## Admissions for Ambulatory Care Sensitive Conditions

### Full data definition sign-off complete.

<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Ambulatory Care Sensitive Conditions (ACSC): Rate of hospital admissions for health conditions that may be prevented or managed by appropriate primary health care.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Measure (short)</td>
<td>Admissions for Ambulatory Care Sensitive Conditions</td>
</tr>
<tr>
<td>Definition</td>
<td>This indicator measures the acute care hospitalization rate for seven ACSCs among Canadians younger than 75 per 100,000 population. The seven conditions are angina, asthma, chronic obstructive pulmonary disease (COPD), diabetes, epilepsy, heart failure and pulmonary edema, and hypertension. Age Standardized Hospitalization Rate for Alberta residents only (measured per 100,000 population younger than 75 years of age)</td>
</tr>
<tr>
<td>Domain</td>
<td>Health System Performance: Appropriateness</td>
</tr>
<tr>
<td>Type of Measure</td>
<td>Process Measure</td>
</tr>
</tbody>
</table>
| Business Context | AHS Strategic Direction  
AHS 2010 – 2015 Health Plan: Improving Health for All Albertans  
Becoming the Best: 5-Year Health Action Plan |
| Rationale | Appropriate management and control of these chronic conditions in the community could potentially reduce the need for hospitalization, improve efficiency in resource utilization and in turn could have an impact on health spending for chronic illnesses in Canada. |
| Notes for Interpretation | ** See Numerator/Denominator Limitations for list of all limitations regarding calculation of measure. This measure reflects inpatient hospitalizations for Ambulatory Care Sensitive Conditions for residents of Alberta ONLY. |
| Organizational Strategy | Becoming the Best: Alberta's 5-Year Health Action Plan, as released by the Government of Alberta and Alberta Health Services in November 2010, is the organizational strategy linked to this performance measure. Goal 3 of Alberta's Five-Year Health Action Plan is that "Albertans have access to primary health care when they need it, where they need it, from the appropriate provider".  
 strenghtening access to primary health care providers, improving coordination of primary health care with other sectors of the health system, supporting Albertans with addiction and mental health issues, providing information, helping Albertans to prevent and manage chronic disease, such as diabetes, and improving the quality and delivery of primary health care are actions being implemented so as to achieve this goal. Among the expected benefits of implementing these actions are that "fewer people will visit emergency departments for care that could be more appropriately managed at a family doctor's office" and "fewer people will be hospitalized for health conditions that may be prevented or managed for appropriate primary care -- the target is 280 per 100,000 by 2013-14 (2008-09 rate is 308 per 100,000)" (p. 19). That is, the annual provincial result for the performance measure on the aged-standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for admission to hospital per 100,000 population younger than age 75 is being used to measure and report on progress toward achieving Goal 3 of Becoming the Best: Alberta's 5-Year Health Action Plan. |
There is no established benchmark. There are large regional variations in the rate of hospitalization for these conditions exist.

CIHI Health Indicators 2009 Report: CIHI’s Health Indicator 2011\textsuperscript{Core}: pp.88-89
https://secure.cihi.ca/estore/productFamily.htm?locale=en&pf=PFC1635
## Cited References:

CIHI Health Indicators (www.cihi.ca/indicators), http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=indicators_def_health_system_09_e2.3
**Technical Specifications**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Numeric (Rate per 100,000), e.g. 328 Hospitalizations per 100,000 population.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferred Display Format</td>
<td>9999</td>
</tr>
<tr>
<td>Numerator</td>
<td>Total number of acute care hospitalizations for ambulatory care sensitive conditions</td>
</tr>
</tbody>
</table>

**Inclusion Criteria for Numerator**

**Effective April-07-2010**

Based on a list of conditions developed by Billings *et al*[^1], any one most responsible diagnosis code of:

- Grand mal status and other epileptic convulsions
- Chronic obstructive pulmonary diseases
- Asthma
- Heart failure and pulmonary edema
- Hypertension
- Angina
- Diabetes

Any most responsible diagnosis code *(As per CIHI Ambulatory Care Sensitive Conditions Technical Notes)* of:

- **Grand mal status and other epileptic convulsions**
  - ICD-9/9CM: 345
  - ICD-10-CA: G40, G41

- **Chronic obstructive pulmonary diseases (COPD)**
  - Any most responsible diagnosis (MRDx) code of ICD-9/9CM: 491, 492, 494, 496
  - ICD-10-CA: J41, J42, J43, J44, J47
  - MRDx of Acute lower respiratory infection, only when a secondary diagnosis[^2] of J44 in ICD-10-CA or 496 in ICD-9/9CM is also present.
  - ICD-9/9CM: 480 - 486, 466, 487.0
  - ICD-10-CA: J10.0, J11.0, J12-J16, J18, J20, J21, J22

- **Asthma**
  - ICD-9/9CM: 493
  - ICD-10-CA: J45

- **Diabetes**
  - ICD-9: 250.0, 250.1, 250.2, 250.7
  - ICD-9-CA: 250.0, 250.1, 250.2, 250.8
  - ICD-10-CA: E10.0^, E10.1^, E10.63, 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^:

- **Heart failure and pulmonary edema**
  - ICD-9/9CM: 428, 518.4
  - ICD-10-CA: I50, J81
*Excluding cases with cardiac procedures

- **Hypertension**
  - ICD-9/9CM: 401.0, 401.9, 402.0, 402.1, 402.9
  - ICD-10-CA: I10.0, I10.1, I11
*Excluding cases with cardiac procedures

- **Angina**
  - ICD-9: 411, 413
  - ICD-9-CA: 411.1, 411.8, 413
  - ICD-10-CA: I20, I23.82, I24.0, I24.8, I24.9
*Excluding cases with cardiac procedures
## Inclusion Criteria for Numerator (Continued)

- List of cardiac procedure codes\(^2\) for exclusion:
  - CCP: 47\(\wedge\wedge\), 480\(\wedge\wedge\)-483\(\wedge\wedge\), 4891, 4899, 492\(\wedge\wedge\)-495\(\wedge\wedge\), 497\(\wedge\wedge\), 498\(\wedge\wedge\)
  - ICD-9-CM: 336, 35\(\wedge\wedge\), 36\(\wedge\wedge\), 373\(\wedge\wedge\), 375\(\wedge\wedge\), 377\(\wedge\wedge\), 378\(\wedge\wedge\), 3794-3798
  - CCI: 1HA58, 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, 1HX80, 1HX83, 1HX86, 1HX87, 1HY85, 1HZ33 rubric (except 1HZ33LAKP), 1HZ54, 1HZ55 rubric (except 1HZ55LAKP), 1HZ56, 1HZ57, 1HZ59, 1HZ80, 1HZ85, 1HZ87, 1IF83, 1IJ50, 1IJ54GQAZ, 1IJ55, 1IJ57, 1IJ76, 1IJ80, 1IK57, 1IK80, 1IK87, 1IN84, 1LA84, 1LC84, 1LD84, 1HY54LANJ

### Comments:

A new "combination" code for acute lower respiratory infections in patients with Chronic Obstructive Pulmonary Disease (J44.0) was introduced with ICD-10-CA and has no equivalents in ICD-9/ICD-9-CM. According to the Canadian Coding Standards, if COPD patients presented with acute respiratory infections, only J44.0 should be used, but not the other codes from the J44 rubric. This code should be assigned as most responsible diagnosis (MRDx) with pneumonia assigned as a secondary diagnosis. To ensure that COPD patients presented with acute lower respiratory infections are captured and to correct evident erroneous application of the combination code, cases coded with a primary diagnosis of an acute lower respiratory infection and a secondary diagnosis of J44 are also included in the COPD case count.

A unique code for Diabetes with hypoglycaemia (ICD-10-CA: E10.63, E11.63, E13.63, E14.63) does not exist in the ICD-9/ICD-9CM classification systems. This condition was coded using ICD-9 code of 250.7 and ICD-9CM code of 250.8, which also included diabetes with other specific manifestations. However, this should have minimal effect on the comparability of rates coded based on ICD-9 and ICD-10 coding systems.

\(^1\) “Secondary diagnosis” refers to a diagnosis other than most responsible.

\(^2\) Code may be recorded in any position. Procedures coded as cancelled, previous and "abandoned after onset" are excluded.

### Exclusion Criteria for Numerator

- Effective April-07-2010
  - Death Before Discharge
  - Individuals 75 years of age and older

For Heart Failure, Angina and Hypertension hospitalizations, certain cardiac procedure codes recorded in any position are excluded. See CIHI Ambulatory Care Sensitive Conditions Technical Notes for complete list\(^1\).

\(^1\) Code may be recorded in any position. Procedures coded as cancelled, previous and "abandoned after onset" are excluded.

### Data Source(s) for Numerator

Provincial Inpatient (DAD) Abstract Data.

### Refresh Rate of Numerator

Quarterly; approximately 3 to 4 months, lag due to availability of data.
### Admissions for Ambulatory Care Sensitive Conditions (Continued)

<table>
<thead>
<tr>
<th>Denominator</th>
<th>Total year end and fiscal quarter end population under age 75 years for given geography (i.e. AHS Zone, Alberta, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inclusion Criteria for Denominator</strong></td>
<td>Alberta Residents under 75 years of Age.</td>
</tr>
<tr>
<td><strong>Exclusion Criteria for Denominator</strong></td>
<td>Alberta Residents 75 years of Age and older.</td>
</tr>
<tr>
<td><strong>Data Source(s) for Denominator</strong></td>
<td>Alberta Registry Population Data.</td>
</tr>
<tr>
<td><strong>Refresh Rate of Denominator</strong></td>
<td>Annually</td>
</tr>
</tbody>
</table>

**Technical Notes**

The methodology for the calculation of the Ambulatory Care Sensitive Conditions is based on CIHI’s methodology.


**Calculation**

(Total number of acute hospitalizations for ambulatory care sensitive conditions (ACSC) under age 75 years / Total year end or fiscal quarter end population under age 75 years) * 100,000 (Age adjusted using 1991 Canada Census).

Quarter(Q) End:
- Q1, June 30;
- Q2, September 30,
- Q3, December 31,
- Q4 March 31

Fiscal Year End:
- April 1 to March 31.

**Relationship to Other Indicators**

None identified.

**Level of Reporting**

Provincial, AHS Zone

**Frequency of Reporting**

Yearly, Quarterly, Monthly

**Limitations**

- The measure is being reported quarterly. Since Alberta Registry population data is not provided quarterly, rather year end, quarterly population data is estimated using a constant growth assumption. For example:

  If the population at the beginning of the year is 1,000,000 and the population at the end of the year is 2,000,000. The overall population growth over the year would be 1,000,000. If we assume an equal quarterly population growth, the population at the end of Q1 would be $1,000,000 + (1,000,000 \times \frac{1}{4})$ or $1,000,000 + 250,000 = 1,250,000$.

  Therefore, the quarterly population estimates for this example population would be:

  - Q1 = 1,250,000
  - Q2 = 1,500,000
  - Q3 = 1,750,000
  - Q4 = 2,000,000

- Measure depends on availability and completeness of provincial inpatient and Registry Data (Alberta Health Care Insurance Plan Population Data) on an annual basis.
### Document Version History

<table>
<thead>
<tr>
<th>Version</th>
<th>Version Date</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>May 18, 2010</td>
<td>Final version for initial use.</td>
</tr>
<tr>
<td></td>
<td>May 26, 2010</td>
<td>Transfer to final approved version.</td>
</tr>
<tr>
<td>1.1</td>
<td>May 31, 2010</td>
<td>Complete definition.</td>
</tr>
<tr>
<td></td>
<td>June 5, 2010</td>
<td>Clean up formatting.</td>
</tr>
<tr>
<td></td>
<td>June 30, 2010</td>
<td>Add approval statement.</td>
</tr>
<tr>
<td>1.2</td>
<td>December 2, 2010</td>
<td>Update based on joint AHS/AHW discussion, align title and name, update contact information, add signoff page, updated cited references with link to CIHI’s definition.</td>
</tr>
<tr>
<td>1.3</td>
<td>December 20, 2010</td>
<td>Update business context.</td>
</tr>
<tr>
<td>2.0</td>
<td>January 12, 2011</td>
<td>Version ready for signoff.</td>
</tr>
<tr>
<td>2.1</td>
<td>April 15, 2011</td>
<td>Updates with Marie Lyle’s comments</td>
</tr>
<tr>
<td>2.2</td>
<td>May 10, 2011</td>
<td>Reviewed and added comments.</td>
</tr>
<tr>
<td>2.3</td>
<td>June 23, 2011</td>
<td>Update based on joint AHS/AHW discussion, updated to CIHI’s definition for bench mark and technical notes.</td>
</tr>
<tr>
<td>3.0</td>
<td>June 23, 2011</td>
<td>Revised version ready for signoff.</td>
</tr>
<tr>
<td>3.1</td>
<td>August 5, 2011</td>
<td>Full data definition signoff completed.</td>
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