of comparability/stratification descriptions** | Data are compared by household income quintile (see page 4 for a description) |
| **Limitations / Caveats** | As this indicator relies on self-reported data, the true rate might in fact be higher or lower.<br><br>In addition, this survey excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions, which will affect the representativeness of the sample and underestimation of the true rates. Altogether, these exclusions represent <3% of the target population.<br><br>Cell phones were not allowed for interviewing in the CCHS up to and including 2014. If an interviewer discovers that the phone the respondent is on is cellular, they ask if there is another number to call back on. This is also |

| | the case if they discover that the respondent answered on a cell that was forwarded to by a landline. The interviewer would not be able to enter the case once they determined the phone was a cell. As of 2015 cell phones are allowed. While, this will help increase number of respondents and avoid biasing against the increasing trend for households to only have cell phones, it may result in differences in comparability of survey samples over time. |
|---|---|
| **Timing and frequency of Release** | CCHS is updated annually |

1. Canadian Cancer Society. (2015). Tobacco. Retrieved from: http://www.cancer.ca/en/cancer-information/cancer-101/what-is-a-risk-factor/tobacco/?region=on
2. Danaei G, Vander Hoorn S, Lopez AD, Murray CJL, Ezzati M. Causes of cancer in the world: comparative risk assessment of nine behavioural and environmental risk factors. Lancet 2005; 366 1784-93.
3. Reid J, Hammond D, and Burkhalter R. Tobacco Use in Canada: Patterns and Trends, 2012 Edition. Waterloo, ON: Propel Centre for Population Health Impact, University of Waterloo; 2012.
4. Ministry of Health Promotion. (2006). Fact Sheet- Costs of Tobacco Use and Tax Revenues. Retrieved from: http://www.mhp.gov.on.ca/en/smoke-free/factsheets/Tobacco_Revenue-120208.pdf

| PHYSICAL INACTIVITY | |
|---|---|
| **Description** | This indicator measures the proportion of the population who report being physically inactive.<br>A lower percentage is better. |
| **Relevance/Rationale** | A significant number of Ontarians report being physically inactive, expending less than 1.5 kcal/kg/day.[1] This is problematic as a lack of physical activity is an important cause of preventable death worldwide.[2] In addition, regular physical activity reduces the risk of several chronic conditions, including hypertension, coronary heart disease, stroke, diabetes, breast and colon cancer, and depression.[3] Furthermore, the financial burden of physical inactivity is also great; one study has estimated that inactivity costs Ontario roughly $3.4 billion a year in direct and indirect costs.[4] |
| **HQO reporting tool** | Measuring up 2015 |
| **Reporting tools external to HQO** | Statistics Canada CANSIM tables and Health Fact Sheets<br><br>Other indicators in the same family:<br>• Cancer Care Ontario Cancer System Quality Index (CSQI): Moderately active or active adults (aged 18+) |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>Total number of respondents categorized as "inactive"<br><br>**Inclusions:**<br>• if PACDPAI=3<br><br>Physical inactivity is measured via the PACDPAI variable in the CCHS, which categorizes respondents as "active", "moderately active", or "inactive" in their leisure time based on total daily Energy Expenditure values calculated according to responses about the nature, frequency, and duration of participation in leisure-time physical activity:<br>1 = Active<br>2 = Moderately Active<br>3 = Inactive<br>9 = "don't know", "refusal", or "not stated" |
| | **Denominator**<br>Total number of respondents aged 12 or older<br><br>**Exclusions**:<br>• Age < 12 at the time of interview |

| | |
|---|---|
| | • Invalid indication/Missing values |
| | **Methods**<br>Numerator/Denominator*100 |
| | **Adjustment** *(risk, including age/sex standardization)*<br>Direct adjustment (age) using 1991 Canadian Census population aged 12+. Age groups are 12-17, 18-29, 30-39, 40-49, 50-59, 60-69, 70+.<br><br>Sampling weights are used for calculating all estimates. |
| **Data source / data elements** | Canadian community health survey (CCHS) conducted by Statistics Canada provided by the Institute for Clinical Evaluative Sciences |
| **Levels of comparability/stratification descriptions** | Data are compared by household income quintile (see page 4 for a description) |
| **Limitations / Caveats** | CCHS does not collect information regarding the intensity level of activities. As such, the energy expenditure calculated is based on low-intensity value of metabolic equivalent value, an approach adopted from the Canadian Fitness and Lifestyle Research Institute because individuals tend to overestimate the intensity, frequency and duration of their activities.[5]<br><br>As this indicator relies on self-reported data, the true rate might in fact be higher or lower.<br><br>This indicator dichotomizes respondents into inactive or not, however activity level is a continuous variable and using pre-defined cut-offs may mask larger differences in the indicator by selected stratifications.<br>In addition, this survey excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions, which will affect the representativeness of the sample and underestimation of the true rates. Altogether, these exclusions represent <3% of the target population.<br><br>Cell phones were not allowed for interviewing in the CCHS up to and including 2014. If an interviewer discovers that the phone the respondent is on is cellular, they ask if there is another number to call back on. This is also the case if they discover that the respondent answered on a cell that was forwarded to by a landline. The interviewer would not be able to enter the case once they determined the phone was a cell. As of 2015 cell phones are allowed. While, this will help increase number of respondents and avoid biasing against the increasing trend for households to only have cell phones, it may result in differences in comparability of survey samples over time. |
| **Timing and frequency of Release** | CCHS is updated annually |

1. "A person's average daily energy expenditure is calculated by multiplying the number of times each activity is performed by the average duration of the activity by the energy cost of the activity (kilocalories per kilogram of body weight per hour). According to Statistics Canada (2005), a person who has an average daily energy expenditure of at least 3 kilocalories per kilogram of body weight per day (KKD) is classified as 'active' (e.g. 60 minutes of walking per day), an average daily expenditure of 1.5-2.9 KKD is considered' moderately active' (e.g. 30 minutes of walking per day), and 'inactive' corresponds to an average daily expenditure of less than 1.5 KKD (e.g. < 15 minutes of walking per day). Ideally, adults should strive to expend 6-8 KKD in order to maximize health benefits (Health Canada, 2003; World Health Organization 2002). It is important to note that only those people who have an average daily expenditure equal to or greater than 3 KKD meet minimum PAG requirements." Retrieved from: http://www.statcan.gc.ca/pub/11-522-x/2008000/article/10973-eng.pdf
2. Lopez AD, Mathers CD, Ezzati M, Jamison DT, Murray CJ (May 2006). "Global and regional burden of disease and risk factors, 2001: systematic analysis of population health data". Lancet 367 (9524): 1747–57.doi:10.1016/S0140-6736(06)68770-9.
3. World Health Organization. (2015). Physical Activity. Retrieved June 26, 2015 from: http://www.who.int/mediacentre/factsheets/fs385/en/
4. Katzmarzyk PT. (2011). The economic costs associated with physical inactivity and obesity in Ontario. The Health and Fitness Journal of Canada, 4(4).
5. Statistics Canada. (2013). Canadian Community Health Survey (CCHS). Derived Variable Specifications.

| INADEQUATE FRUIT AND VEGETABLE INTAKE | |
|---|---|
| **Description** | This indicator measures the proportion of the population who report inadequate fruit and vegetable intake.<br><br>A lower rate is better. |
| **Relevance/Rationale** | A significant proportion of Ontarians report fruit and vegetable intake considered to be inadequate (less than 5 servings per day). Fruit and vegetables are an important part of a healthy diet as they are an excellent source of vitamins and minerals, are high in fibre and low in fat and calories. They are also a source of antioxidants, phytochemicals and other compounds that may protect against cancer and other diseases.[1] In particular, non-starchy vegetables and fruit may protect against cancers of the oral cavity and pharynx, larynx, esophagus and stomach, while fruit may protect against lung cancer.[2]<br><br>In addition, inadequate fruit and vegetable intake has been associated with other health risk behaviours, including physical inactivity, obesity, and smoking.[3] |
| **HQO reporting tool** | Measuring Up, 2015 |
| **Reporting tools external to HQO** | Statistics Canada CANSIM tables and Health Fact Sheets (these tools report the inverse-adequate intake of fruits and vegetables)<br><br>Other indicators in the same family:<br>• Cancer Care Ontario Cancer System Quality Index (CSQI) |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>Total number of respondents categorized as "eats fruits and vegetables less than 5 times per day".<br><br>**Inclusions**:<br>• If FVCGTOT=1<br><br>Inadequate fruit and vegetable consumption is measured via the FVCGTOT variable in the CCHS, which is based on the total number of times per day he/she eats fruits and vegetables; it categorizes respondents as:<br>1 = "eats fruits and vegetables less than 5 times per day"<br>2 = "eats fruits and vegetables between 5 and 10 times per day"<br>3 = "eats fruits and vegetables more than 10 times per day"<br>9 = "don't know", "refusal", or "not stated".<br><br>Note: The derived variable is based on questions asked in CCHS that included daily consumption (number of times) of:<br>• Fruit juice<br>• Other fruit<br>• Green salad<br>• Potatoes<br>• Carrots<br>• Other vegetables |
| | **Denominator**<br>Total number of respondents aged 12 or older<br><br>**Exclusions**:<br>• Age < 12 at the time of interview |

| | |
|---|---|
| | • Invalid indication/Missing values |
| | **Methods**<br>Numerator/Denominator*100 |
| | **Adjustment** *(risk, including age/sex standardization)*<br>Direct adjustment (age) using 1991 Canadian Census population aged 12+. Age groups are 12-17, 18-29, 30-39, 40-49, 50-59, 60-69, 70+.<br><br>Sampling weights are used for calculating all estimates. |
| **Data source / data elements** | Canadian community health survey (CCHS) conducted by Statistics Canada provided by the Institute for Clinical Evaluative Sciences |
| **Levels of comparability/stratification descriptions** | Data are compared by household income quintile, (see page 4 for a description) |
| **Limitations / Caveats** | Questions related to fruit and vegetable intake are limited to the number of times (frequency) and not the amount consumed, thus not translating to number of servings per day.<br><br>As this indicator relies on self-reported data, the true rate might in fact be higher or lower.<br>The definition used for an inadequate intake of fruit and vegetables is based on the derived variable prepared by Statistics Canada and may differ from guidance provided by other organizations.<br>This indicator dichotomizes respondents into adequate intake or not, however fruit and vegetable consumption is a continuous variable and using pre-defined cut-offs may mask larger differences in the indicator by selected stratifications.<br><br>In addition, this survey excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions, which will affect the representativeness of the sample and underestimation of the true rates. Altogether, these exclusions represent <3% of the target population.<br><br>Cell phones were not allowed for interviewing in the CCHS up to and including 2014. If an interviewer discovers that the phone the respondent is on is cellular, they ask if there is another number to call back on. This is also the case if they discover that the respondent answered on a cell that was forwarded to by a landline. The interviewer would not be able to enter the case once they determined the phone was a cell. As of 2015 cell phones are allowed. While this will help increase number of respondents and avoid biasing against the increasing trend for households to only have cell phones, it may result in differences in comparability of survey samples over time. |
| **Timing and frequency of Release** | CCHS is updated annually |

1. Canadian Cancer Society. (2015). Vegetables and fruit. Retrieved June 24, 2015 from: http://www.cancer.ca/en/cancer-information/cancer-101/what-is-a-risk-factor/diet/vegetables-and-fruit/?region=on
2. Cancer Care Ontario. Cancer risk factors in Ontario: Healthy weights, healthy eating and active living. Queen's Printer for Ontario, 2015.
3. Statistics Canada. (2010). Fruit and vegetable consumption. Retrieved June 24, 2015 from: http://www.statcan.gc.ca/pub/82-229-x/2009001/deter/fvc-eng.htm#n6

| **OBESITY** | |
|---|---|
| **Description** | This indicator reports the percentage of the overall population who report being obese. Obesity is measured using body mass index (BMI), based on self-reported height and weight. For adults 18 years and older, BMI > 30 is considered obese. |

| | A lower percentage is better |
|---|---|
| **Relevance/Rationale** | Obesity has reached epidemic proportions in Canada and Ontario. Between 1981 and 2007/09, obesity roughly doubled in most age groups in the adult and youth categories. Given these trends, obesity poses a significant burden to the healthcare system. Obesity increases the risk of a variety of chronic conditions ranging from type 2 diabetes to some forms of cancer and evidence suggests that those who are severely obese have a greater risk of premature mortality.[1] The financial burdens of obesity are also great. According to a study, in 2009, the cost of obesity to Ontario was 4.5 billion dollars resulting from both direct and indirect costs.[2] |
| **HQO reporting tool** | Measuring Up, 2015 |
| **Reporting tools external to HQO** | Statistics Canada CANSIM tables and Health Fact Sheets<br>Cancer Care Ontario Cancer Screening Quality Index (CSQI) |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>Number of respondents who were categorized as obese (with a BMI > 30) based on CCHS variable HWTDISW. BMI is defined as weight in kilograms divided by height in meters squared.<br><br>**Inclusions**:<br>• Obese if:<br>　○ Yes if HWTDISW = 4, 5, or 6<br>　○ No if HWTDISW = 1, 2, or 3<br>　○ Missing otherwise<br><br>CCHS, 2013 variable HWTDISW Codes for HWTDISW (BMI class):<br>1 = Underweight: BMI < 18.50<br>2 = Normal weight: 18.50 <= BMI < 25<br>3 = Overweight: 25<= BMI < 30<br>4 = Obese – class 1: 30 <= BMI < 35<br>5 = Obese – class 2: 35 <= BMI < 40<br>6 = Obese – class 3: 40 <= BMI<br>96 = Not applicable<br>99 = Not stated<br><br>The BMI categories are adopted from a body weight classification system recommended by Health Canada and the World Health Organization (WHO) which has been widely used internationally. This variable excludes female respondents aged 18 to 49 who were pregnant or did not answer the pregnancy question (i.e.MAM_037 = don't know, refusal, not stated). |
| | **Denominator**<br>Total number of respondents aged 18 or older<br><br>**Exclusions**:<br>• Age < 18 at the time of interview<br>• Invalid indication/Missing values |
| | **Methods**<br>Numerator/Denominator*100 |
| | **Adjustment** *(risk, including age/sex standardization)*<br>Direct adjustment (age) using 1991 Canadian Census population aged 12+. Age groups are 12-17, 18-29, 30-39, 40-49, 50-59, 60-69, 70+.<br><br>Sampling weights are used for calculating all estimates. |

| Data source / data elements | Canadian community health survey (CCHS) conducted by Statistics Canada provided by the Institute for Clinical Evaluative Sciences |
|---|---|
| Levels of comparability/stratification descriptions | Data are compared by household income quintile (see page 4 for a description) |
| Limitations / Caveats | This indicator has limitations with both its use of the BMI to assess obesity, as well with how the data are collected. As this indicator relies on self-reported data (height and weight) the true rate might in fact be higher or lower.<br><br>Differential musculature or bone bass among individuals, as well as across ethnocultural groups and sexes does not factor into how the BMI is calculated.[3] Therefore, this indicator does not capture the true rate of obesity, rather a close approximation of it.<br><br>The results shown here are based on height and weight as reported by survey respondents. Comparisons of self-reported height and weight with actual measurements have shown that women are inclined to underestimate their weight, while men tend to overestimate their height. Measured height and weight raises the actual proportion of obese adults by an estimated 6 to 9 percentage points above the 18%, which is based on self-reports.[4]<br><br>While this indicator reports no statistically significant variation by household income quintile, it is limited to adults aged 18 years and older. Childhood obesity is not captured in this report. Furthermore, this indicator does not capture variation that could exist if the results were disaggregated by other variables and household income quintile, for example, sex by household income quintile.<br><br>This survey excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions, which will affect the representativeness of the sample and underestimation of the true rates. Altogether, these exclusions represent <3% of the target population.<br><br>Cell phones were not allowed for interviewing in the CCHS up to and including 2014. If an interviewer discovers that the phone the respondent is on is cellular, they ask if there is another number to call back on. This is also the case if they discover that the respondent answered on a cell that was forwarded to by a landline. The interviewer would not be able to enter the case once they determined the phone was a cell. As of 2015 cell phones are allowed. This will help increase number of respondents and avoid biasing against the increasing trend for households to only have cell phones, it may result in differences in comparability of survey samples over time. |
| Timing and frequency of Release | CCHS is updated annually |

1. Public Health Agency of Canada. Obesity in Canada: A joint report from the Public Health Agency of Canada and the Canadian Institute for Health Information. Ottawa: Public Health Agency of Canada. 2011.
2. Katzmarzyk PT. (2011). The economic costs associated with physical inactivity and obesity in Ontario. Health and Fitness Journal of Canada. 2011;4(4).
3. Health Canada. Canadian Guidelines for Body Weight Classification in Adults. Ottawa: Health Canada. 2003.
4. Shields M, Connor Gorber S, Tremblay MS. Estimates of obesity based on self-report versus direct measures. Health Reports. 2008;19(2):61-76

## CHRONIC CONDITIONS

| Description | This indicator reports the percentage of the overall population aged 12 and over who report the presence of one or two or more chronic conditions. |
|---|---|

| | |
|---|---|
| | A lower percentage is better. |
| **Relevance/Rationale** | Understanding the prevalence of chronic conditions within the population provides context for the public, policy makers and providers. This is especially relevant for a report on health equity as the rate of chronic conditions and the number of chronic conditions may vary depending on the socioeconomic status, health behaviours and health care access of the population.<br><br>The included chronic conditions were selected by a panel of physicians who have expertise in caring for lower income or marginalized populations. |
| **HQO reporting tool** | N/A |
| **Reporting tools external to HQO** | A similar indicator which measures the prevalence of chronic conditions has been reported by Statistics Canada, Canadian Institute of Health Information and the Public Health Agency of Canada. |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>Respondents with:<br>• 1 of any of the listed chronic conditions<br>• 2 or more of any of the listed chronic conditions<br><br>Based on responses to the following set of questions (count responses = 1)<br><br>CCHS variables of interest:<br>• CCC_Q290 (anxiety disorder),<br>• CCC_Q051 (arthritis),<br>• CCC_Q031 (asthma),<br>• CCC_Q091 (chronic bronchitis, emphysema, COPD),<br>• CCC_Q101 (diabetes),<br>• CCC_Q121 (heart disease),<br>• CCC_Q071 (hypertension),<br>• CCC_Q280 (mood disorders) |
| | **Denominator**<br>All respondents aged 12* or above for 2013<br><br>**Exclusion:**<br><br>For CCC_Q290, CCC_Q051, CCC_Q031, CCC_Q091, CCC_Q101, CCC_Q121, CCC_Q071, CCC_Q280, exclude:<br>• 8: RF<br>• 9: DK<br><br>*The CCHS question pertaining to arthritis was only asked in respondents 14 years or older. |
| | **Methods**<br>Numerator/Denominator*100 |
| | **Adjustment**<br>Direct adjustment (age) using 1991 Canadian Census population aged 12+. Age groups are 12-17, 18-29, 30-39, 40-49, 50-59, 60-69, 70+.<br><br>Sampling weights are used for calculating all estimates. |

| Data source / data elements | Canadian community health survey (CCHS) conducted by Statistics Canada provided by the Institute for Clinical Evaluative Sciences |
|---|---|
| Levels of comparability/stratification descriptions | Data are compared by household income quintile, (see page 4 for a description) |
| Limitations / Caveats | As this indicator relies on self-reported data (diagnosis of the specific chronic condition) the true rate might in fact be higher or lower.<br><br>The chronic conditions included in the definition of this indicator were determined by a panel of physicians and are not an exhaustive list of all chronic conditions available through the CCHS. The rate of chronic conditions reported based on this indicator may differ from other similar indicators.<br><br>In addition, this survey excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions, which will affect the representativeness of the sample and underestimation of the true rates. Altogether, these exclusions represent <3% of the target population.<br><br>Cell phones were not allowed for interviewing in the CCHS up to and including 2014. If an interviewer discovers that the phone the respondent is on is cellular, they ask if there is another number to call back on. This is also the case if they discover that the respondent answered on a cell that was forwarded to by a landline. The interviewer would not be able to enter the case once they determined the phone was a cell. As of 2015 cell phones are allowed. While this will help increase number of respondents and avoid biasing against the increasing trend for households to only have cell phones, it may result in differences in comparability of survey samples over time. |
| Timing and frequency of Release | CCHS is updated annually |

## HAVING A PRIMARY CARE PROVIDER

| Description | This indicator reports the percentage of adults that have a family doctor, a general practitioner or GP, family physician, nurse practitioner, or family medicine resident that they see for regular check-ups and when they are sick.<br><br>A higher percentage is better. |
|---|---|
| Relevance/Rationale | For most people, primary healthcare (PHC) is the first point of contact with the healthcare system.<br><br>Persons with a regular doctor may have better access to primary care than those without one. Research shows that increased access to a primary health care provider is associated with better health and lower total health care system costs.[1] Having a family doctor is also linked to positive health outcomes, including better preventive care and management of chronic conditions, decreased hospitalization and fewer emergency department visits.[2,3] Patients without family physicians seek care from other services such as walk-in clinics or emergency departments,  which may result in poor coordination of care, , higher risk for drug interactions and delays in receiving results of lab or diagnostic tests.[4]<br><br>Among health providers, family physicians (FPs) and general practitioners (GPs) are the health professionals most often contacted at least once by Canadians and play the largest role in providing the care.[5] |

| HQO reporting tool | Measuring up. 2015<br>Primary Care Public Reporting Web Pages<br>*Quality in Primary Care*, 2015 (HQO Theme Report) |
|---|---|
| **Reporting tools external to HQO** | Other indicators in the same family:<br>• Canadian Institute for Health Information's Your Health System (the data source and population are different therefore the results reported on Your Health System are different)<br>• Commonwealth Fund International Health Policy Survey (The survey has a similar question i.e. regular doctor or place of care, but the population surveyed is different, therefore the results from the Commonwealth Fund Survey differ. Furthermore, the results from the Commonwealth Fund Survey are at the country and provincial level only and different populations are surveyed depending on the survey cycle year.) |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>Number of respondents who answered "yes" to the following question on the Health Care Experience Survey:<br>Do you have a family doctor, a general practitioner or GP, family physician, nurse practitioner, or family medicine resident that you see for regular checkups, when you are sick and so on?<br>• Yes<br>• No<br>• Don't know<br>• Refused |
| | **Denominator**<br>Number of respondents to the survey question<br><br>**Exclusions:**<br>• Respondents who answered "don't know" or refused to answer the above question |
| | **Methods**<br>Numerator/Denominator X100 |
| | **Adjustment** *(risk, including age/sex standardization)*<br>Weighted to account for the design characteristics of the survey and post-stratified by age and sex to reflect the Ontario population. |
| **Data source / data elements** | Health Care Experience Survey (HCES) provided by the Ministry of Health and Long-Term Care (MOHLTC) |
| **Levels of comparability/stratification descriptions** | Data are compared by household income category (see page 4 for a description) |
| **Limitations / Caveats** | Only people aged 16 years and older can complete the survey.<br><br>People living in institutions, non-residential phone numbers, and people with invalid/missing household addresses in the Registered Persons Database (RPDB) are not captured.<br><br>Respondents who were unable to speak English or French or were not healthy enough (physically or mentally) to complete the interview were not surveyed. |
| **Timing and frequency of Release** | The Health Care Experience Survey is conducted quarterly. |

1. Lambrew JM, DeFriese GH, Carey TS, Ricketts TC, Biddle AK. The Effects of Having a Regular Doctor on Access to Primary Care. Medical Care. 1996;34(2):138–51.

2. Glazier R. Balancing equity issues in health system: Perspectives of primary healthcare. 2007

3.  Hay C, Pacey M, Bains N, Ardal S. Understanding the unattached population in Ontario. Evidence from Primary Care Access Survey. Health Policy. 2010;6(2):33-47.
4.  Rask KJ, Williams MV, Parker RM, McNagny SE. Obstacles Predicting Lack of a Regular Provider and Delays in Seeking Care for Patients at an Urban Public Hospital. Journal of the American Medical Association. 1994;271(24):1931–33.
5.  Jaakkimainen L, Upshur REG, Klein-Geltink JE, Maaten S, Schultz SE, Leong, A, et al. Primary Care: A practice Atlas. Toronto: Institute for clinical Evaluative Sciences. 2006

## SPECIALIST WAIT TIMES (<30 DAYS)

| | |
|---|---|
| **Description** | This indicator reports the percentage of the population that waits less than 30 days to see a specialist after they were advised to see a specialist.<br><br>A higher percentage is better |
| **Relevance/Rationale** | In the report Experiencing Integrated Care (which was based on the Commonwealth Fund Survey of Older Adults), produced by Health Quality Ontario, in 2015, it was reported that Ontario has some of the longest specialist wait times when compared to other countries surveyed by the Commonwealth Fund. Understanding whether these long wait times vary by income is necessary to ensure equity. |
| **HQO reporting tool** | *N/A* |
| **Reporting tools external to HQO** | *N/A* |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>All patients who waited:<br><br>• **<30 days**<br><br>For HCES – derived from Spec_2<br>**Exclude:**<br>• 97 never got an appointment/still waiting/etc.<br>• 98 don't know<br>• 99 refused |
| | **Denominator**<br>Respondents who were advised to see a specialist by their family doctor, general practitioner or nurse practitioner in the past 12 months<br><br>For HCES – all patients who reply 'yes' (1) to question Spec_1<br><br>**Exclude:**<br>• 8 don't know<br>• 9 refused |
| | **Methods**<br>Numerator/Denominator X100 |
| | **Adjustment**<br>Weighted to account for the design characteristics of the survey and post-stratified by age and sex to reflect the Ontario population. |
| **Data source / data elements** | Health Care Experience Survey (HCES), provided by the Ministry of Health and Long-Term Care |
| **Levels of comparability/stratification descriptions** | This indicator was compared by household income category (see page 4 for a description) |
| **Limitations / Caveats** | As this indicator is self-reported the reported rate may be an underestimation or an overestimation of the true rate. |

| | This indicator will not include people who have been referred for a specialist visit but have not yet been seen by the specialist

This indicator does not capture whether everyone who needed a specialist received a referral to see a specialist and should be interpreted with that caveat.

Wait times exceeding 30 days may, in some cases, be clinically appropriate. |
|---|---|
| **Timing and frequency of Release** | The Health Care Experience Survey is conducted quarterly. |


| CERVICAL CANCER SCREENING | |
|---|---|
| **Description** | This indicator reports the percentage of Ontario screen-eligible women, 21-69 years of age, who had at least one Pap test in a three-year period.

A higher percentage is better. |
| **Relevance/Rationale** | Cervical cancer is preventable and yet over 600 women are diagnosed with cancer of the cervix annually and about 150 women die from this disease in Ontario.[1]

Regular screening is an essential defense against cervical cancer. Cervical cancer screening can detect early cell changes on the cervix caused by persistent human papillomavirus (HPV) infection. These changes seldom cause any symptoms but can progress to cancer if not found and managed.[1]

Cancer Care Ontario (CCO) updated its cervical cancer screening guidelines in 2012. Cervical cancer screening is recommended for women aged 21–69 every 3 years if they are or have ever been sexually active. Screening can stop at 70 years of age in women who have had 3 or more normal tests in the prior 10 years.[2] |
| **HQO reporting tool** | Measuring Up 2015, Primary Care Quality Improvement Plans |
| **Reporting tools external to HQO** | Cancer Care Ontario Cancer Screening Quality Index (CSQI) |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**
Total number of Ontario screen-eligible women, 21-69 years of age, who have had at least one Pap test in a given three-year period, identified by fee codes in OHIP:
- E430A: add-on to a003, a004, a005, a006 when pap performed outside hospital
- G365A: Periodic-pap smear
- E431A: When Papanicolaou smear is performed outside of hospital, to G394.
- G394A: Additional for follow-up of abnormal or inadequate smears
- L713A: Lab.med.-anat path,hist,cyt-cytol-gynaecological specimen
- L733A: Cervicovaginal specimen (monolayer cell methodology)
- L812A: Cervical vaginal specimens including all types of cellular abnormality, assessment of flora, and/or cytohormonal evaluation
- Q678A: Gynaecology – pap smear – periodic – nurse practitioners |

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| | Notes:<br>• Index date was defined as the first screen date per person by date of specimen collection in CytoBase or by service date in OHIP in a three-year period<br>• All Pap tests in CytoBase were counted, including those with inadequate specimens<br>• Each woman was counted once regardless of the number of Pap tests performed in a three-year period |
| | **Denominator**<br>Total number of Ontario screen-eligible women aged 21-69 years at the index date , in a given three-year period<br><br>(Index date was defined as the midpoint in a three-year period)<br><br>**Exclusions:**<br>• Women with a missing or invalid HIN, date of birth, LHIN or postal code<br>• Women diagnosed with an invasive cervical cancer prior to the January 1st that begins a three-year period; defined as ICD-0-3 code C53, a morphology indicative of cervical cancer, microscopically confirmed with a path report<br>• Women with a hysterectomy prior to the January 1st that begins a three-year period, as defined by presence of following OHIP codes<br>    o E862A – When hysterectomy is performed laparoscopically, or with laparoscopic assistance<br>    o P042A – Obstetrics – labour – delivery – caesarean section including hysterectomy<br>    o Q140A – Exclusion code for enrolled female patients aged 35-70 with hysterectomy<br>    o S710A – Hysterectomy - with or without adnexa (unless otherwise specified) – with omentectomy for malignancy<br>    o S727A – Ovarian debulking for stage 2C, 3B or 4 ovarian cancer and may include hysterectomy<br>    o S757A – Hysterectomy – with or without adnexa (unless otherwise specified) – abdominal – total or subtotal<br>    o S758A – Hysterectomy - with or without adnexa (unless otherwise specified) – with anterior and posterior vaginal repair and including enterocoele and/or vault prolapse repair when rendered<br>    o S759A - Hysterectomy - with or without adnexa (unless otherwise specified) – with anterior or posterior vaginal repair and including enterocoele and/or vault prolapse repair when rendered<br>    o S762A - Hysterectomy - with or without adnexa (unless otherwise specified) – radical trachelectomy - excluding node dissection<br>    o S763A - Hysterectomy - with or without adnexa (unless otherwise specified) – radical (Wertheim or Schauta) - includes node dissection<br>    o S765A – Amputation of cervix<br>    o S766A- Cervix uteri - Exc - Cervical stump – abdominal<br>    o S767A- Cervix uteri - exc - Cervical stump – vaginal<br>    o S816A - Hysterectomy - with or without adnexa (unless otherwise specified) - vaginal |
| | **Methods** |

| | Numerator/Denominator X100 |
|---|---|
| | **Adjustment** *(risk, including age/sex standardization)*<br>Direct age standardization to the 2011 Canadian population |
| **Data source / data elements** | • CytoBase - Pap tests<br>• OHIP's CHDB (Claims History Database) – Pap tests, Hysterectomy claims<br>• OCR (Ontario Cancer Registry) - Resolved invasive cervical cancers<br>• RPDB (Registered Persons Database) - Demographics<br>• PCCF+, version 6A - Residence and socio-demographic information<br><br>Retrieved from Cancer System Quality Index (CSQI) site.[3] |
| **Levels of comparability/stratification descriptions** | Data are compared by neighbourhood income quintile for urban residents only |
| **Limitations / Caveats** | A small proportion of Pap tests performed as a diagnostic test could not be excluded from the analysis.<br> 87% of pap tests performed in Ontario are in CytoBase, there are 13% are not included in the analysis since they are processed in hospital labs.<br><br>The rate of Pap screening includes women who may have had insufficient samples and so have not been adequately screened<br><br>This indicator dichotomizes respondents into screened or not, however the time since last screening or whether women have ever been screened is not captured and this may mask larger differences in the indicator by selected stratifications.<br><br> Neighbourhood income quintile is calculated for urban residents only. |
| **Timing and frequency of Release** | Calculated annually by CCO. |

1. Cancer Care Ontario. (2015). Cervical Cancer Screening. Retrieved from: https://www.cancercare.on.ca/pcs/screening/cervscreening/
2. Cancer Care Ontario. (2012). Ontario Cervical Screening Cytology Guidelines Summary. Retrieved from: https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=13104
3. Cancer Care Ontario. (2015). Ontario Cervical Screening Cytology Guidelines Summary. Retrieved July 23, 2015 from: http://www.csqi.on.ca/cms/One.aspx?portalId=327483&pageId=335148

| **OVERDUE FOR COLORECTAL CANCER SCREENING** | |
|---|---|
| **Description** | This indicator reports the percentage of Ontarians aged 50–74, who were overdue for colorectal cancer screening in a calendar year.<br><br>A lower percentage is better. |
| **Relevance/Rationale** | Colorectal cancer is the fourth most commonly diagnosed cancer in Ontario. In 2014, an estimated 8,900 Ontarians were diagnosed with colorectal cancer, and approximately 3,400 Ontarians will die from it. A person with colorectal cancer has a 90% chance of being cured if it is diagnosed early through screening.[1]<br><br>ColonCancerCheck recommends that all Ontarians aged 50 and over be screened for colorectal cancer. For individuals at average risk for colorectal cancer, the Fecal Occult Blood Test (FOBT) once every two years is recommended. For those at increased risk because of a family history of colorectal cancer, colonoscopy is advised.[2] |
| **HQO reporting tool** | Measuring up 2015<br>Primary Care Public Reporting Web Pages<br>*Quality in Primary Care*, 2015 (HQO Theme Report) |

| | |
|---|---|
| | Other indicators in the same family:<br> &bull; Quality Improvement Plans provider level data and the inverse is reported, i.e. percentage of patients who are "up to date" in cancer screening and is extracted from EMRs<br> &bull; Primary care practice reports (provider level data and the inverse is reported, i.e. percentage of patients who are "up to date" in cancer screening |
| **Reporting tools external to HQO** | Cancer Care Ontario Cancer Screening Quality Index (CSQI)<br><br>Other indicators in the same family:<br> &bull; Multi-Sector Accountability Agreement (sector specific for CHCs) |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>Total number of Ontario screen-eligible individuals, 50–74 years old, who were overdue for colorectal screening by the end of the calendar year as defined by not having any of the following*:<br><br>**Fecal Occult Blood Test (FOBT) in the last 2 years:**<br> &bull; Program CCC FOBTs were identified in Laboratory Reporting Tool<br> &bull; Non-program FOBTs were identified using fee codes in OHIP:<br>   &omicron; G004 Lab.med.in office - Occult blood<br>   &omicron; L179 ColonCancerCheck Fecal Occult Blood Testing<br>   &omicron; L181 Lab Med - Biochem - Occult Blood<br><br>**Colonoscopy in the last 10 years:**<br>Identified using fee codes Z555, Z491A, Z492A, Z493A, Z494A, Z495A, Z496A, Z497A, Z498A, and Z499A in OHIP<br><br>**Flexible sigmoidoscopy in the last 5 years:**<br>Identified using fee code Z580 in OHIP<br><br>*Multiple claims with the same Health Insurance Number (HIN), service date and fee code were assumed to be a single claim. Each individual was counted once regardless of the number of tests performed.* |
| | **Denominator**<br>Total number of Ontario screen-eligible individuals, 50–74 years old in each calendar year<br><br>**Exclusions:**<br> &bull; Individuals with a missing or invalid HIN, date of birth, sex or postal code<br> &bull; Individuals with an invasive colorectal cancer prior to Jan 1 of the calendar year of interest; prior diagnosis of colorectal cancer was defined as: ICD-O-3 codes C18.0, C18.2-C18.9, C19.9, C20.9, a morphology indicative of colorectal cancer, microscopically confirmed with a path report.<br> &bull; Individuals with a total colectomy prior to Jan 1 of the calendar year of interest. Total colectomy was defined in OHIP by fee codes S169, S170, S172 |
| | **Methods**<br>Numerator/Denominator X100<br><br>Individuals were considered overdue for colorectal screening if they:<br> (1) did not return a FOBT kit within the last two years (Jan 1 of the previous year to Dec 31st of the calendar year of interest) AND |

| | |
|---|---|
| | (2) did not have a colonoscopy in the last 10 years (Jan 1 nine years prior to the calendar year of interest to Dec 31st of the calendar year of interest) AND<br><br>(3) did not have a flexible sigmoidoscopy in the last five years (Jan 1 four years prior to the calendar year of interest to Dec 31st of the calendar year of interest) |
| | **Adjustment** (risk, including age/sex standardization)<br>Direct age standardization to the 2011 Canadian population |
| **Data source / data elements** | • CIRT (Colonoscopy Interim Reporting Tool) – CCC program colonoscopy records<br>• LRT– CCC FOBTs<br>• OHIP's CHDB (Claims History Database)– Non-CCC FOBT, colonoscopy, flexible sigmoidoscopy and colectomy claims<br>• OCR (Ontario Cancer Registry) - Resolved invasive colorectal cancers<br>• RPDB (Registered Persons Database) – Demographics<br>• PCCF+, version 6A - Residence and socio-demographic info |
| **Levels of comparability/stratification descriptions** | Data are compared by neighbourhood income quintile for urban residents only |
| **Limitations / Caveats** | Historical RPDB address information is incomplete; therefore, the most recent primary address was selected for reporting, even for historical study periods.<br><br>FOBTs analyzed in hospital labs could not be captured.<br><br>Only FOBT as a primary screening test could be assessed; FOBT is recommended for those at average risk of colorectal cancer, while those at increased risk (1st degree relative with colorectal cancer) were not assessed as they could not be accurately identified.<br><br>A small proportion of FOBTs performed as diagnostic tests could not be excluded from the analysis.<br><br>OHIP data may include (CCC program) rejected kits.<br><br>This indicator does not capture tests performed as part of the Registered Nurse Flexible Sigmoidoscopy Project (represents about 7,192 flexible sigmoidoscopies as of October, 2012).<br><br>This indicator dichotomizes respondents into screened or not, however the time since last screening or whether people have ever been screened is not captured and this may mask larger differences in the indicator by selected stratifications.<br><br>Neighbourhood income quintile is calculated for urban residents only. |
| **Timing and frequency of Release** | The data are calculated and provided by CCO annually. |

1. Cancer Care Ontario. (2015). Colorectal cancer screening. Retrieved from:
   https://www.cancercare.on.ca/pcs/screening/coloscreening/?WT.mc_id=/colorectalscreening
2. Cancer Care Ontario. (2015). About ColonCancerCheck. Retrieved from: https://www.cancercare.on.ca/pcs/screening/coloscreening/cccworks/

| **DIABETES EYE EXAM** | |
|---|---|
| **Description** | This indicator reports the percentage of Ontarians with diabetes aged 20 to 64 years who had an eye exam within a two-year period. |

| | A higher percentage is better |
|---|---|
| **Relevance/Rationale** | Currently over one million Ontarians are living with diabetes.[1] Diabetic retinopathy (DR), is a non-inflammatory eye disorder caused by changes in the retinal blood vessels. Diabetic retinopathy is the most common cause of blindness for people under 65 and affects 23% of people with type 1 diabetes and 14% of people with type 2 diabetes on insulin therapy.[2] <br><br> Screening is important for early detection of this treatable disease. Routine screening, referral and treatment for diabetic retinopathy can reduce the risk of onset of blindness and is a cost-effective way to prevent or delay vision loss. The clinical practice guidelines recommend screening for retinopathy in patients with type 2 diabetes every 1-2 years and annually for patients with type 1 diabetes. The interval for follow-up assessments should be tailored to the severity of the retinopathy. In those with no or minimal retinopathy, the recommended interval is 1–2 years.[3] |
| **HQO reporting tool** | Measuring Up 2015 |
| **Reporting tools external to HQO** | N/A |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator** <br> Prevalent diabetics (for that specific FY) with any claim for an eye exam within the previous 2 years based on presence of following: <br> • OHIP fee codes = A115 (major eye exam); A233 to A240 (ophthalmology); C233 to C236 (ophthalmology emergency and out-patient department); Optometrist fee codes V401, V402, V404 to V409, V450, V451; A110, A111, A112, A114, A252, A253 and A254. <br> • OHIP fee codes = K065, K066 where spec=23 (Ophthalmology) |
| | **Denominator** <br> All diabetes prevalent cases in ODD database for years from 2002/03-2011/12 <br> **Exclusions:** <br> • People who were not resident in Ontario in each year <br> • Age on index date in each corresponding year exams: <20 years & >=65 years <br> • Died before end of follow-up period |
| | **Methods** <br> Numerator/Denominator*100 |
| | **Adjustment** *(risk, including age/sex standardization)* <br> None |
| **Data source / data elements** | OHIP's CHDB (Claims History Database), Ontario Diabetes Database (ODD) and Registered Persons Database (RPDB) provided by the Institute for Clinical Evaluative Sciences (ICES) |
| **Levels of comparability/stratification descriptions** | Data are compared by neighbourhood income quintile, (see page 4 for a description). |
| **Limitations / Caveats** | ODD doesn't distinguish between type 1 and type 2 diabetes. <br><br> The entire ODD is re-created yearly using updated OHIP, CIHI/SDS, and RPDB data. The reason for re-creating the database is that RPDB may change and also the 2-year diagnosis algorithm will alter the numbers of patients in more recent years as more data are received. |

| | It is not possible to specifically identify the detail/type of the screening using the admin database, instead it was attempted to select all possible opportunities for retinal screening. |
|---|---|
| | OHIP has data only for MDs with fee for service practice. Some have alternate funding and their services would be missing from analysis. |
| | Since the OHIP database is updated bi-monthly there may be delays in capturing the completed eye exams. |
| | The indicator does not specify patients with diabetes that have already been diagnosed with retinopathy. According to guidelines for these patients the appropriate monitoring intervals (≤1 year) are established based on severity. |
| **Timing and frequency of Release** | OHIP data is updated by ICES bi-monthly<br>ODD is updated by ICES annually |

1. Booth GL, Polsky JY, Gozdyra G, Cauch-Dudek K, Kiran T, Shah BR, et al. Regional Measures of Diabetes Burden in Ontario. Toronto: Institute for Clinical Evaluative Sciences. 2012.
2. Canadian Diabetes Association. (2016). Eye Damage (Diabetic Retinopathy). Retrieved from: http://www.diabetes.ca/diabetes-and-you/complications/eye-damage-diabetic-retinopathy
3. Boyd, S., Advani, A., Altomare, F. & Stockl, F. (2013). Canadian Diabetes Association 2013 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada: Retinopathy. Can J Diabetes,37:S137-S141. DOI: http://dx.doi.org/10.1016/j.jcjd.2013.01.038

| **PRESCRIPTION MEDICATION INSURANCE** | |
|---|---|
| **Description** | This indicator reports the percentage of Ontarians from ages 12 to 64 who report having prescription medication insurance.<br><br>A higher percentage is better |
| **Relevance/Rationale** | While the Canada Health Act ensures universal coverage for medically necessary hospital, physician and surgical-dental and limited long-term care services, it does not cover prescription medication. As such, gaps in prescription medication insurance within the population will arise. Examining these gaps to understand the populations most affected by a lack of universal prescription medication coverage is necessary to work towards a more equitable health system. |
| **HQO reporting tool** | None |
| **Reporting tools external to HQO** | None |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>Respondents who reporting having prescription medication insurance (1: Yes)<br><br>**Exclude:**<br>• Respondents age >=65 years<br>• Respondents who refused to answer INS_Q1=8<br><br>CCHS variable INS_Q1:<br>Do you have insurance that covers all or part of the cost of your prescription medications?<br>• 1: Yes<br>• 2: No<br>8: RF |
| | **Denominator**<br>Total respondents aged 12 and over |
| | **Methods** |

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|  | Numerator/Denominator*100 |
| --- | --- |
|  | **Adjustment**<br>Direct adjustment (age) using 1991 Canadian Census population aged 12+. Age groups are 12-17, 18-29, 30-39, 40-49, 50-59, 60-64 |
| **Data source / data elements** | Canadian Community Health Survey, provided by the Institute for Clinical and Evaluative Sciences |
| **Levels of comparability/stratification descriptions** | Data are compared by household income quintile, (see page 4 for a description). |
| **Limitations / Caveats** | As this indicator relies on self-reported data, the true rate might in fact be higher or lower.<br><br>In addition, this survey excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions, which will affect the representativeness of the sample and underestimation of the true rates. Altogether, these exclusions represent <3% of the target population.<br><br>Cell phones were not allowed for interviewing in the CCHS up to and including 2014. If an interviewer discovers that the phone the respondent is on is cellular, they ask if there is another number to call back on. This is also the case if they discover that the respondent answered on a cell that was forwarded to by a landline. The interviewer would not be able to enter the case once they determined the phone was a cell. As of 2015 cell phones are allowed. While this will help increase number of respondents and avoid biasing against the increasing trend for households to only have cell phones, it may result in differences in comparability of survey samples over time. |
| **Timing and frequency of Release** | CCHS is updated annually |

| **EMERGENCY DEPARTMENT VISITS FOR MENTAL ILLNESS OR ADDICTION** |
| --- |

| **Description** | This indicator reports the crude number of emergency department visits for a mental illness or addiction |
| --- | --- |
| **Relevance/Rationale** | Emergency department visits for a mental illness or addiction could signal the need for the availability of more services in the community or at the primary care level. Examining the number of emergency department visits by income reveals disproportionate magnitude and burden of mental health and addictions on the population and the health system. |
| **HQO reporting tool** | *N/A* |
| **Reporting tools external to HQO** | *N/A* |
| **Unit of analysis** | Number of visits |
| **Calculation** | **Numerator**<br>Number of individuals aged 16-105 who visited the emergency department for a mental health or addictions reason<br><br>    **Exclusions:**<br>    • Invalid IKN<br>    • Missing sex<br>    • Age:< 16 or Age > 105<br>    • Non-Ontario resident |

| | |
|---|---|
| | • Planned or scheduled ED visits: |
| | **Denominator** N/A |
| | **Methods** N/A |
| | **Adjustment**<br>Not adjusted |
| **Data source / data elements** | National Ambulatory Care Reporting System (NACRS), provided by ICES |
| **Levels of comparability/stratification descriptions** | Data are compared by Neighbourhood income quintile (see page 4 for a description). |
| **Limitations / Caveats** | This indicator reports the volume of emergency department visits for a mental illness or addiction and is not adjusted for age or sex. |
| **Timing and frequency of Release** | NACRS is updated annually at ICES |

| FIRST CONTACTS IN THE EMERGENCY DEPARTMENT FOR A MENTAL ILLNESS OR ADDICTION | |
|---|---|
| **Description** | This indicator reports the crude number of visits in the emergency department for a mental illness or addiction that were the first contact with the mental health system |
| **Relevance/Rationale** | First contacts in the emergency department for a mental illness or addiction could signal the need for the availability of more services at the community level. Examining the number of first contacts in the emergency department by income reveals a disproportionate magnitude and burden of mental health and addictions on the population and the health system. |
| **HQO reporting tool** | *N/A* |
| **Reporting tools external to HQO** | *N/A* |
| **Unit of analysis** | Number of first contacts |
| **Calculation** | **Numerator**<br>Number of individuals aged 16-105 who visited the emergency department for a mental health or addictions reason without a prior MHA outpatient, emergency department, or hospital admission in the past two years.<br><br>   **Exclusions:**<br>   • Invalid IKN<br>   • Missing sex<br>   • Age:< 16 or Age > 105<br>   • Non-Ontario resident<br>   • Planned or scheduled ED visits:<br><br>**Denominator** N/A |
| | **Methods** N/A |
| | **Adjustment** N/A |
| **Data source / data elements** | National Ambulatory Care Reporting System (NACRS), Ontario Health Insurance Plan (OHIP), Discharge Abstract Database (DAD), Ontario Mental Health Reporting System (OMHRS), provided by ICES |

| | |
|---|---|
| **Levels of comparability/stratification descriptions** | Data are compared by Neighbourhood income quintile (see page 4 for a description) |
| **Limitations / Caveats** | This indicator reports the volume of first contacts for a mental illness or addiction in the emergency department and is not adjusted for age or sex. |
| **Timing and frequency of Release** | NACRS, OHIP, DAD, OMHRS are updated annually at ICES. |

| **SELF-REPORTED HEALTH STATUS** | |
|---|---|
| **Description** | This indicator reports the percentage of the population aged 12 and older who rated their general health as excellent/very good, good, and fair/poor. |
| **Relevance/Rationale** | Evidence shows that self-reported health status is a strong predictor of mortality, functional decline and other future health outcomes.[1,2,3] The results of a study showed that self-reported health status is a strong and independent predictor of disability.[4] While subjective, this measure has the ability to capture aspects of health such as psycho-social factors, which can be hard to capture clinically. Taking this into account along with the predictive power of this indicator makes it important to measure and report. |
| **HQO reporting tool** | Measuring Up 2015 |
| **Reporting tools external to HQO** | Statistics Canada CANSIM tables<br>Commonwealth Fund reports (country level)<br>Canadian Institute for Health Information Your Health System<br><br>Other indicators in the same family:<br>• Organization for Economic Co-operation and Development (OECD) Health Statistics (in population *15 years and older*, by country) |
| **Unit of analysis** | Percentage |
| **Calculation** | **Numerator**<br>Number of respondents who rated their health as:<br>• Excellent/Very good;<br>• Good; or<br>• Fair/Poor<br><br>**Inclusions:**<br>• "Excellent/Very good" if GENDHDI = 3, 4<br>• "Good" if GENDHDI = 2<br>• "Fair/Poor" if GENDHDI = 0, 1<br><br>Codes for GENDHDI<br>0 = Poor<br>1 = Fair<br>2 = Good<br>3 = Very Good<br>4 = Excellent<br>6 = Not Applicable<br>7 = Don't Know<br>8 = Refusal<br>9 = Not Stated |
| | **Denominator**<br>All respondents aged 12 and above for years of interest. |

| | |
|---|---|
| | **Exclusions:**<br>• Age < 12 at the time of interview<br>• Invalid indication/Missing values |
| | **Methods**<br>Numerator/Denominator X100 |
| | **Adjustment** *(risk, including age/sex standardization)*<br>Direct adjustment (age) using 1991 Canadian Census population aged 12+. Age groups are 12-17, 18-29, 30-39, 40-49, 50-59, 60-69, 70+.<br><br>Sampling weights are used for calculating all estimates. |
| **Data source / data elements** | Canadian Community Health Survey (CCHS) provided by the Institute for Clinical Evaluative Sciences |
| **Levels of comparability/stratifi cation descriptions** | Data are compared by income quintile, (see page 4 for a description) |
| **Limitations / Caveats** | As this indicator relies on self-reported data, the true rate might in fact be higher or lower.<br><br>In addition, this survey excludes individuals living on Indian Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions, which will affect the representativeness of the sample and underestimation of the true rates. Altogether, these exclusions represent <3% of the target population.<br><br>Cell phones were not allowed for interviewing in the CCHS up to and including 2014. If an interviewer discovers that the phone the respondent is on is cellular, they ask if there is another number to call back on. This is also the case if they discover that the respondent answered on a cell that was forwarded to by a landline. The interviewer would not be able to enter the case once they determined the phone was a cell. As of 2015 cell phones are allowed. While this will help increase number of respondents and avoid biasing against the increasing trend for households to only have cell phones, it may result in differences in comparability of survey samples over time.<br><br>As with any survey, data sourced from the CCHS has its own limitations. Behaviours or characteristics may be under-reported or over-reported due to the perceived desirability of the responses presented. In addition, as surveys are not always wholly representative of the population being studied, certain groups may be under-represented or over-represented.<br><br>Some research points to concerns regarding the comparability of self-rated health status between ethnic groups, and or across other socio-economic and demographic variables.[5,6,7] Therefore, such comparisons should be interpreted with caution. |
| **Timing and frequency of Release** | CCHS is updated annually |

1. Idler EL, Benyamini Y. Self-Rated Health and Mortality: A Review of Twenty-Seven Community Studies. Journal of Health and Social Behavior. 2007;38(1):21-37
2. DeSalvo KB, Bloser N, Reynolds K, He J, Muntner P. Mortality Prediction with a Single General SelfRated Health Question. Journal of General Internal Medicine. 2006;21:267–275.
3. Idler EL, Kasl SV. Self-ratings of health: Do they also predict change in functional ability? The Journals of Gerontology Series B: Psychological Sciences and Social Sciences. 1995;50B(6):S344-53.
4. Mansson N, Rastam L. Self-rated health as a predictor of disability pension and death — A prospective study of middle-aged men. Scandinavian Journal of Public Health. 2001;29(2):151-8
5. Menec VH, Sooshtari S, Lambert P. Ethnic differences in self-rated health among older adults: a cross-sectional and longitudinal analysis. Journal of Aging Health. 2007;19(1): 62-86.

6.  Murray CJL, Chen LC. Understanding morbidity change. Population and Development Review. 1999; 18(3):481-503.
7.  Johansson SR. The health transition: The cultural inflation of morbidity during the decline of mortality. Health Transition Review. 1992;2:78-89

| LIFE EXPECTANCY AT BIRTH | |
|---|---|
| **Description** | Life expectancy is the number of years a person would be expected to live, starting at birth (for life expectancy at birth) if the age- and sex-specific mortality rates for a given observation period (such as a calendar year) were held constant over his/her life span. [1]<br><br>A higher number is better |
| **Relevance/Rationale** | Life expectancy at birth is used worldwide and it tells us about the general health of a population. [1]<br><br>Life expectancy at birth reflects the overall mortality level of a population.[2] It measures the number of years rather than the quality of life, so it does not reflect the number of years spent in a good health.<br><br>Life expectancy at birth has been increasing for many decades. In Canada it has increased substantially going up from about 60 years in 1920 to more than 80 in 2009.[3, 4]<br><br>Examining life expectancy by income allows us to examine that impact of inequity on this important health outcome. |
| **HQO reporting tool** | Measuring Up 2015 |
| **Reporting tools external to HQO** | • Statistics Canada<br>• Organization for Economic Cooperation and Development<br>• Canadian Institute for Health Information<br>• Association of Public Health Epidemiologists of Ontario |
| **Unit of analysis** | Years |
| **Calculation** | **Numerator**<br>Cumulative number of person-years lived, for a cohort of 100,000 persons |
| | **Denominator**<br>Number of persons in an initial cohort of 100,000 live births<br><br>**Exclusion:**<br>Rates used by Statistics Canada to calculate life expectancy are calculated with data that excludes the following:<br>• Births to mothers who are not residents of Canada<br>• Births to mothers who are residents of Canada whose province or territory of residence was unknown<br>• Deaths of non-residents of Canada<br>• Deaths of residents of Canada whose province or territory of residence was unknown<br>• Deaths for which age or sex of the decedent was unknown |
| | **Methods**<br>Cumulative number of person-years lived, divided by the number of live births or people aged 65 in the initial cohort. |

| | Age- and sex-specific mortality rates corresponding to the reference period are applied to a hypothetical cohort, typically of 100,000 people. Starting at birth, the probability of dying at each age or age interval is applied to the number of people surviving to that age or the beginning of the age interval, respectively. |
|---|---|
| | **Adjustment**<br>N/A |
| **Data source / data elements** | Canadian Mortality Database (2009-2011) provided by the Pan-Canadian Health Inequalities Data Cube, 2015 Edition |
| **Levels of comparability/stratification descriptions** | Compared by neighbourhood income quintile (see page 4 for a description) |
| **Limitations / Caveats** | This indicator does not provide information on the individual causes of deaths or on quality of life.<br><br>Life expectancy does not provide information about the quality of life which might be a more meaningful measure of years lived. Other measures have been developed using a composite of morbidity and mortality data. For example, health-adjusted life expectancy (HALE) is the average number of years that an individual is expected to live in a healthy state.[8] |
| **Timing and frequency of Release** | National estimates are available in 10-year intervals starting in 1920 and annually starting in 1979. Provincial/territorial estimates are available annually from 1979 to 2006. Separate estimates for Nunavut and the Northwest Territories are available annually from 1999 to 2006. From 1979 to 1999, estimates are available for the two territories combined as "Northwest Territories including Nunavut."<br><br>Estimates based on three years of pooled data are available at the provincial level from 1992 to 1994 onward; however, the territories are presented as a group for the period between 1992 to 1994 and 1997 to 1999.<br><br>Estimates based on three years of pooled data are available at the regional level from 2000 to 2002 forward. |

1. http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1020512&tabMode=dataTable&srchLan=-1&p1=-1&p2=9
2. World Health Organization: http://apps.who.int/gho/indicatorregistry/App_Main/view_indicator.aspx?iid=65 accessed on May 5 2014
3. Statistics Canada. http://www.statcan.gc.ca/pub/82-624-x/2011001/article/chart/11427-02-chart2-eng.htm
4. Statistics Canada. *Table 102-0512 - Life expectancy, at birth and at age 65, by sex, Canada, provinces and territories, annual (years),* CANSIM (database).

| POTENTIAL YEARS OF LIFE LOST | |
|---|---|
| **Description** | The average number of years a person would have lived if he or she had not died prematurely (i.e., before age 75)<br><br>A lower rate is better |
| **Relevance/Rationale** | Avoidable mortality indicators can serve to inform where the health system has made gains and to point to where more work is needed. They can also help to quantify potential gains. This is especially relevant for a health equity report as this indicator serves to quantify the differences in this particular health outcome among various populations. |
| **HQO reporting tool** | N/A |
| **Reporting tools external to HQO** | Canadian Institute for Health Information<br>Statistics Canada |

| | Pan-Canadian Health Inequalities Data Cube, 2015 edition |
|---|---|
| **Unit of analysis** | Years of life lost per 100,000 population |
| **Calculation** | **Numerator**<br>The sum of differences between age 75 and age of death from avoidable causes |
| | **Denominator**<br>Total mid-year population younger than age 75 |
| | **Methods**<br>(The sum of differences between 75 and age of death from avoidable causes ÷ Total mid-year population younger than age 75) × 100,000 |
| | **Adjustment**<br>Age-standardized using the 2011 Canadian population |
| **Data source / data elements** | Canadian Mortality Database (2009-2011) provided by the Pan-Canadian Health Inequalities Data Cube, 2015 Edition |
| **Levels of comparability/stratification descriptions** | Compared by neighbourhood income quintile (see page 4 for a description) |
| **Limitations / Caveats** | It is generally acknowledged that not all premature deaths can actually be avoided. For example, some deaths from treatable causes may be unavoidable due to late diagnosis or concurrent health problems, while some deaths from preventable causes could be due to unpredictable events against which no protective measures could have been taken.<br><br>An upper age limit of 75 should not imply that some deaths in the population older than 75 could not be avoided. However, multiple comorbidities are common among older adults, making the assignment of a single cause of death challenging. |
| **Timing and frequency of Release** | Occasional data release |

| **HOSPITALIZATIONS FOR AMBULATORY CARE SENSITIVE CONDITIONS (ACSC)** | |
|---|---|
| **Description** | This indicator reports the hospitalization rate for ambulatory care sensitive conditions (ACSCs), which include: asthma, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), diabetes, epilepsy, angina and hypertension for people under age 75.<br><br>A lower rate is better. |
| **Relevance/Rationale** | ACSCs are conditions where appropriate ambulatory care may prevent or reduce the need for hospitalization. Monitoring potentially avoidable hospitalizations for ACSCs can help understand the impact of gaps in outpatient care on the health system. It is especially important to understand the effects these gaps have on those who are most vulnerable. |
| **HQO reporting tool** | Measuring up 2015 |
| **Reporting tools external to HQO** | Ministry of Health and Long-Term Care (MOHLTC) Ministry-LHIN Performance Agreement indicator<br><br>Other indicators in the same family:<br>• The Canadian Institute for Health Information reports a similar indicator except the methodology differs slightly |
| **Unit of analysis** | Per 100,000 population |
| **Calculation** | **Numerator** |

Number of inpatient records from acute care hospitals during each fiscal year with any of ACSCs as the most responsible diagnosis. The ACSCs are defined by most responsible diagnosis ICD-10 codes as follows:

| Condition | ICD-10 codes (DXTYPE = M ) |
|---|---|
| Asthma | J45^ |
| Congestive heart failure and Pulmonary edema | **I50^, J81^ excluding cases with CCI codes for cardiac surgical procedures (see below)** |
| Diabetes | E10.0^, E10.1^, E10.63, E10.64, E10.9^ , E11.0^, E11.1^, E11.63, E11.9^, E13.0^, E13.1^, E13.63, E13.9^, E14.0^, E14.1^, E14.63, E14.9^ ,E11.64,,E13.64,E14.64 |
| Chronic obstructive pulmonary disease | J41^, J42^, J43^, J44^, J47^ <br><br> or <br><br> J10.0,J11.0,J12-J16,J18,J20,J21,J22 when J44^ is also present as a secondary diagnosis |
| Grand mal status and other epileptic convulsions | G40^, G41^ |
| Hypertension | I10.0^, I10.1^, I11^, excluding cases with CCI codes for cardiac surgical procedures |
| Angina | I20^, I23.82^, I24.0^, I24.8^, I24.9^, excluding cases with CCI codes for cardiac surgical procedures* |

| Procedure | CCI codes |
|---|---|
| Cardiac surgical procedures* | J1HA58, 1HA80, 1HA87, 1HB53, 1HB54, 1HB55, 1HB87, 1HD53, 1HD54, 1HD55, 1HH59, 1HH71, 1HJ76, 1HJ82, 1HM57, 1HM78, 1HM80, 1HN71, 1HN80, 1HN87, 1HP76, 1HP78, 1HP80, 1HP82, 1HP83, 1HP87, 1HR71, 1HR80, 1HR84, 1HR87, 1HS80, 1HS90, 1HT80, 1HT89, 1HT90, 1HU80, 1HU90, 1HV80, 1HV90, 1HW78, 1HW79, 1HX71, 1HX78, 1HX79, 1HX80, 1HX83, 1HX86, 1HX87, 1HY85, 1HZ53 rubric (except 1HZ53LAKP), 1HZ55 rubric (except 1HZ55LAKP), 1HZ56, 1HZ57, 1HZ59, 1HZ80, 1HZ85, 1HZ87, 1IF83, 1IJ50, 1IJ55, 1IJ57, 1IJ76, 1IJ86, 1IJ80, 1IK57, 1IK80, 1IK87, 1IN84, 1LA84, 1LC84, 1LD84, 1YY54LANJ |

**Exclusions:**
- Death before discharge
- Patients sign themselves out

| | |
|---|---|
| | • Transfers from another acute care facility<br>• Patient age 75 and older |
| | **Denominator**<br>Annual number of adults aged 0-74 inclusive (Ontario RPDB)<br><br>**Exclusions:**<br>• Birthdate after April 1st of given fiscal year<br>• Death date before April 1st of given fiscal year<br>• Missing sex<br>• Non-Ontario resident (April 1st of given fiscal year)<br>• Age greater than 74 (April 1st of given fiscal year)<br>• Not eligible for OHIP (April 1st of given fiscal year) |
| | **Methods**<br>Numerator/Denominator X100,000 |
| | **Adjustment** *(risk, including age/sex standardization)*<br>Direct adjustment (age & sex) using 1991 Canadian Census population |
| **Data source / data elements** | Discharge Abstract Database (DAD) & Registered Persons Database (RPDB), provided by the Institute for Clinical Evaluative Sciences (ICES) |
| **Levels of comparability/stratification descriptions** | Data are compared by neighbourhood income quintile (see page 4 for a description) |
| **Limitations / Caveats** | |
| **Timing and frequency of Release** | Data updated by ICES at each fiscal year |

## References

i Statistics Canada. Deaths 1991-1999: Definitions (Archived Content). Available from:
http://www.statcan.gc.ca/pub/84f0211x/1999/4067936-eng.htm.
ii Cancer Quality Council of Ontario. Technical Information: Colorectal Cancer Screening Percentage Overdue for Screening:
Technical Specifications. Available from: http://www.csqi.on.ca/cms/One.aspx?portalId=327483&pageId=335155.
iii Canadian Institute for Health Information. Health Indicators 2013: Definitions, Data Sources and Rationale, May 2013. Ottawa,
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