INTRODUCTION

This document provides information on the description, rationale, interpretation, calculations, data sources, limitations and alignments of all the metrics in the HQCA's Provincial Primary Healthcare Panel Report. This information is intended to help improve the understanding and interpretation of the metrics and their presentation in the report.

The HQCA is mandated to promote and improve patient safety and healthcare service quality on a province-wide basis. To fulfill its mandate, the HQCA gathers and analyzes information, monitors the healthcare system, and collaborates with stakeholders to translate that knowledge into practical improvements to health service quality and patient safety.

For more information about the Health Quality Council of Alberta or specific initiatives, please visit www.hqca.ca or telephone 403.297.8162.

PRACTICE CHARACTERISTICS METRICS

The Practice Characteristics section provides data definition information on the following metrics:

- Physician Visits
  - Total Visits
  - Female Visits
  - Male Visits
  - Unique Patients Seen
  - Return visit rate

IDENTIFYING INFORMATION	
Name:	Physician Visits – Total Visits, Unique Patients Seen, Return Visit Rate
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The count of all the visits to the physician grouped by gender, and the number of unique patients that visited the physician.
Rationale:	This measure provides the physician with information on the patients seen by the physician. This information will allow the physician to reflect on what they have done and might want to do differently.
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** A. Total Visits = A count of **all** patients' General Practitioner (GP) [family physician] visits to a physician B. Female Visits = A count of all **female** patients' GP [family physician] visits C. Male Visits = A count of all **male** patients' GP [family physician] visits D. Unique Patients Seen = A count of the **distinct** patients who visited a GP [family physician] E. Return Visit Rate = $\frac{\text{Number of total visits}}{\text{Number of unqiue patients seen}}$ **Type of Measure** Number **Adjustment Applied** None
Population:	**Description** Any patient that is seen by General Practitioner (GP) for which a physician service claim was submitted. The patient does not necessarily have to be the physician's patient (whether confirmed or assigned). **Inclusion Criteria**

	A. All patients for whom a physician submitted a service claim. B. Service claims submitted with recipient gender code F (RCPT_GENDER_CODE = F). C. Service claims submitted with recipient gender code M (RCPT_GENDER_CODE = M). D. Distinct patients for which a service claim was submitted. **Exclusions** ▪ Patients not seen by the physician or patients seen for non-GP related visits. ▪ Duplicate family physician visits based on Patient Health Number (PHN), date, procedure and diagnostic codes, and physician identification are removed. ▪ Visits to General practitioners where the service was delivered in one of the following: o Emergency o Pediatric Emergency **Limitations & Technical Notes** ▪ Patients can have family physician visits to a physician multiple times during the fiscal year. ▪ Not all delivery site fields are populated in the dataset (some are left blank). ▪ An individual patient can have a GP visit multiple times in a day. ▪ Total visits and unique visits will include patients whose gender is unknown or was not declared. As such, a sum of female and male visits may not be equal to total visits.
Data Details	
Data Sources:	Alberta Health Physician Claims.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Physician level.
Quality Statement	
Limitations:	▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The

	data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	

More Information

References

Audit and feedback: effects on professional practice and healthcare outcomes (Review).

Additional Notes

None

Alignments

None

Review Frequency

Yearly

PANEL CHARACTERISTICS METRICS

The Panel Characteristics section provides data definition information on the following metrics:

- Age distribution
- Clinical Risk Grouper (CRG)
    - Average CRG score
    - CRG class rate
- Physician continuity
    - Average physician continuity over time
- Clinic (facility) continuity
    - Average facility continuity over time
- Community material deprivation index
    - Average material deprivation
    - Material deprivation quintile rate
- Community social deprivation index
    - Average social deprivation
    - Social deprivation quintile rate

IDENTIFYING INFORMATION	
Name:	Age Distribution
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The average age and age distribution of a physician patient panel.
Rationale:	The average age and age distribution of a physician patient panel will help in estimating the current and future needs of the physician's panel.
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** A. Average Age = $\frac{\text{Sum of all individual patients' ages in the physician panel}}{\text{Total number of patients in the physician panel}}$ B. Age Distribution percentage = $\left(\frac{\text{Number of patients in } \textbf{age group}}{\text{Total number of patients in the physician panel}}\right) \times 100$ Age groups are defined as patients aged 0 – 5, 6 – 10, 11 – 15, 16 – 20, etc. **Type of Measure** Average; Percentage **Adjustment Applied** None
Denominator:	**Description** Total number of patients in physician submitted confirmed patient list or total number of patients assigned to a physician by the HQCA algorithm. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not in physician panel. **Limitations & Technical Notes**

Numerator:	**Description** A. Average age: Individual patients' ages for the physician panel B. Age distribution: Number of individual patients in a particular age group in the patient panel. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not in physician panel. **Limitations & Technical Notes** Patient age is calculated as the difference between the last day of the fiscal year (e.g. March 13, 2016, for the 2015/16 fiscal year) and the patient's date of birth.
Data Details	
Data Sources:	Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Health Physician Claims.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2012/13 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years).
Comments:	

More Information
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly

IDENTIFYING INFORMATION	
Name:	Clinical Risk Grouper distribution
Short/Other Names:	CRG / Burden of illness
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The average CRG and CRG distribution of a physician patient panel. The CRG was developed by 3M as a tool to assess and classify individual patients according to the severity of chronic and acute illness and the projected costs to the healthcare system. The CRG levels are classified as following: ▪ Level 1 (Healthy) ▪ Level 2 (History of significant acute disease) ▪ Level 3 (Single minor chronic disease) ▪ Level 4 (Minor chronic disease in multiple organ systems) ▪ Level 5 (Single dominant or moderate chronic disease) ▪ Level 6 (Significant chronic disease in multiple organ systems) ▪ Level 7 (Dominant chronic disease in three or more organ systems) ▪ Level 8 (Dominant, metastatic, and complicated malignancies) ▪ Level 9 (Catastrophic conditions)
Rationale:	The average CRG and CRG distribution of a physician patient panel will help in estimating the current needs of the physician's panel.
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** A. Average CRG score = $\frac{\text{Sum of all individual patients' CRG scores}}{\text{Total number of patients in the physician panel}}$ B. CRG percentage = $\left(\frac{\text{Number of patients in } \mathbf{CRG\ level}}{\text{Total number of patients in the physician panel}}\right) \times 100$ **Type of Measure** A. Average B. Percentage **Adjustment Applied** None
Denominator:	**Description** Total number of patients in physician submitted confirmed patient list or total number of patients assigned to a physician by the HQCA algorithm.

	Inclusion Criteria ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not in physician panel. **Limitations & Technical Notes**
Numerator:	**Description** A. Average CRG score: Individual patients' CRG score for the physician panel B. CRG distribution: Number of individual patients in a particular CRG group in the patient panel. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not in physician panel. **Limitations & Technical Notes**
Data Details	
Data Sources:	Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Health Physician Claims. Alberta Health Services Clinical Risk Grouper Data.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2012/13 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level.

	Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years).
Comments:	
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Physician Continuity
Short/Other Name(s):	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of patients' visits to a primary physician out of all family physician visits by the patients in the physician panel.
Rationale:	The physician continuity measure provides an opportunity to assess the impact of relational continuity on different outcomes and more specifically chronic disease management, and preventive service delivery. Hence, this measure provides a tool to better understand the way patients' continuity to family physicians is associated with health services utilization. Physician continuity substantially impacts healthcare services utilization, patient outcomes, patient experience with care, and cost. In general, the greater the continuity, the more positive the outcomes.
Interpretation:	A high percentage indicates that a patient sees their primary physician for family physician visits; a higher percentage is desirable.
Target/Benchmark:	80%
INDICATOR CALCULATION	
Calculation:	**Description** The number of patients' visits to primary physician (assigned or confirmed) divided by the total number of all family physician visits. Physician Continuity (Patient level) = $\left(\frac{\text{Number of patients' visits to primary physician}}{\text{Total number of all family physicians visits by a patient}}\right) \times 100$ **Type of Measure** Rate **Adjustment Applied** None
Denominator:	**Description** The total number of family physician visits by a patient. **Inclusion Criteria** A visit to a physician whose specialty is General practitioner, and the service site is blank or the service is delivered in one of the following places: ▪ Practitioners Office ▪ Ambulatory Care Services

	▪ Long Term Care center **Exclusions** ▪ Duplicate family physician visits based on Patient Health Number (PHN), date, procedure and diagnostic codes, and physicians are removed. ▪ Visits to General practitioners where the service was delivered in one of the following: o Emergency o Pediatric Emergency **Limitations & Technical Notes** Family physician visits include visits within a 3 fiscal year period.
Numerator:	**Description** Number of patient visits to primary physician out of all family physician visits. **Inclusion Criteria** Family physician visits to primary physician. **Exclusions** Family physician visits to other physicians. **Limitations & Technical Notes** Family physician visits include visits within a 3 fiscal year period.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in

	the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	A low continuity might result from patients visiting practices in places such as walk-in clinics.
More Information	
References Towards Optimized Practice's – Evidence Summary: The benefits of continuity in primary care. **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Average Physician Continuity
Short/Other Name(s):	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The average physician continuity of a physician patient panel. The percentage of times that patients' in the panel see the physician as compared to all other family physician visits.
Rationale:	The physician continuity measure provides an opportunity to assess the impact of relational continuity on different outcomes and more specifically chronic disease management, and preventive service delivery. Hence, this measure provides a means to understand how patients' continuity to family physicians is associated with health services utilization and other measures. Physician continuity substantially impacts healthcare services utilization, patient outcomes, patient experience with care, and cost. In general, the greater the continuity, the more positive the outcomes.
Interpretation:	A lower value indicates that patients in the physician panel see other physicians who are not their primary physician; a higher value is desirable.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Sum of all individual patients' physician continuity divided by the total number of patients in the physician panel. Average Physician Continuity = $$\frac{\text{Sum of all individual patients' physician continuity}}{\text{Total number of patients in physician panel}}$$ **Type of Measure** Average **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician.

	▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Duplicate family physician visits based on Patient Health Number (PHN), date, procedure and diagnostic codes, and physician identification are removed. ▪ Patients who were seen by the physician but not assigned to them. **Limitations & Technical Notes** ▪ Panel prediction is most accurate for practices in a single stable location over the past 3 fiscal years and for regular full-time work schedule. ▪ Family physician visits include visits within a 3 fiscal year period.
Numerator:	**Description** Sum of individual patients' physician continuity in physician panel. Individual patients' physician continuity is the percentage of time(s) a patient sees their primary physician compared to other family physician visits. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** None **Limitations & Technical Notes** ▪ Physician continuity is most accurate for practices in a single stable location over the past 3 fiscal years and for regular full-time work schedule. ▪ Family physician visits include visits within a 3 fiscal year period.
Data Details	
Data Sources:	Alberta Health Physician Claims.
Available Data Years:	**Type of Year** Fiscal year [starts April 1, ends March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16

Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	For example, low continuity might be as a result of a physician practicing in a walk-in clinic.
More Information	
References Towards Optimized Practice's – Evidence Summary: The benefits of continuity in primary care. **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Facility Continuity
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percent of time a patient visits a facility (e.g. a clinic) to which they are linked (i.e., assigned by the HQCA algorithm) when visiting a family physician (General Practitioner).
Rationale:	This measure is a proxy for the patient's continuity with their "medical home", and provides an opportunity to assess the impact of management and informational continuity.
Interpretation:	A higher percentage indicates that a patient visits the same facility (e.g. a clinic) more often. So, while a patient may not be seeing their primary physician, they are seeing physicians within the same facility (e.g. seeing physicians in their primary clinic).
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** The number of family physician visits to a primary care facility [assigned by the HQCA algorithm] divided by the total number of all facility visits. A. Facility Continuity (patient level) = $\left(\frac{\text{Number of visits to assigned primary care facility}}{\text{Total number of all primary care facility visits}}\right) \times 100$ B. Average Facility Continuity (physician level) = $\frac{\text{Sum of all individual patients' facility continuity}}{\text{Total number of patients in physician panel}}$ **Type of Measure** A. Rate B. Average **Adjustment Applied** None
Denominator:	**Description** The total number of primary care facility visits by a patient. **Inclusion Criteria** A visit to a physician whose specialty is General practitioner in a registered physical facility.

	Exclusions ▪ Duplicate family physician visits based on Patient Health Number (PHN), date, procedure and diagnostic codes, and physician identification are removed. ▪ Visits to General practitioners in a registered physical facility, where the service was delivered in one of the following: o Emergency o Pediatric Emergency **Limitations & Technical Notes** Family physician visits in a registered facility include visits within a 3 fiscal year period.
Numerator:	**Description** Number of patient visits to family physician in primary facility [assigned] out of all primary care facility visits. **Inclusion Criteria** Family physician visits in primary (assigned) facility. **Exclusions** Family physician visits in other facilities. **Limitations & Technical Notes** Family physician visits in a registered facility include visits within a 3 fiscal year period.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.

Quality Statement	
Limitations:	▪ This measure does not take into account patient interaction with other multidisciplinary teams in the facility. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	Low continuity may be as a result of patients visiting locations such as walk-in clinics.
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Community Material Deprivation Index
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The material deprivation index is one component of the Deprivation Index. It reflects the deprivation of goods and conveniences. The material deprivation index includes the following indicators: ▪ The proportion of people aged 15 years and older with no high school diploma (SCOLAR). ▪ The employment/population ratio of people aged 15 years and older (EMPLOI). ▪ The average income of people aged 15 years and older (REVENU). The index is ranked and divided into quintiles (Quintile 1 to 5), each representing 20 per cent of the population.
Rationale:	There are strong and growing indications that factors such as living and working conditions are crucially important for a healthy population. Material deprivation is one of several key determinants of health. As such, measuring the material deprivation of a physician patient panel will help the physician to better understand and deal with the needs of their patient panels.
Interpretation:	Quintile 1 (Q1) describes the most privileged population, and Quintile 5 (Q5) describes the least privileged population.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** A. Average Material Deprivation = $\frac{\text{Sum of individual patients' material deprivation scores}}{\text{Total number of patients in physician panel}}$ B. Material Deprivation Quintile Rate = $\left(\frac{\text{Number of patients in a particular quintile}}{\text{Total number of patients in physician panel}}\right) \times 100$ **Type of Measure** A. Average B. Rate **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL)

	submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** A. The sum of all individual patients' material deprivation scores. B. The number of patients in a particular material deprivation quintile. **Inclusion Criteria** Patients with valid Alberta postal codes. **Exclusions** None **Limitations & Technical Notes** It is assumed that postal codes are linkable across databases.
Data Details	
Data Sources:	2011 Canadian Census. Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2012/13 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.

Quality Statement	
Limitations:	▪ The Deprivation Index is a measure of the socio-economic conditions seen at the neighbourhood level, not an individual measure of socio-economic conditions. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years).
Comments:	

More Information

References

Public Health Agency of Canada - Key Determinants of Health.
Pampalon, R., Hamel, D., Gamache, P., & Raymond, G. (2009). A deprivation index for health planning in Canada. Chronic Dis Can, 29(4), 178-91.

What makes Canadians healthy? – Article.

Additional Notes

None

Alignments

None

Review Frequency

Yearly

IDENTIFYING INFORMATION	
Name:	Community Social Deprivation Index
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The social deprivation index is one component of the Deprivation Index. It reflects the deprivation of relationships among individuals in the family, the workplace, and the community. The social deprivation index includes the following indicators: ▪ The proportion of individuals aged 15 years and older, living alone (SEULES). ▪ The proportion of individuals aged 15 years and older, who are separated, divorced or widowed (S_D_V). ▪ The proportion of single-parent families (F_MONO). The index is ranked and divided into quintiles (Quintile 1 to 5), each representing 20 per cent of the population.
Rationale:	There are strong and growing indications that factors such as living and working conditions are crucially important for a healthy population. Social deprivation is one of several key determinants of health. As such, measuring the social deprivation of a physician patient panel will help the physician to better understand and deal with the needs of their patient panels.
Interpretation:	Quintile 1 (Q1) describes the most privileged population, and Quintile 5 (Q5) describes the least privileged population.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** A. Average Social Deprivation = $\frac{\text{Sum of individual patients' social deprivation scores}}{\text{Total number of patients in physician panel}}$ B. Social Deprivation Quintile Rate = $\left(\frac{\text{Number of patients in a particular quintile}}{\text{Total number of patients in physician panel}}\right) \times 100$ **Type of Measure** A. Average B. Rate **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL)

	submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** A. The sum of all individual patients' social deprivation scores. B. The number of patients in a particular social deprivation quintile. **Inclusion Criteria** Patients with valid Alberta postal codes. **Exclusions** None **Limitations & Technical Notes** It is assumed that postal codes are linkable across databases.
Data Details	
Data Sources:	2011 Canadian Census. Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2012/13 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.

Quality Statement	
Limitations:	▪ The Deprivation Index is a measure of the socio-economic conditions seen at the neighbourhood level, not an individual measure of socio-economic conditions. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years).
Comments:	

More Information

References

Public Health Agency of Canada - Key Determinants of Health.

Pampalon, R., Hamel, D., Gamache, P., & Raymond, G. (2009). A deprivation index for health planning in Canada. Chronic Dis Can, 29(4), 178-91.

What makes Canadians healthy? – Article.

Additional Notes

None

Alignments

None

Review Frequency

Yearly

PREVENTIVE CARE AND IMAGING METRICS

The preventive care and imaging section provides data definition information on the following metrics:

- Diabetes screening
- Plasma lipid profile screening
- Colorectal cancer screening
- Papanicolaou tests
- Breast cancer screening
- Bone mineral density (DEXA) scan
- Lumbar spine scans
- Influenza immunization

IDENTIFYING INFORMATION	
Name:	Diabetes Screening
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of non-diabetic patients in the physician panel who received a diabetes screening test.
Rationale:	Diabetes is a health problem that imposes significant burden on the population and health system. It is expected that treatment after early detection will yield benefits superior to those obtained when treatment is delayed. Thus, providing asymptomatic screening information to physicians will encourage them to screen individuals who are likely to have diabetes.
Interpretation:	A higher rate implies more eligible patients in the physician panel are screened.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Diabetes screening rate = $\left(\frac{\text{Number of eligible patients with a diabetes screening}}{\text{Total number of eligible patients in physician panel}}\right) \times 100$ **Type of Measure** Rate **Adjustment Applied** None
Denominator:	**Description** The number of eligible patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patients 40 years or older. ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Patients aged younger than 40 years. ▪ Diabetic patients identified in the episode specific disease category (EDC) aggregate groups in the HQCA's dynamic proxy disease registry. ▪ Patients not assigned to physician by the HQCA algorithm or patients not

	on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** An eligible patient is an asymptomatic patient screened for diabetes. A patient is eligible if they meet the inclusion criteria outlined below. **Inclusion Criteria** ▪ Patients 40 years or older. ▪ Diabetes screening is identified by the following lab test codes, and ICD-9 or ICD-10 diagnostic codes: o Lab test codes [Order Test Code]: - HBA1C (Hemoglobin A1c). - GLUF (Glucose fasting). o ICD-9 or ICD-10 diagnostic codes: - V77.1 (Screening for Diabetes Mellitus). - Z13.1 (Encounter for Screening for Diabetes Mellitus). **Exclusions** ▪ Diabetic patients identified in the episode specific disease category (EDC) aggregate groups in the HQCA's dynamic proxy disease registry. ▪ Patients aged younger than 40 years. **Limitations & Technical Notes** ▪ The number of eligible patients is based on 5 years of past data. ▪ Each patient is counted once regardless of the number of tests performed in a given time period.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. AHS Laboratory Data.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2008/09 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.

Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	
More Information	

References
None

Additional Notes
None

Alignments
- Canadian Task Force on Preventive Health Care (CTFPHC) recommendation:
  - Screen adults at low to moderate risk of diabetes who are 40 years of age or older and any adults who are at high risk of diabetes every 3 – 5 years.
  - http://canadiantaskforce.ca/ctfphc-guidelines/2012-type-2-diabetes/clinician-summary
- Alberta Screening & Prevention Initiative (ASaP)

Review Frequency
Yearly

IDENTIFYING INFORMATION	
Name:	Plasma Lipid Screening
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of eligible patients in the physician panel who received a plasma lipid screening test.
Rationale:	Lipid profile screening is used to determine the approximate risks for cardiovascular disease in healthy adults. Thus, providing screening information to physicians will encourage them in their screening activities to identify early onset of cardiovascular disease.
Interpretation:	A higher rate implies more eligible patients in the physician panel are screened.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Plasma lipid screening rate = $\left(\frac{\text{Number of eligible patients with a lipid screening}}{\text{Total number of eligible patients in physician panel}}\right) \times 100$ **Type of Measure** Rate **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patients aged between 40 and 74 years. ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Patients younger than 40 years or older than 74 years. ▪ Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**

Numerator:	**Description** An eligible patient is any patient who had a lab test for either plasma lipid profile or cholesterol tests. A patient is eligible if they meet the inclusion criteria outlined below. **Inclusion Criteria** ▪ Patients aged between 40 and 74 years. ▪ Plasma lipid screening is identified by the following lab test codes: o Lab test codes: - 105763471.0, 105763471.00 (Non-HDL Cholesterol). - 316886.00 (Lipase). - CHDLR (Cholesterol HDL Ratio). - CHOL, CHOL2, CHOLB (Cholesterol). - HDL (High Density Lipoproteins Cholesterol). - LDL (Low Density Lipoproteins Cholesterol). - LIP (Lipase). - NHDL, NHDLC, NONHDL (Non-HDL Cholesterol). - RATIO (Cholesterol/HDL Ratio). - TRIG, TRIGB (Triglycerides). **Exclusions** ▪ Patients younger than 40 years or older than 74 years. **Limitations & Technical Notes** ▪ The number of eligible patients is based on 5 years of past data. ▪ Each patient is counted once regardless of the number of tests performed in a 5 year time period.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. AHS Laboratory Data.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16

Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	
More Information	

References

None

Additional Notes

None

Alignments

- Canadian Cardiovascular Society recommendation:
  - Physicians should screen all patients 40 years or older.
  - http://www.onlinecjc.ca/article/S0828-282X(16)30732-2/pdf.
- Alberta Screening & Prevention Initiative (ASaP).

Review Frequency

Yearly

IDENTIFYING INFORMATION	
Name:	Colorectal Cancer Screening
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of eligible patients in physician panel who received a colorectal cancer screening.
Rationale:	Providing physician with their colorectal cancer screening rates will encourage them to screen their eligible patients. Research has shown that patients who have regular stool test are more likely to survive colorectal cancer. Early detection may also mean less treatment and less time spent recovering.
Interpretation:	A higher rate implies more eligible patients in the physician panel are screened.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Colorectal screening rate = $\left(\frac{\text{Number of eligible patients who completed colorectal cancer screening}}{\text{Total number of eligible patients in physician panel}}\right) \times 100$ **Type of Measure** Rate **Adjustment Applied** None
Denominator:	**Description** The number of eligible patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patients between 50 and 74 years. ▪ Patient list specifically submitted by physician. Patients who were assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Patients aged younger than 50 years or older than 74 years. ▪ Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**

Numerator:	**Description** An eligible patient is an asymptomatic patient screened for colorectal cancer. A patient is eligible if they had a laboratory test for fecal immunochemical test (FIT) within a 2 year period or colonoscopy within a 10 year period or a flex sigmoidoscopy within a 5 year period. **Inclusion Criteria** ▪ Patients between 50 and 74 years. ▪ Colorectal cancer screening is identified by the following lab test codes, and ICD-9 or ICD-10 diagnostic codes: o Fecal immunochemical test (FIT), lab test codes: - 20311706.00, 49171324.00 (Fecal Immunochemical Test) - FIT (Fecal Immunochemical Test) - FITA (Fecal Immunochemical Test) o Colonoscopy is identified by the procedure (billing) codes below: - 01.22 (Other non-operative colonoscopy) - 01.22A (Other non-operative colonoscopy for screening high risk patients) - 01.22B (Other non-operative colonoscopy for screening moderate risk patients) - 01.22C (Other non-operative colonoscopy for screening average risk patients) - 01.16A (Small bowel capsule endoscopy) - 01.16B (Balloon [single or double] enteroscopy, rectal route) o Flex Sigmoidoscopy is identified by the procedure (billing) codes below: - 01.24B (Flexible proctosigmoidoscopy) - 01.24BA (Flexible proctosigmoidoscopy for screening of patients considered to be of high risk for colon cancer due to family history) - 01.24BB (Flexible proctosigmoidoscopy for screening of patients considered to be of high risk for colon cancer) **Exclusions** Patients aged younger than 50 years or older than 74 years. **Limitations & Technical Notes** ▪ The number of eligible patients is based on : o 2 years of past lab data for fecal immunochemical test. o 10 years of past claims data for colonoscopy. o 5 years of past claims data for flex sigmoidoscopy.

	▪ Each patient is counted once regardless of the number of tests performed in a given time period.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. AHS Laboratory Data.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2008/09 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	
More Information	
References Canadian Cancer Society - website. **Additional Notes** None **Alignments** ▪ Canadian Task Force on Preventive Health Care (CTFPHC) recommendation: o Screen adults who are between 50 and 74 years for colorectal cancer. o http://canadiantaskforce.ca/ctfphc-guidelines/2015-colorectal-cancer/clinician-summary.	

- Alberta Screening & Prevention Initiative (ASaP).
- Alberta Health Services Cancer Screening Program.

Review Frequency
Yearly

IDENTIFYING INFORMATION	
Name:	Papanicolaou Test
Short/Other Names:	Pap Test / Cervical cancer screening
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of eligible women in a physician patient panel that completed at least one pap test within a 42-month period.
Rationale:	Meant for self-reflection and to encourage physicians to assess their screening activities in order maximize appropriate screening of their patient panels, and to identify early onset of cervical cancer. Early detection may also mean less treatment and less time spent recovering.
Interpretation:	A higher rate implies more eligible female patients in the physician panel are screened.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Pap test rate = $\left(\frac{\text{Number of eligible women who completed at least one pap test}}{\text{Total number of eligible women in physician panel}}\right) \times 100$ Pap test rates are broken into the following age groups: ▪ 18 – 24 ▪ 25 – 69 ▪ 70 and older **Type of Measure** Rate **Adjustment Applied** None
Denominator:	**Description** The number of eligible women in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Women in the following age groups: o 18 – 24 o 25 – 69 o 70 and older ▪ Patient list specifically submitted by physician.

	▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Women younger than 18 years. ▪ Women who had a complete hysterectomy. ▪ Women in colposcopy follow up. ▪ Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The total number of screen-eligible women who have completed at least one Pap test in a given 42-month reporting period. **Inclusion Criteria** ▪ Women in the following age groups: o 18 – 24 o 25 – 69 o 70 and older ▪ Identifying pap tests: o Pap test (SPAP and CPAP) identified in the Alberta Cervical Cancer Screening Program (ACCP) database. o Colposcopy exams identified in ACCP's Colposcopy database. **Exclusions** ▪ Women younger than 18 years. ▪ Women with cervical cancer and who have had pap tests identified as screening services. ▪ Women who had a complete hysterectomy. **Limitations & Technical Notes** Each woman is counted once regardless of the number of pap tests performed in a 42-month period.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Cervical Cancer Screening Program (ACCSP) Data.

Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2008/09 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ Some women who are not currently considered eligible for pap tests are not currently removed from the denominator; data of women with hysterectomy in not complete. This leads to an underestimated Pap test screening rate. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	
More Information	

References

Canadian Cancer Society - website.

Additional Notes

None

Alignments

- For this measure, the HQCA has aligned with Alberta Health Services Cancer Screening Program (AHSCSP) in relation to screening timeframes. This is due to the fact that AHSCSP is responsible for sending out notifications to patients when they are due for screening.
- Alberta Cervical Cancer Screening Program
    - Choosing Wisely Canada (CWC) recommendation:
    - Do not screen women with Pap smears if under the age of 21 or over the age of 69.

Review Frequency
Yearly

IDENTIFYING INFORMATION	
Name:	Mammogram Screening
Short/Other Names:	Breast cancer screening
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of eligible women in a physician patient panel that completed at least one mammogram screening within a 30-month period.
Rationale:	Providing screening information to physicians will encourage them in their screening activities to identify early onset of breast cancer. Early detection may also mean less treatment and less time spent recovering.
Interpretation:	A higher rate implies more eligible female patients in the physician panel are screened.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Mammogram screening rate = $\left(\frac{\text{Number of eligible women who completed at least one screening mammogram}}{\text{Total number of eligible women in physician panel}}\right) \times 100$ **Type of Measure** Rate **Adjustment Applied** None
Denominator:	**Description** The number of eligible women in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Women aged between 50 and 74 years. ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Women younger than 50 years and older than 74 years. ▪ Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician.

	Limitations & Technical Notes
Numerator:	**Description** The total number of eligible women who have completed at least one mammogram in a given 30-month period. **Inclusion Criteria** ▪ Women aged between 50 and 74 years. ▪ Identifying mammography procedure codes: o X27 (Mammography – both breast). o X27 D (Screening mammography – age 50-74 years inclusive). **Exclusions** ▪ Women younger than 50 years and older than 74 years. ▪ Women with an invasive breast cancer who have had mammograms identified as screening services. **Limitations & Technical Notes** Each woman is counted once regardless of the number of mammograms performed in a 30-month period.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Breast Cancer Screening Program (ABCSP) Data.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2008/09 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ Except for screening mammograms, the rest of the mammography services are identified as diagnostic services. ▪ All calculations include only patients who are currently listed as '**Active**' in

	the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	

More Information

References

Canadian Cancer Society - website.

Additional Notes

None

Alignments

- For this measure, the HQCA has aligned with Alberta Health Services Cancer Screening Program (AHSCSP) in relation to screening timeframes. This is due to the fact that AHSCSP is responsible for sending out notifications to patients when they are due for screening.
- Alberta Breast Cancer Screening Program

Review Frequency

Yearly

IDENTIFYING INFORMATION	
Name:	Bone Mineral Density Scan
Short/Other Names:	Dual-energy absorptiometry (DEXA) scan
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The count of the number of times that patients in physician patient panel received a DEXA scan, and the number of times that these scans occurred multiple times.
Rationale:	DEXA scans are commonly used to diagnose osteoporosis and access a patient's risk of developing fractures.
Interpretation:	Having a large number of patients scanned repeatedly within a 2 year period might encourage a physician to reflect on or revisit their approach to scanning.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Single and Multiple DEXA scans are reported for 3 different age groups: ▪ 0 – 49 years. ▪ 50 – 64 years. ▪ 65 or more years. ▪ Single DEXA Scans = Number of patients with 1 DEXA scan within a 2 year period in physician panel ▪ Multiple DEXA Scans = Number of patients with 2 or more DEXA scans within a 2 year period in physician panel **Type of Measure** Number **Adjustment Applied** None
Population:	**Description** Any patient in the physician patient. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. Any patient with a procedure (billing) code of X128 (Bone mineral content determination dual photon absorptiometry with or without vertebral fracture assessment [VFA]) is said to have had a DEXA scan. **Inclusion Criteria** ▪ Procedure code X128.

	Exclusions None **Limitations & Technical Notes** The number of scans is calculated based on 3 years of past data. Multiple scans are calculated as any other DEXA scan less than 2 years (between 0 and 730 days) of the first scan.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	
More Information	
References DEXA scans Frequently Asked Questions. **Additional Notes** None **Alignments** ▪ Choosing Wisely Canada (CWC) recommendation:	

- Do not repeat DEXA scans more often than every 2 years.

- Alberta Physician Learning Program (PLP):
  - Knowledge transfer.

Review Frequency

Yearly

IDENTIFYING INFORMATION	
Name:	Lumbar Spine Scans
Short/Other Names:	Lower back scan
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The number of times that eligible patients in the physician panel received lumbar spine scans. These scans are grouped using the common procedure and examination list (CPEL) modality code.
Rationale:	Lower back pain is one of the most common reasons for all family physician visits. Research has found evidence of substantial overuse of lumbar spine MRI scans. Reporting this measure offers physicians an opportunity to self-reflect on their practice habits.
Interpretation:	Having a disproportionate number of patients imaged compared to their peers may encourage a physician to reflect on or revisit their approach to lower-back imaging.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Lumbar spine scans = Number of eligible patients in physician panel with lumbar spine scans [Grouped by CPEL Modality Code] **Type of Measure** Number **Adjustment Applied** None
Population:	**Description** Any patient in the physician patient with a lumbar spine scan. Lumbar spine scans are identified by Common Procedure and Examination List (CPEL) catalogue codes as indicated below. The number of scans are grouped according to the following CPEL modality codes: ▪ CT [Computed Tomography] ▪ MR [Magnetic Resonance Imaging] **Inclusion Criteria** ▪ Patients 18 years and older. ▪ CPEL catalogue codes: o 300500 (CT Lumbar Spine, Nonenhanced). o 510160 (MR L-spine WITHOUT Contrast).

	Exclusions Patients younger than 18 years. **Limitations & Technical Notes** Lumbar spine scan counts may be under reported as only scans completed in Alberta Health Services facilities are available (Private clinics not included).
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Health Services Diagnostic Imaging data.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2015/16 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	
More Information	
References Overuse of Magnetic Resonance Imaging - Article. **Additional Notes** None **Alignments** ▪ Choosing Wisely Canada (CWC) recommendations: o Do not do imaging for lower back pain unless red flags are present.	

- Do not order lumbosacral (lower back) spinal imaging in patients with non-traumatic low back pain who have no red flags/pathologic indicators.

- Alberta Physician Learning Program (PLP):
  - Knowledge transfer
- Alberta Health Services:
  - DIMR and the Diagnostic Imaging Shared Data Model project.

Review Frequency

Yearly

IDENTIFYING INFORMATION	
Name:	Influenza Immunization
Short/Other Names:	Flu vaccination
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of patients in the physician panel who, in the past year, received an influenza immunization.
Rationale:	Influenza immunization has many benefits to the patient including but not limited to: ▪ reduces the risk of flu-related hospitalizations ▪ acts as an important preventive tool for patients with chronic health conditions ▪ helps protect women during and after pregnancy Thus, providing influenza immunization rates to physicians will encourage them to promote these benefits to their patients.
Interpretation:	A higher rate implies more patients in the physician panel are immunized.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Influenza immunization rate = $\left(\frac{\text{Number of patients immunized against influenza}}{\text{Total number of patients in physician panel}}\right) \times 100$ **Type of Measure** Rate **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician.

	Limitations & Technical Notes
Numerator:	**Description** The total number of patients that received a flu (influenza) vaccine from a physician, pharmacist or Alberta Health Services public health. **Inclusion Criteria** Patients with influenza immunization records. **Exclusions** **Limitations & Technical Notes** ▪ Only patients with immunization records are included in the Alberta Immunization Registry Dataset. ▪ Immunization given by other practitioners is not included as individual-level data is not provided. ▪ Alberta Health Services immunizations are recorded at aggregate levels.
Data Details	
Data Sources:	▪ Alberta Immunization Registry[1] o Immunization / Adverse Reactions to Immunization System (Imm / ARI) o Pharmacy Data through Alberta Blue Cross (Publically funded influenza immunizations) o Physician Billing (Through the Supplemental Enhance Event System Database [SESE]) ▪ Alberta Health Physician Claims. ▪ Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2016/17 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel

[1] This data includes influenza immunization information from pharmacists, physicians and Alberta Health Services public health.

	assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	
More Information	

References

Alberta Health - Flu-facts.

Alberta Health Immunization Policy - Website.

Additional Notes

None

Alignments

Alberta Health Immunization Policy

Review Frequency

Yearly

CHRONIC CONDITIONS AND FREQUENT DIAGNOSES METRICS

The Chronic Conditions and Frequent Diagnoses section provides data definition information on the following metrics:

- Chronic diseases – group A
- Mental health conditions
- Comprehensive annual care plans
- Diabetics with Chronic Kidney Disease diagnosis
- Drug therapy for chronic kidney disease (CKD) in adults with diabetes
- Top 10 treated prevalence

IDENTIFYING INFORMATION	
Name:	Chronic Diseases – Group A
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of a physician's patient panel that have been diagnosed with chronic conditions. The chronic conditions reported here are from Group A of the Health Service Code 03.04J (Development, documentation and administration of a comprehensive annual care plan for a patient with complex needs). The number of patients for each chronic disease is based on the prevalence of aggregated episode specific disease category (EDC) codes from the Clinical Risk Grouper (CRG) for the respective populations.
Rationale:	Chronic diseases are the largest drivers of healthcare costs in Alberta; they are the most common reason for emergency department visits, hospitalizations and family physician visits. Providing physicians with the percentages of patients in their panel who have a predominant chronic disease (e.g. hypertension) will help physicians in their chronic disease management efforts. Effective management of chronic conditions is therefore critical to the health of Albertans, and the healthcare system as a whole.
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of patients with a particular chronic disease = $\left(\frac{\text{Number of patients with [a particular chronic disease]}}{\text{Total number of patients in physician panel}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel).

	Exclusions Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The number of patients in the physician patient panel who have one of the following chronic conditions: ▪ Hypertension ▪ Diabetes Mellitus ▪ Chronic Obstructive Pulmonary Disease (COPD) ▪ Asthma ▪ Heart Failure ▪ Angina and Ischemic Heart Disease **Inclusion Criteria** Chronic conditions are identified by 3M's CRG tool and its episode disease specific category (EDC) aggregate codes. Hypertension: ▪ EDC aggregate code 140 Diabetes Mellitus: ▪ EDC aggregate code 105 Chronic Obstructive Pulmonary Disease (COPD): ▪ EDC aggregate code 80 Asthma: ▪ EDC aggregate code 40 Heart Failure: ▪ EDC aggregate code 94 Angina and Ischemic Heart Disease: ▪ EDC aggregate code 34 **Exclusions** Patients who do not have a particular chronic condition. **Limitations & Technical Notes** Patients can have more than one chronic condition, and as such will be counted towards the conditions they have.
Data Details	

Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Health Services Clinical Risk Grouper Data (Analytics, formerly DIMR).
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2011/12 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	
More Information	
References Report of the Auditor General of Alberta - HEALTH-CHRONIC DISEASE MANAGEMENT. Comprehensive Annual Care Plan - form. **Additional Notes** None **Alignments** Episode disease category (EDC) codes come from Alberta Health Services Analytics. **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Mental Health Conditions
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of a physician's patient panel that has been diagnosed with specific mental health conditions. The number of patients for each mental health condition is based on the prevalence of aggregated episode specific disease category (EDC) codes from the Clinical Risk Grouper (CRG) for the respective populations.
Rationale:	Chronic diseases are the largest drivers of healthcare costs in Alberta; they are the most common reason for emergency department visits, hospitalizations and family physician visits. Providing physicians with the percentages of patients in their panel who have a particular mental health condition will help physicians in their mental health conditions management efforts. Effective management of mental health conditions is therefore critical to the health of Albertans, and the healthcare system as a whole.
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of patients with a particular chronic disease = $\left(\frac{\text{Number of patients with [a particular mental health condition]}}{\text{Total number of patients in physician panel}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list

	submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The number of patients in the physician patient panel who have one of the following mental health conditions: ▪ Alzheimer's disease and other dementias ▪ Attention Deficit Hyperactivity Disorders (ADHD) ▪ Bi-polar disorder ▪ Schizophrenia ▪ Depressive and/or other psychoses ▪ Acute stress and anxiety diagnoses **Inclusion Criteria** Mental health conditions are identified by 3M's CRG tool and its episode specific disease category (EDC) aggregate codes. Alzheimer's disease and other dementias: ▪ EDC Aggregate code 29 Attention Deficit Hyperactivity Disorders (ADHD): ▪ EDC Aggregate code 41 Bi-polar disorder: ▪ EDC Aggregate code 44 Schizophrenia: ▪ EDC Aggregate code 230 Depressive and/or other psychoses: ▪ EDC Aggregate code 103 Acute stress and anxiety diagnoses: ▪ EDC Aggregate code 25 **Exclusions** Patients who do not have a particular mental health condition. **Limitations & Technical Notes** Patients can have more than one mental health condition, and as such will be counted towards the conditions they have.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.

	Alberta Health Services Clinical Risk Grouper Data (Analytics, formerly DIMR).
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2011/12 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	
More Information	
References None **Additional Notes** None **Alignments** Episode disease category (EDC) codes come from Alberta Health Services Analytics. **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Comprehensive Annual Care Plans
Short/Other Names:	CACP
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of a physician's patient panel that received a comprehensive annual care plan. Comprehensive annual care plan visits consist of the development, documentation and administration of a comprehensive annual care plan for a patient with complex needs.
Rationale:	Effective management of chronic conditions is critical to the health of Albertans, and the healthcare system as a whole. Reporting this measure offers physicians an opportunity to self-reflect on their practice habits towards chronic disease management.
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of eligible patients with a comprehensive annual care plan = $\left(\frac{\text{Number of patients eligible for CACP who received CACP}}{\text{Total number of patients eligible for CACP in physician panel}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel who are eligible for CACP. Physician patient panel is either assigned by the HQCA algorithm or a confirmed patient list (CPL) is submitted by the physician. A patient is CACP eligible if they: ▪ Have two or more Group A conditions. ▪ Have one or more Group A conditions' and one or more Group B conditions. Group A conditions: ▪ Hypertension ▪ Diabetes ▪ Asthma ▪ COPD

	▪ Angina and ischemic heart disease ▪ Congestive Heart Failure (CHF) ▪ Chronic renal failure Group B conditions: ▪ Mental health conditions ▪ Obesity ▪ Addictions ▪ Tobacco use **Inclusion Criteria** Patient list specifically submitted by physician. Patients who were assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The number of patients in the physician patient panel who received a comprehensive annual care plan (CACP). Comprehensive annual care plans consist of development, documentation and administration of a comprehensive annual care plan for a patient with complex needs. **Inclusion Criteria** ▪ CACP eligible as described in the Denominator above. ▪ Health service code 03.04J claimed by physician. **Exclusions** **Limitations & Technical Notes** Each patient is limited to one CACP per year.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31]

	First Available Year 2011/12 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	
More Information	

References

Report of the Auditor General of Alberta - HEALTH-CHRONIC DISEASE MANAGEMENT.

Comprehensive Annual Care Plan - form.

Additional Notes

None

Alignments

None

Review Frequency

Yearly

IDENTIFYING INFORMATION	
Name:	Diabetics with Chronic Kidney Disease diagnosis
Short/Other Names:	Diabetics with CKD diagnosis
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of diabetic patients in a physician panel who had a chronic kidney disease (CKD) diagnosis based on an Albumin/Creatinine Ratio (ACR) test.
Rationale:	Chronic diseases are the largest drivers of healthcare costs in Alberta; they are the most common reason for emergency department visits, hospitalizations and family physician visits. Chronic diseases also serve as risk factors for further chronic diseases (e.g. diabetes being a major risk factor for chronic kidney disease). The presence of comorbidities further exacerbates the healthcare resources complex patients require. Therefore, providing physicians with the percentages of patients in their panel who have both diabetes and chronic kidney disease could assist physicians in determining their resource requirements and how they manage their patients.
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of diabetic patients with a CKD diagnosis = $\left(\frac{\text{Number of diabetic patients with an ACR test}}{\text{Total number of diabetic patients in physician panel}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of diabetic patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Diabetic patients identified through 3M's CRG tool and its episode disease category aggregate codes (over time). ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions**

	Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The number of diabetic patients in the physician patient panel who had urine ACR (albumin creatinine ratio) test in the last year. **Inclusion Criteria** ▪ Diabetic patients identified through 3M's CRG tool and its episode disease category aggregate codes. ▪ Chronic Kidney Disease diagnosis. **Exclusions** ▪ Non-diabetic patients. **Limitations & Technical Notes** Patients with chronic kidney disease who did not have a chronic kidney diagnosis in the last year were not included.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Health Services CRG EDC Aggregate Data. AHS Laboratory Data.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2016/17 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ CRG EDC aggregate data may not identify all diabetics or may misidentify

	patients with questionable diagnoses. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	The data is diagnostic specific.
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Drug therapy for chronic kidney disease (CKD) in adults with diabetes
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of diabetic patients with an Albumin/Creatinine Ratio (ACR) test > 30 mg/g (or > 3 mg/mmol) who were dispensed an ACE (Angiotensin-Converting Enzyme) inhibitor or an ARB (Angiotensin II Receptor Blocker).
Rationale:	Drug therapy is recommended for all adults with diabetes who have an abnormal urine albumin/creatinine ratio (ACR).
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of diabetic patients with CKD on drug therapy = $\left(\frac{\text{Number of diabetic patients with an abnormal ACR who were dispensed an ACE inhibitors or an ARB}}{\text{Total number of diabetic patients with an abnormal ACR in physician panel}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of diabetic patients with an ACR > 30 mg/g (or 3 mg/mmol) in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Diabetic patients identified through the CRG EDC aggregate codes. ▪ Diabetic patients with an ACR > 30 mg/g (or > 3 mg/mmol). ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Diabetic patients with an ACR < 30 mg/g (or < 3 mg/mmol). ▪ Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician.

	Limitations & Technical Notes
Numerator:	**Description** The number of diabetic patients in the physician patient panel who were dispensed at least one ACE inhibitor or at least one ARB. ACE inhibitor and ARB prescriptions are identified using the American Hospital Formulary Service (AHFS)[2] Pharmacologic-Therapeutic drug classification system. The following are classified as ACE inhibitors or ARB: ▪ 24:32.04 (Angiotensin-Converting Enzyme inhibitors). ▪ 24:32.08 (Angiotensin II Receptor Blockers). **Inclusion Criteria** ▪ Diabetic patients with an ACR < 30 mg/g (or < 3 mg/mmol). ▪ Diabetic patients who dispensed at least one ACE inhibitor or at least one ARB. ▪ Chronic Kidney Disease diagnosis. **Exclusions** ▪ Diabetic patients with an ACR < 30 mg/g (or < 3 mg/mmol). ▪ Diabetic patients who did not dispensed an ACE inhibitor on an ARB. **Limitations & Technical Notes**
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Health Services CRG EDC Aggregate Data. AHS Laboratory Data. Pharmaceutical Information Network (PIN Dispense) Data. Health Canada Drug Product Database (HC-DPD). Anatomical Therapeutic Chemical (ATC) Classification System.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year**

[2] The American Hospital Formulary System (AHFS) Pharmacologic-Therapeutic drug classification is used to identify a drug and all of its core uses. The AHFS class number can have up to for tiers and looks like XX:XX.XX (3 tiers) or XX:XX.XX.XX (4 tiers). Each tier includes a level of information arranged in a step-up or step-down manner.

	2016/17 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ CRG EDC aggregate data may not identify all diabetics or may misidentify patients with questionable diagnoses. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	The data is diagnostic specific.
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Top 10 treated conditions
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The top ten treated conditions for the patient panel based on EDC aggregate codes out of the 3M clinical risk grouper.
Rationale:	Identifies treated prevalence of conditions in the patient population.
Interpretation:	
Target/Benchmark:	
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of patients treated for a particular condition = $\left(\frac{\text{Number of patients with [a particular condition]}}{\text{Total number of patients in physician panel}}\right) \times 100$ **Type of Measure** Rank ordered. **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The number of patients in the physician patient panel who have been treated for particular conditions. **Inclusion Criteria** Patients in the physician panel who have been treated for various conditions.

	Exclusions Patients in the physician panel who have not been treated for any condition. **Limitations & Technical Notes**
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Health Services Clinical Risk Grouper Data (Analytics, formerly DIMR).
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2011/12 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

PHARMACEUTICAL METRICS

The Pharmaceuticals section provides data definition information on the following metrics:

- Antipsychotics
- Diabetic patients' Statin prescriptions
- Antibiotic prescriptions after a Sinusitis related General Practitioner visit
- Benzodiazepines
- Opiates

IDENTIFYING INFORMATION	
Name:	Antipsychotics
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of patients in a physician's panel with at least one dispensed antipsychotic prescription.
Rationale:	Antipsychotics are often prescribed to seniors to treat symptoms of dementia, such as aggression and agitation, as well as schizophrenia and other psychoses, but they can have harmful side effects. Providing physicians with information on their 65+ patients' antipsychotic use will encourage them to self-reflect on their patients' antipsychotic prescriptions.
Interpretation:	A higher value indicates many patients who are 65 years or older are prescribed antipsychotics.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of patients with **dispensed** Antipsychotics = $\left(\frac{\text{Number of patients who are 65 years or older with a dispensed antipsychotic prescription}}{\text{Total number of patients in physician panel who are 65 years or older}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel who are 65 years or older. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patients 65 years or older. ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Patients younger than 65 years. ▪ Patients not assigned to physician by the HQCA algorithm or patients not

	on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The number of patients in the physician patient panel who are 65 years or older and with at least one dispensed antipsychotic prescription. Antipsychotic prescriptions are identified using the American Hospital Formulary Service (AHFS)[3] Pharmacologic-Therapeutic drug classification system. The following are classified as antipsychotics: ▪ 28:16.08 (Antipsychotics) ▪ 28:16.08.04 (Atypical Antipsychotics) ▪ 28:16.08.08 (Butyrophenones) ▪ 28:16.08.24 (Phenothiazines) ▪ 28:16.08.32 (Thioxanthenes) ▪ 28:16.08.92 (Miscellaneous Antipsychotics) **Inclusion Criteria** ▪ Patients 65 years or older. ▪ Currently marketed (refers to an active Drug Identification Number [DIN] that is currently being sold in Canada) antipsychotic drugs in the Health Canada Drug Product Database. ▪ Antipsychotic prescriptions that were not cancelled (DSPN_CANCEL_DATE is missing). **Exclusions** ▪ Patients younger than 65 years. ▪ Antipsychotic drugs not marketed. ▪ Prescriptions that were not filled. **Limitations & Technical Notes** ▪ Prescriptions include both new prescriptions and refills. ▪ It is assumed that the Drug Identification Number (DIN) is comparable across datasets. ▪ Prescriptions filled by patients could be written by other family physicians including specialist physicians.
Data Details	

[3] The American Hospital Formulary System (AHFS) Pharmacologic-Therapeutic drug classification is used to identify a drug and all of its core uses. The AHFS class number can have up to for tiers and looks like XX:XX.XX (3 tiers) or XX:XX.XX.XX (4 tiers). Each tier includes a level of information arranged in a step-up or step-down manner.

Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Pharmaceutical Information Network (PIN Dispense) Data. Health Canada Drug Product Database (HC-DPD). American Hospital Formulary Service (AHFS) Pharmacologic-Therapeutic drug classification.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2008/09 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ This measure includes only currently marketed drugs, as such drugs that are cancelled post-market (refers to a Drug Identification Number that is cancelled further to the discontinuation of sale by manufacturer) will not be captured. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	The data is not diagnostic specific.
More Information	
References None **Additional Notes** None **Alignments** Choosing Wisely Canada (CWC) recommendations:	

- Do not use antipsychotics as first choice to treat behavioural and psychological symptoms of dementia.
- Do not use atypical antipsychotics as a first-line intervention for Attention Deficit Hyperactivity Disorder (ADHD) with disruptive behaviour disorders.
- Do not routinely use antipsychotics to treat primary insomnia in any age group.

Alberta Health Services Addiction and Mental Health Strategic Clinical Network

Review Frequency

Yearly

IDENTIFYING INFORMATION	
Name:	Diabetic patients' Statin prescriptions
Short/Other Names:	Diabetic patients' HMG-CoA reductase inhibitor prescriptions
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of diabetic patients over 40 years of age in a physician panel with dispensed statin prescription.
Rationale:	Providing physicians with information on their diabetic patients on Statins can help disease management as diabetic patients face a greater risk of heart attack and stroke and Statins are a cholesterol-lowering drug.
Interpretation:	Ensuring that patients receive cholesterol-lowering drugs as appropriate is preferred.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of diabetic patients over 40 years with **dispensed** statins = $\left(\frac{\text{Number of diabetic patients with at least one dispensed statin prescription}}{\text{Total number of diabetic patients in physician panel}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of diabetic patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patients aged 40 years and older. ▪ Diabetic patients identified through the CRG EDC aggregate codes. ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Diabetic patients younger than 40 years. ▪ Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician.

	Limitations & Technical Notes
Numerator:	**Description** The number of diabetic patients in the physician patient panel with at least one dispensed statin prescription. Statin prescriptions are identified using the American Hospital Formulary Service (AHFS)[4] Pharmacologic-Therapeutic drug classification system. The following are classified as statins: ▪ 24:06.08 (Statins or HMG-CoA Reductase Inhibitors) o Class names: Atorvastatin, Amlodipine and Atorvastatin, Fluvastatin, Lovastatin, Pravastatin, Rosuvastatin, Simvastatin. **Inclusion Criteria** ▪ Patients over 40 years or older. ▪ Diabetic patients identified through the CRG EDC aggregate codes. ▪ Currently marketed (refers to an active Drug Identification Number [DIN] that is currently being sold in Canada) statin drugs in the Health Canada Drug Product Database. ▪ Statin prescriptions that were not cancelled (DSPN_CANCEL_DATE is missing). **Exclusions** ▪ Patients younger than 40 years. ▪ Statin drugs not marketed. ▪ Statin prescriptions that were cancelled (DSPN_CANCEL_DATE is **not missing**). **Limitations & Technical Notes** ▪ Prescriptions include both new prescriptions and refills. ▪ It is assumed that the Drug Identification Number (DIN) is comparable across datasets. ▪ Prescriptions filled by patients could be written by other family physicians including specialist physicians.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Health Services CRG EDC Aggregate Data.

[4] The American Hospital Formulary System (AHFS) Pharmacologic-Therapeutic drug classification is used to identify a drug and all of its core uses. The AHFS class number can have up to for tiers and looks like XX:XX.XX (3 tiers) or XX:XX.XX.XX (4 tiers). Each tier includes a level of information arranged in a step-up or step-down manner.

	Pharmaceutical Information Network (PIN Dispense) Data. Health Canada Drug Product Database (HC-DPD). American Hospital Formulary Service (AHFS) Pharmacologic-Therapeutic drug classification.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2016/17 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ This measure includes only currently marketed drugs, as such drugs that are cancelled post-market (refers to a Drug Identification Number that is cancelled further to the discontinuation of sale by manufacturer) will not be captured. ▪ CRG EDC aggregate data may not identify all diabetics or may misidentify patients with questionable diagnoses. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	The data is diagnostic specific.
More Information	
References None **Additional Notes** None **Alignments**	

Diabetes Canada – Clinical Practice Guidelines.

Review Frequency
Yearly

IDENTIFYING INFORMATION	
Name:	Antibiotic prescriptions after a Sinusitis related General Practitioner visit
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of patients in a physician panel with at least one dispensed antibiotic prescription within 7 days after a sinusitis related family physician (GP) visit.
Rationale:	Providing physicians with information on the percentage of their patients who dispensed an antibiotic prescription after a sinusitis-related visit can assist patient prescription management as sinus infections are usually caused by a virus and don't require an antibiotic.
Interpretation:	Lower values are desirable.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of patients with **dispensed** antibiotics after a sinusitis related GP visit = $\left(\frac{\text{Number of patients with dispensed antibiotic prescriptions within 7 days of a sinusitis related GP visit}}{\text{Total number of patients in physician panel with a sinusitis related GP visit}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel with a sinusitis related GP visit. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). ▪ A visit to a GP for which the service site is blank or the service is delivered in one of the following places: o Practitioners Office o Ambulatory Care Services o Long Term Care center ▪ Sinusitis is identified using the first diagnostic code (HLTH_DX_ICD9X_CODE_1) in the physician claims dataset o ICD- 9 codes: 461.0 – 461.9.

	o ICD-10 codes: J01.0 – J01.9. **Exclusions** ▪ Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. ▪ Patients who were not diagnosed with sinusitis. **Limitations & Technical Notes**
Numerator:	**Description** The number of patients in the physician patient panel with at least one dispensed antibiotic prescription within 7 days after a sinusitis related GP visit. Antibiotic prescriptions are identified using the American Hospital Formulary Service (AHFS)[5] Pharmacologic-Therapeutic drug classification system. The following are classified as antibiotics: ▪ 08:12.02 (Aminoglycosides) ▪ 08:12.06 (Cephalosporins) ▪ 08:12.06.04 (First Generation) ▪ 08:12.06.08 (Second Generation) ▪ 08:12.06.12 (Third Generation) ▪ 08:12.06.16 (Four Generation) ▪ 08:12.06.20 (Fifth Generation) ▪ 08:12.07 (Miscellaneous beta-Lactams) ▪ 08:12.07.08 (Carbapenems) ▪ 08:12.07.12 (Cephamycins) ▪ 08:12.07.16 (Monobactams) ▪ 08:12.08 (Chloramphenicol) ▪ 08:12.12 (Macrolides) ▪ 08:12.12.04 (Erythromycins) ▪ 08:12.12.12 (Ketolides) ▪ 08:12.12.92 (Other Macrolides) ▪ 08:12.16 (Penicillins) ▪ 08:12.16.04 (Natural Penicillins) ▪ 08:12.16.08 (Aminopenicillins) ▪ 08:12.16.12 (Penicillinase-Resistant Penicillins) ▪ 08:12.16.16 (Extended-Spectrum Penicillins) ▪ 08:12.18 (Quinolones) ▪ 08:12.20 (Sulfonamides)

[5] The American Hospital Formulary System (AHFS) Pharmacologic-Therapeutic drug classification is used to identify a drug and all of its core uses. The AHFS class number can have up to for tiers and looks like XX:XX.XX (3 tiers) or XX:XX.XX.XX (4 tiers). Each tier includes a level of information arranged in a step-up or step-down manner.

	▪ 08:12.24 (Tetracyclines) ▪ 08:12.24.12 (Glycopeptides) ▪ 08:12.28 (Antibacterial, Miscellaneous) ▪ 08:12.28.04 (Aminocyclitols) ▪ 08:12.28.08 (Bacitracins) ▪ 08:12.28.12 (Cyclic Lipopeptides) ▪ 08:12.28.16 (Glycopeptides) ▪ 08:12.28.20 (Lincomycins) ▪ 08:12.28.24 (Oxzolidinones) ▪ 08:12.28.28 (Polymyxins) ▪ 08:12.28.30 (Rifamycins) ▪ 08:12.28.32 (Steptogramins) ▪ 08:12.28.92 (Other Miscellaneous Antibacterial Agents) ▪ 84:04.04 (Antibiotics) **Inclusion Criteria** ▪ Sinusitis is identified using the first diagnostic code (HLTH_DX_ICD9X_CODE_1) in the physician claims dataset o ICD- 9 codes: 461.0 – 461.9. o ICD-10 codes: J01.0 – J01.9. ▪ A visit to a GP for which the service site is blank or the service is delivered in one of the following places: o Practitioners Office o Ambulatory Care Services o Long Term Care center ▪ Patients who visited a GP and were diagnosed with sinusitis and dispensed an antibiotic prescription. ▪ Currently marketed (refers to an active Drug Identification Number [DIN] that is currently being sold in Canada) antibiotic drugs in the Health Canada Drug Product Database. ▪ Antibiotic prescriptions that were not cancelled (DSPN_CANCEL_DATE is missing). **Exclusions** ▪ Duplicate family physician visits based on Patient Health Number (PHN), date, procedure and diagnostic codes, and physicians are removed. ▪ Visits to General practitioners where the service was delivered in one of the following: o Emergency o Pediatric Emergency ▪ Patients who visited a GP and were diagnosed with sinusitis but did not

	dispense an antibiotic prescription. ▪ Antibiotic drugs not marketed. **Limitations & Technical Notes** ▪ Prescriptions include both new prescriptions and refills. ▪ It is assumed that the Drug Identification Number (DIN) is comparable across datasets. ▪ Prescriptions filled by patients could be written by other family physicians including specialist physicians. ▪ An individual patient can have a GP visit multiple times in a day.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Alberta Health Services CRG EDC Aggregate Data. Pharmaceutical Information Network (PIN Dispense) Data. Health Canada Drug Product Database (HC-DPD). American Hospital Formulary Service (AHFS) Pharmacologic-Therapeutic drug classification.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2016/17 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ Using 7 days may either underestimate or overestimate the percentage. ▪ This measure includes only currently marketed drugs, as such drugs that are cancelled post-market (refers to a Drug Identification Number that is cancelled further to the discontinuation of sale by manufacturer) will not be captured. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a

	physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	The data is diagnostic specific.
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Benzodiazepines (PCN report only)
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of patients in a physician's panel with at least one benzodiazepine dispensed prescription.
Rationale:	Benzodiazepines are widely used for a variety of conditions, particularly anxiety and insomnia. Inappropriate long-term use of benzodiazepines can result in adverse effects such as psychomotor impairment, especially in the elderly. Providing physicians with information on their 65+ patients' benzodiazepine use will encourage them to self-reflect on their benzodiazepine prescriptions.
Interpretation:	A higher value indicates many patients who are 65 years or older are prescribed benzodiazepines.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of patients with **dispensed** Benzodiazepines = $\left(\frac{\text{Number of patients who are 65 years or older with a dispensed benzodiazepine prescription}}{\text{Total number of patients in physician panel who are 65 years or older}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel who are 65 years or older. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patients 65 years or older. ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** ▪ Patients younger than 65 years. ▪ Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician.

	Limitations & Technical Notes
Numerator:	**Description** The number of patients in the physician patient panel who are 65 years or older and with at least one dispensed benzodiazepine prescription. Benzodiazepine prescriptions are identified using the American Hospital Formulary Service (AHFS)[6] Pharmacologic-Therapeutic drug classification system. The following are classified as benzodiazepines: ▪ 28:12.08 (Benzodiazepines) ▪ 28:24.08 (Benzodiazepines) **Inclusion Criteria** ▪ Patients 65 years or older. ▪ Currently marketed (refers to an active Drug Identification Number [DIN] that is currently being sold in Canada) benzodiazepine drugs in the Health Canada Drug Product Database. ▪ Benzodiazepine prescriptions that were not cancelled (DSPN_CANCEL_DATE is missing). **Exclusions** ▪ Patients younger than 65 years. ▪ Benzodiazepine drugs not marketed. ▪ Prescriptions that were not filled. **Limitations & Technical Notes** ▪ Prescriptions include both new prescriptions and refills. ▪ It is assumed that the Drug Identification Number (DIN) is comparable across datasets. ▪ Prescriptions filled by patients could be written by other family physicians including specialist physicians.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Pharmaceutical Information Network (PIN Dispense) Data. Health Canada Drug Product Database (HC-DPD). American Hospital Formulary Service (AHFS) Pharmacologic-Therapeutic drug

[6] The American Hospital Formulary System (AHFS) Pharmacologic-Therapeutic drug classification is used to identify a drug and all of its core uses. The AHFS class number can have up to for tiers and looks like XX:XX.XX (3 tiers) or XX:XX.XX.XX (4 tiers). Each tier includes a level of information arranged in a step-up or step-down manner.

	classification.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2008/09 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ This measure includes only currently marketed drugs, as such drugs that are cancelled post-market (refers to a Drug Identification Number that is cancelled further to the discontinuation of sale by manufacturer) will not be captured. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	The data is not diagnostic specific. This measure is only included in the PCN panel report.
More Information	
References None **Additional Notes** None **Alignments** Choosing Wisely Canada (CWC) recommendation: ▪ Do not use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium. **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Opiates (PCN report only)
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The percentage of patients in a physician's panel with at least one dispensed opiate prescription.
Rationale:	Opiates are commonly prescribed to treat various forms of pain, ranging from acute to chronic. Some opiates are prescribed to treat opioid dependence. In some situations, opiate use is associated with harms such as respiratory depression, coma or death. Providing physicians with information on how their patients use opiates will encourage them to self-reflect on the appropriateness of their opiate prescription.
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Percentage of patients with **dispensed** Opiates = $\left(\frac{\text{Number of patients with a dispensed opiate prescription}}{\text{Total number of patients in physician panel}}\right) \times 100$ **Type of Measure** Percentage **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**

Numerator:	**Description** The number of patients in the physician patient panel with at least one dispensed opiate prescription. Opiate prescriptions are identified using the Anatomical Therapeutic Chemical (ATC) Classification System. The following ATC codes are classified as opiates: ▪ M03BA53 ▪ M03BB53 ▪ N01AH01 ▪ N01AH03 ▪ N01AH06 ▪ N01AX03 ▪ N02AA01 ▪ N02AA03 ▪ N02AA05 ▪ N02AA55 ▪ N02AA59 ▪ N02AA79 ▪ N02AB02 ▪ N02AB03 ▪ N02AD01 ▪ N02AE01 ▪ N02AF01 ▪ N02AX06 ▪ N02BA51 ▪ N02BA71 ▪ N02BE51 ▪ N07BC02 ▪ N07BC51 ▪ R05DA03 ▪ R05DA04 ▪ R05DA20 ▪ R05FA02 **Inclusion Criteria** ▪ Currently marketed (refers to an active Drug Identification Number [DIN] that is currently being sold in Canada) opiate drugs in the Health Canada Drug Product Database. ▪ Opiate prescriptions that were not cancelled (DSPN_CANCEL_DATE is missing). **Exclusions**

	▪ Opiate drugs not marketed. ▪ Prescriptions that were not filled. **Limitations & Technical Notes** ▪ Prescriptions include both new prescriptions and refills. ▪ It is assumed that the Drug Identification Number (DIN) is comparable across datasets. ▪ Prescriptions filled by patients could be written by other family physicians including specialist physicians.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry. Pharmaceutical Information Network (PIN Dispense) Data. Health Canada Drug Product Database (HC-DPD). Anatomical Therapeutic Chemical (ATC) Classification System.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2008/09 **Last Available Year** 2016/17
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	The data is not diagnostic specific. This measure is only included in the PCN panel report.
More Information	
References	

None

Additional Notes
None

Alignments

- Choosing Wisely Canada (CWC) recommendation:
  - Do not use opiates or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium.
- College of Physicians and Surgeons of Alberta (CPSA):
  - Alberta Triplicate Prescription Program (TPP) administered by CPSA.

Review Frequency
Yearly

UTILIZATION METRICS

The Utilization section provides data definition information on the following metrics:

- General Practitioner (GP) visits
- Specialist visits
- Emergency Department (ED) visits
- General Practitioner Sensitive Condition (GPSC) visits
- ED visits by Canadian Triage and Acuity Scale (CTAS)
- Hospital inpatient length of stay (LOS) days
    - Hospital inpatient length of stay days for those who had an inpatient stay
- Alternate Level of Care (ALC) days
    - ALC days for those who had an inpatient length of stay

IDENTIFYING INFORMATION	
Name:	Average General Practitioner visits
Short/Other Names:	Average GP visits
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The average number of visits by a patient panel to a family physician. A GP **visit** is a single encounter between a unique patient and a unique physician (General Practitioner) on a unique day. It requires that an individual patient has at least one service claim per day submitted by a physician on a given day.
Rationale:	The purpose of this measure is to see how often patients utilize primary health care physicians. This could also be an indicator for measuring access to primary care physicians.
Interpretation:	The higher the value, the more patients seen by the physician.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Average GP visits = $\frac{\text{Sum of individual patients' GP visits}}{\text{Total number of patients in physician panel}}$ **Type of Measure** Average **Adjustment Applied** Multivariate linear regression based on age, gender, burden of illness (CRG), material and social deprivation and patient's physician continuity and then grand-mean centred on the Alberta population's characteristics.
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**

Numerator:	**Description** The sum of all individual patients' family physician visits to a physician whose specialty is General Practitioner (GP). **Inclusion Criteria** A visit to a GP for which the service site is blank or the service is delivered in one of the following places: ▪ Practitioners Office ▪ Long Term Care center ▪ Home **Exclusions** ▪ Duplicate family physician visits based on Patient Health Number (PHN), date, procedure and diagnostic codes, and physicians are removed. ▪ Visits to General practitioners where the service was delivered in one of the following: o Emergency o Pediatric Emergency **Limitations & Technical Notes** An individual patient can have a GP visit multiple times in a day.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This

	may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	

More Information

References
None

Additional Notes
None

Alignments
None

Review Frequency
Yearly

IDENTIFYING INFORMATION	
Name:	Average Specialist visits
Short/Other Names:	N/A
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The average number of visits by a patient panel to a specialist physician. A **specialist physician** is a physician with a specialty training that another physician (general practitioner) will refer a patient. A specialist **visit** is a single encounter between a unique patient and a unique specialty on a unique day. It requires that an individual patient must have at least one specialty service claim per day submitted by a specialist physician on a given day. Specialist physicians reported on include: ▪ Cardiology. ▪ Internal Medicine. ▪ Obstetrics and Gynecology. ▪ Ophthalmology. ▪ Psychiatry – Specialty.
Rationale:	The purpose of this measure is to see how often patients utilize specialist physicians. This could also be an indicator for measuring access to specialist physicians.
Interpretation:	The higher the value, the more times the patient panel sees specialist physicians.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Average specialist visits = $\frac{\text{Sum of individual patients' [to particular specialty]}}{\text{Total number of patients in physician panel}}$ **Type of Measure** Average **Adjustment Applied** Multivariate linear regression based on age, gender, burden of illness (CRG), material and social deprivation and patient's physician continuity and then grand-mean centred on the Alberta population's characteristics.
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy

	panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The sum of all individual patients' visits to a specialist physician who is not a General Practitioner and is listed in the inclusion criteria below. **Inclusion Criteria** A specialist physician is identified as a physician whose specialty is one of the following: ▪ Cardiology (CARD) ▪ Internal Medicine (INMD) ▪ Obstetrics and Gynecology (OBGY) ▪ Ophthalmology (OPHT) ▪ Psychiatry – Specialty (PSYC) **Exclusions** ▪ Physician specialties not listed in the inclusion criteria. ▪ Duplicate specialist physician visits based on Patient Health Number (PHN), date, procedure and diagnostic codes, and physicians are removed. **Limitations & Technical Notes** An individual patient can visit multiple specialist physicians multiple times a day.
Data Details	
Data Sources:	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level.

	Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ The physician claims dataset consists of Fee-for-service and shadow billing. The data submitted based on shadow billing may not be entirely accurate. As a result, this might affect the accuracy of the results of this measure.
Comments:	
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Emergency Department visits
Short/Other Names:	ED visits
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The average number of visits by a patient panel to the emergency department. The percentage of ED visits in the following categories: ▪ Mental health related visits. ▪ General Practitioner Sensitive Condition (GPSC) visits. ▪ Injury related visits. ▪ All other ED visits.
Rationale:	To provide information on how the patient panel utilizes emergency department services. This will help in highlighting access to emergency department services and the service needs of the population.
Interpretation:	A lower value is desirable.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** A. Average ED visits = $\frac{\text{Sum of individual patients' ED visits}}{\text{Total number of patients in physician panel}}$ B. Percentage of ED visits [by category] = $\left(\frac{\text{Sum of individual patients' ED visits [by category]}}{\text{Total number of patients in physician panel}}\right) \times 100$ **Type of Measure** A. Average B. Percentage **Adjustment Applied** A. Multivariate linear regression based on age, gender, burden of illness (CRG), material and social deprivation and patient's physician continuity and then grand-mean centred on the Alberta population's characteristics. B. None.
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria**

	▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The sum of all individual patients' visits to the emergency department. **Inclusion Criteria** ▪ Emergency department visits are identified by the MIS_CODE 71310 (the first 5 digits of the MIS functional code). ▪ Mental health related ED visits are identified by the following ICD-10 codes: o F01 – F99 [Mental behavioural and neurodevelopmental disorders]. ▪ GPSCs (see definition). ▪ Injury related ED visits are identified by the first letter of the first diagnostic code (DXCODE1) as: o S, T, U, V, W, X, Y. **Exclusions** ▪ Duplicate ED visits based on Patient Health Number (PHN), date, and time are removed. ▪ Urgent Care Center visits (MIS_CODE: 71513[first 5 digits]) **Limitations & Technical Notes** An individual patient can visit an emergency department multiple times a day.
Data Details	
Data Sources:	National Ambulatory Care Reporting System (NACRS). Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year**

	2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years). ▪ Missing data.
Comments:	
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	General Practitioner Sensitive Condition visits
Short/Other Names:	GPSC visits
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The average number of General Practitioner Sensitive Condition visits by a patient panel. A GPSC is an emergency department (ED) visit for a condition (diagnosis) that occurs more than 100 times over the fiscal years 2002/2003 to 2009/10, and has a less than one percent (1%) likelihood of resulting in a patient being admitted as an inpatient. The percentage of GPSC visits grouped by time of day. There are three groupings: ▪ 7:01am – 5pm (07:01 – 17:00) [Day] ▪ 5:01pm – 10pm (17:01 – 22:00) [Evening/After-hours] ▪ 10:01pm – 7:00am (22:01 – 07:00) [Night]
Rationale:	To provide information on how the patient panel utilizes emergency department services for conditions that could be treated in a primary care setting. GPSC visits represent an indirect measure of access to primary healthcare.
Interpretation:	A lower value is desirable.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** A. Average GPSC visits = $\frac{\text{Sum of individual patients' GPSC visits}}{\text{Total number of patients in physician panel}}$ B. Percentage of GPSC visits by time of day = $\left(\frac{\text{Sum of individual patients' GPSC visits by time}}{\text{Total number of patients in physician panel}}\right) \times 100$ **Type of Measure** A. Average B. Percentage **Adjustment Applied** A. Multivariate linear regression based on age, gender, burden of illness (CRG), material and social deprivation and patient's physician continuity and then grand-mean centred on the Alberta population's characteristics. B. None.
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL)

	submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The sum of all individual patients' visits to the emergency department with General Practitioner Sensitive Conditions (GPSCs). **Inclusion Criteria** ▪ Emergency department visits are identified by the MIS_CODE 71310 (the first 5 digits of the MIS functional code). ▪ A valid GPSC visits is identified by the first 3 digits of the following ICD-10 diagnostic codes (the DXCODE1 field in the NACRS dataset): o A56, A59, A63, A64 (Infections with a Predominantly Sexual Mode of Transmission) o A74 (Other Diseases Caused by Chlamydiae) o B06, B07, B08, B09 (Viral Infections Characterized by Skin and Mucous Membrane Lesions) o B30 (Other Viral Diseases) o B35, B36, B37, B48 (Mycoses) o B65, B80, B82, B83 (Protozoal Diseases) o B85, B86, B88, B89 (Pediculosis, Acariasis, and Other Infestations) o C44 (Malignant Neoplasms) o D04 (In Situ Neoplasms) o D16, D17, D22, D23, D24 (Benign Neoplasms) o E29 (Disorders of Other Endocrine Glands) o F17 (Mental and Behavioural Disorders due to Psychoactive Substance use)[Removed] o F52 (Behavioural Syndromes Associated with Physiological Disturbances and Physical Factors) [Removed] o G43 (Episodic and Paroxysmal Disorders) o G56 (Nerve, Root and Plexus Disorders) o H00, H01, H04 (Disorders of Eyelid, Lacrimal System and Orbit) o H10, H11 (Disorders of Conjunctiva) o H15, H18 (Disorders of Sclera, Cornea, Iris and Ciliary Body) o H57 (Visual Disturbances and Blindness) o H60, H61 (Diseases of External Ear)

	o H65, H66, H68, H69, H72, H73, H74 (Diseases of Middle Ear and Mastoid) o H92, H93 (Other Diseases of the Ear) o J00, J01, J02, J06 (Acute Upper Respiratory Infections) o J30, J31, J32, J33 (Other Diseases of Upper Respiratory Tract) o K00, K01, K02, K04, K05, K07, K08, K13 (Diseases of Oral Cavity, Salivary Glands and Jaws) o L01 (Infections of the Skin and Subcutaneous Tissue) o L20, L21, L22, L23, L24, L25, L28, L29, L30 (Dermatitis and Eczema) o L42, L43 (Papulosquamous Disorders) o L50, L55, L56, L57 (Radiation-Related Disorders of the Skin and Subcutaneous Tissue) o L60, L63, L65, L70, L71, L72, L73, L74 (Disorder of Skin Appendages) o L81, L82, L84, L85, L90, L91, L92 (Other Disorders of the Skin and Subcutaneous Tissue) o M18, M20, M22 (Arthoropathies) o M67, M70, M75, M76, M77 (Soft Tissue Disorders) o M92, M94 (Osteopathies and Chondropathies) o N34 (Other Diseases of Urinary System) o N60, N62, N63, N64 (Disorders of Breast) o N77 (Inflammatory Diseases of Female Pelvic Organs) o N91, N94, N97 (Non-inflammatory Disorders of Female Genital Tract) o O92 (Complications Predominantly related to the Puerperium) o P37 (Infections Specific to the Perinatal Period) o Q10 (Congenital malformations of Eye, Ear, Face and/or Neck) o Q38 (Other Congenital Malformations of the Digestive System) o Q66 (Congenital Malformations and Deformations of the Musculoskeletal System) o R30, R36 (Symptoms and Signs Involving the Urinary System) o Z02, Z09, Z11, Z12, Z13 (Persons Encountering Health Services for Examination and Investigation) o Z20, Z23, Z24, Z25, Z26, Z27, Z29 (Persons with Potential Health Hazards related to Communicable Diseases) o Z30, Z31, Z32 (Persons Encountering Health Services in Circumstances related to Reproduction) o Z41, Z44, Z45, Z46, Z47, Z48, Z50, Z51, Z53 (Persons Encountering Health Services for Specific Procedures and Health care) o Z56, Z57, Z64 (Persons with Potential Health Hazards related to Socioeconomic and Psychosocial Circumstances) o Z70, Z71, Z76 (Persons Encountering Health Services in Other Circumstances) o Z92 (Persons with Potential Health Hazards related to Family and Personal History and Certain Conditions Influencing Health Status) **Exclusions** ▪ Duplicate ED visits based on Patient Health Number (PHN), date, time and location are removed.

	▪ Visits to the ED that is as a result of injury (i.e. ICD-9 or ICD-10 diagnostic codes beginning with the letter 'S' or 'T'). ▪ Visits to the ED with the first 3 digits of the ICD-9 or ICD-10 diagnostic (DXCODE1) not in the criteria above. **Limitations & Technical Notes** An individual patient can visit an emergency department multiple times a day.
Data Details	
Data Sources:	National Ambulatory Care Reporting System (NACRS). Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ This measure is diagnostic post-hoc biased. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years).
Comments:	
More Information	
References None **Additional Notes** None **Alignments**	

None

Review Frequency
Yearly

IDENTIFYING INFORMATION	
Name:	Emergency Department visits by Canadian Triage Acuity Scale level and Time of Day
Short/Other Names:	ED visits by CTAS and Time of Day
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The Canadian Triage Acuity Scale (CTAS) is a tool that allows emergency department (ED) nurses and physicians to: ▪ Triage patients according to the type and severity of their presenting conditions (signs and symptoms). ▪ Ensure that the sickest patients are seen first. There are 5 CTAS levels: ▪ 1 (Resuscitation). ▪ 2 (Emergent). ▪ 3 (Urgent). ▪ 4 (Less Urgent). ▪ 5 (Non Urgent). This measure groups and reports on : ▪ CTAS12 for levels 1 & 2 ▪ CTAS3 for level 3 ▪ CTAS45 for level 4 & 5. CTAS by time of day grouped by: ▪ 7:01am – 5pm (07:01 – 17:00) [Day] ▪ 5:01pm – 10pm (17:01 – 22:00) [Evening/After-hours] ▪ 10:01pm – 7:00am (22:01 – 07:00) [Night].
Rationale:	To provide information on how the patient panel utilizes ED services based on the severity of their presenting conditions. This will help in highlighting the appropriateness of ED visits by the physician patient panel.
Interpretation:	A lower value is desirable for levels 4 & 5 during daytime [7:01am – 5pm (07:01 – 17:00)].
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** Average ED visits by CTAS = $\frac{\text{Sum of individual patient' ED visits by CTAS}}{\text{Total number of patients in physician panel}}$ Average ED visits by CTAS 4 and 5, by Time = $\frac{\text{Sum of individual patients' ED visits by CTAS 4 and 5, and by Time}}{\text{Total number of patients in physician panel}}$ **Type of Measure** Average

	Adjustment Applied Multivariate linear regression based on age, gender, burden of illness (CRG)material and social deprivation and patient's physician continuity and then grand-mean centred on the Alberta population's characteristics.
Denominator:	**Description** The number of patients in the physician panel. The physician patient panel is based on either assignment by the HQCA algorithm or a confirmed patient list (CPL) submitted by the physician. **Inclusion Criteria** ▪ Patient list specifically submitted by physician. ▪ Patients assigned to a physician based on the HQCA algorithm (Proxy panel). **Exclusions** Patients not assigned to physician by the HQCA algorithm or patients not on list submitted by physician. **Limitations & Technical Notes**
Numerator:	**Description** The sum of all individual patients' visits to the emergency department by CTAS levels. **Inclusion Criteria** ▪ Emergency department visits are identified by the MIS_CODE 71310 (the first 5 digits of the MIS functional code). ▪ Any ED visit that has a valid triage code. **Exclusions** ▪ Duplicate ED visits based on Patient Health Number (PHN), date, and time are removed. ▪ Urgent Care Center visits (MIS_CODE: 71513[first 5 digits]) **Limitations & Technical Notes** An individual patient can visit an emergency department multiple times a day.
Data Details	
Data Sources:	National Ambulatory Care Reporting System (NACRS).

	Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ Missing triage values. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years).
Comments:	
More Information	
References For more information on CTAS, see the Canadian Association of Emergency Physicians website here. **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Inpatient Length of Stay Days
Short/Other Names:	Inpatient LOS Days
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The average number of days that the physician patient panel was admitted to health facility as an inpatient. LOS days includes total length of stay for all visits and alternative level of care (ALC) days.
Rationale:	To provide information on how the patient panel remains in a hospital or other setting. This will help in highlight the some of the factors that influence the rehabilitation course of the physician patient panel.
Interpretation:	
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** A. Average LOS days = $\frac{\text{Sum of individual patients' LOS days}}{\text{Total number of patients in physician panel}}$ B. Average LOS (Patients with an inpatient stay) days = $\frac{\text{Sum of all individual patients' LOS days}}{\text{Total number of patients with an inpatient stay in physician panel}}$ **Type of Measure** Average **Adjustment Applied** Multivariate linear regression based on age, gender, burden of illness (CRG), material and social deprivation and patient's physician continuity.
Denominator:	**Description** The number of patients in the physician panel. Physician patient panel is either assigned by the HQCA algorithm or a confirmed patient list (CPL) is submitted by the physician. **Inclusion Criteria** A. Patient list specifically submitted by physician; patients assigned to a physician based on the HQCA algorithm (Proxy panel). B. Patients in physician panel who had an inpatient stay in a health facility. **Exclusions** A. Patients not assigned to physician by the HQCA algorithm or patients not

	on list submitted by physician. B. Patients in physician panel who did not have an inpatient stay in a health facility. **Limitations & Technical Notes**
Numerator:	**Description** The sum of all individual patients' length of inpatient stay days. **Inclusion Criteria** Inpatient length of stay days. **Exclusions** Duplicate records based on Patient Health Number (PHN) and dates are removed. **Limitations & Technical Notes** Inpatient LOS is capped at 365 days per year in order to account for errors in data.
Data Details	
Data Sources:	Discharge Abstract Database (DAD). Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ Inpatient LOS days are based on calculated values in DAD. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit

	a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years).
Comments:	
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

IDENTIFYING INFORMATION	
Name:	Alternative Level of Care Days (PCN report only)
Short/Other Names:	ALC Days
BACKGROUND, INTERPRETATION AND BENCHMARKS	
Description:	The average number of days a patient occupies a bed in a hospital, and whose care could be better provided in an alternative care facility (e.g., continuing care).
Rationale:	In most cases, alternative level of care days are associated with the time spent waiting for a supportive living facility or a long-term care facility. This is an indirect measure of the physicians' patient panel's ability to get into their appropriate level of care setting (facility) at the appropriate time.
Interpretation:	A higher value will indicate that patients wait longer to get placement into an appropriate care setting. Thus, a lower value is desirable.
Target/Benchmark:	No benchmarks have been identified.
INDICATOR CALCULATION	
Calculation:	**Description** A. Average ALC days = $\frac{\text{Sum of individual patients' ALC days}}{\text{Total number of patients in physician panel}}$ B. Average ALC (Patients with an inpatient stay) days = $\frac{\text{Sum of all individual patients' ALC days}}{\text{Total number of patients with an inpatient stay in physician panel}}$ **Type of Measure** Average **Adjustment Applied** None
Denominator:	**Description** The number of patients in the physician panel. Physician patient panel is either assigned by the HQCA algorithm or a confirmed patient list (CPL) is submitted by the physician. **Inclusion Criteria** A. Patient list specifically submitted by physician; patients assigned to a physician based on the HQCA algorithm (Proxy panel). B. Patients in physician panel who had an inpatient stay in a health facility. **Exclusions** A. Patients not assigned to physician by the HQCA algorithm or patients not

	on list submitted by physician. B. Patients in physician panel who did not have an inpatient stay in a health facility. **Limitations & Technical Notes**
Numerator:	**Description** The sum of all individual patients' alternative level of care days. **Inclusion Criteria** Alternative level of care days. **Exclusions** Duplicate records based on Patient Health Number (PHN) and dates are removed. **Limitations & Technical Notes**
Data Details	
Data Sources:	Discharge Abstract Database (DAD). Alberta Health Physician Claims. Alberta Health Care Insurance Plan (AHCIP) Registry.
Available Data Years:	**Type of Year** Fiscal year [April 1 to March 31] **First Available Year** 2007/08 **Last Available Year** 2015/16
Geographic Coverage:	The province of Alberta excluding the military and prisoners.
Reporting Level:	Patient level. Physician level, based on confirmed patient list submitted by physician or panel assigned by the HQCA algorithm.
Quality Statement	
Limitations:	▪ ALC days are based on calculated values in DAD. ▪ All calculations include only patients who are currently listed as '**Active**' in the Alberta Health Care Insurance Plan (AHCIP) Registry database. This may lead to underestimation of the calculated measure above. ▪ About 18% of Albertans do not visit a General Practitioner in a year. ▪ Patients are excluded in the physician panel assignment if they do not visit

	a physician in 3 years (the current fiscal year, plus the 2 preceding fiscal years).
Comments:	
More Information	
References None **Additional Notes** None **Alignments** None **Review Frequency** Yearly	

The HQCA proxy panel selection algorithm

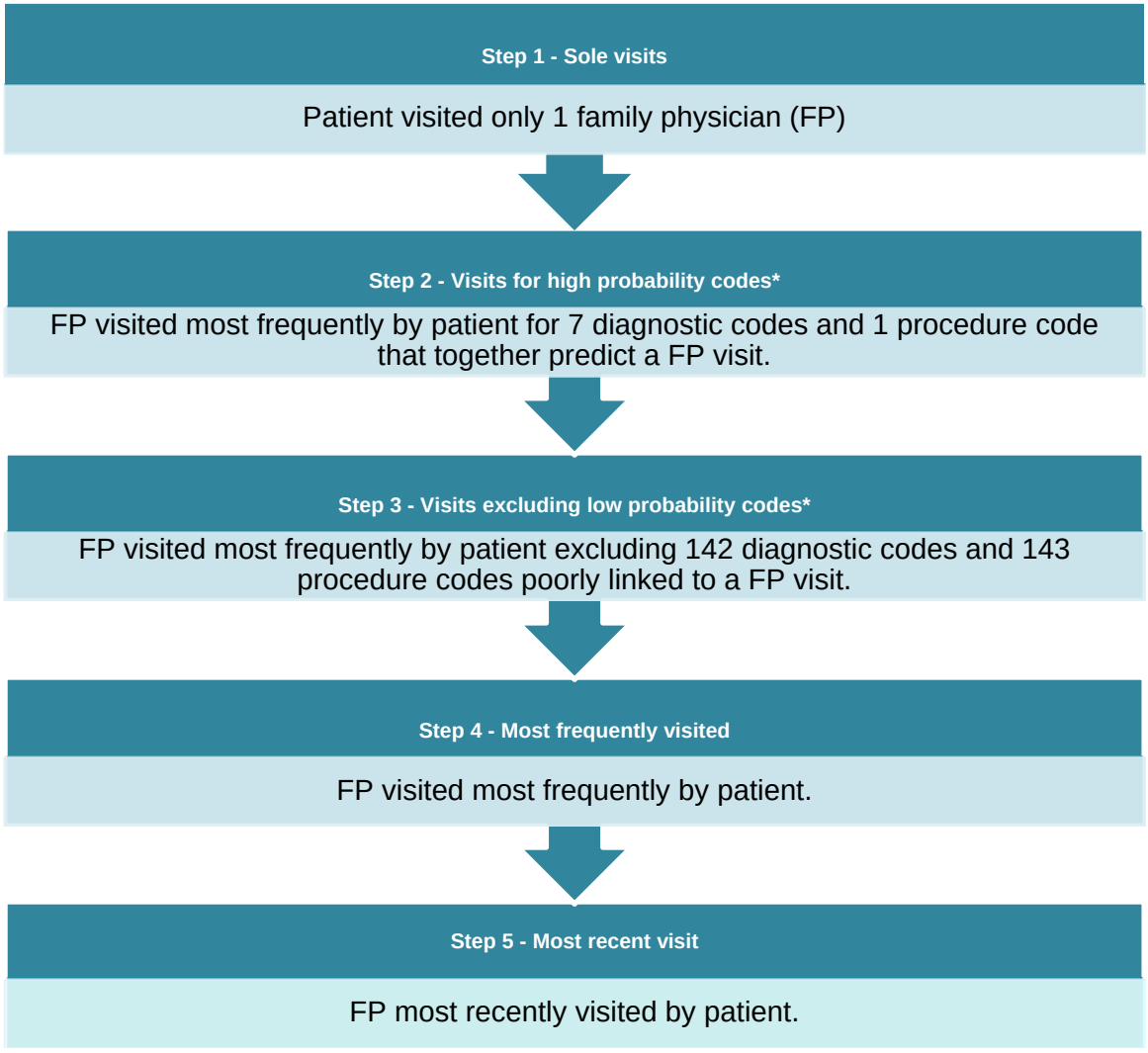
The HQCA proxy panel is an **estimate** of a physician's active panel based on the pattern of family physician billing claims over a three year period. The current data period covers the years **April 1, 2014 to March 31, 2017**.

The HQCA proxy panel selection algorithm is a step-wise process that predicts which family physician, from all those seen by a patient over the three year time period, is most likely to be the patient's main family physician. If there is a tie between two or more family physicians at any step, assignment moves to the next step.

The proxy panel will be most accurate for physicians who had a stable practice during the data period and who saw few patients of other family physicians (e.g., in an after-hours or walk-in clinic).

How this algorithm was built

Using over 200 physicians' confirmed panels representing over 200,000 patients we examined which diagnostic and procedure codes predicted a relationship between a patient and a family physician. This included looking at the physicians' panel patients billing to the confirmed (assigned) physician, the patients' billing to other physicians, and the physicians' billings for patients where there wasn't a confirmed relationship.



Step 1 – Sole visits

The algorithm begins by looking at sole visits. If the patient visited only one FP over the three years they were assigned to that FP. This is identical to AH's four-cut, and is an unavoidable initial step because there are no other FPs to choose from. Sole visits as compared to the FP-patient validated panels were found to be a fairly successful method of linking patients and FPs.

Step 2 – Visits for high probability codes

The second step of the algorithm looks at the frequency of visits for 7 diagnostic and 1 procedure codes that has a high probability of predicting a FP. If there is a tie in terms of most visits to a number of FPs, the tied FPs were carried forward and tie breakers were determined by subsequent steps.

The 7 diagnostic and 1 procedure codes are:

Diagnostic codes:

- 305.5 Nondependent Morphine Abuses
- 471 Polyp of Nasal Cavity
- 793.9 Other Abnormal finding / other exam
- 53.7 Herpes Zoster with other compl
- V42.2 Heart valve replaced transplant
- 796.4 Other Abnormal Clinical findings
- V67.3 Follow-up exams psychiatry

Procedure code:

- 03.05TX Other diagnostic interview and evaluation {Administering of treatment and/or medication prescribed by a physician performed by a Professional Nurse, per 15 minutes}

Step 3 – Visits excluding low probability codes

The third step of the algorithm looked at the frequency of FP visits. The HQCA excluded diagnostic and procedure codes that didn't seem to predict a FP very well. If there is a tie in terms of most visits to a number of FPs, the tied FPs were carried forward and tie breakers were determined by subsequent steps.

The diagnostic and procedure codes are:

Diagnostic codes:

- 786 Dyspnea and Respiratory Abnorm
- 998 Postoperative shock
- 511.9 Unspecified pleural effusion
- V19.2 Family HX deafness/hearing loss
- 188 Mal Neoplasm of bladder trigone
- 821 Fracture shaft/ Nos femur closed
- 560.9 Unspecified intestinal obstruction
- 379.9 Unspecified disorders eye and adnexa

- 292 Drug withdrawal syndrome
- 999 Generalized vaccinia
- 644 Threatened labour
- 696.1 Other psoriasis
- 586 #N/A
- 750 Tongue tie
- 202 Nodular lymphoma
- 873 Open wound scalp no compl
- 707.9 Chronic ulcer unspecified site
- 345.9 Unspecified epilepsy
- 298.9 Unspecified psychosis
- 813.4 Fracture Lower end rad/ulna cl
- 593 Nephroptosis
- 276.5 Volume depletion
- 38 Streptococcal septicemia
- 662 Prolonged first stage
- 721 Cerv spondylosis no myelopathy
- 918.1 Superficial injury cornea
- V23 #N/A
- 295.3 Paranoid schizophrenic pysch
- 295.7 Schizoaffective psychosis
- 648 Diabetes mellitus in pregnancy
- 998.5 Postoperative infection
- V76.4 Special screen mal neo other site
- 799 Asphyxia
- 478 Hypertrophy of nasal turbinates
- V68.9 Encounter for admin purpose nos
- V23.8 Supervision of other high risk pregnancy
- 553.2 Ventral hernia nos
- 560.8 Other intestinal obstruction
- 676.5 Suppressed lactation pregnancy
- 656.3 Fetal distress
- 622.1 Dysplasia of cervix (uteri)
- 784.9 Other symptoms head and neck
- 591 #N/A
- 374 Entropion and trichiasis eyelid
- 735 Hallux valgus (acquired)
- 783.4 Lack expected normal physical development
- 642 Essential hypertension preg
- 374.3 Ptosis of eyelid
- 375 Dacryoadenitis
- 790.9 Other non-specified findings exam blood
- 313 Child/Adolescent disturbance with anxiety/fear
- 426 Atrioventricular block complete
- 676.9 Disorders lactation nos preg

- 669 Maternal distress
- 592.1 Calculus of ureter
- 540 AC appendicitis w gen peritonit
- 476 Chronic laryngitis
- 366 Infant/juvenile/presen cataract
- 310 Frontal lobe syndrome
- 368 Amblyopia ex anopsia
- 701.1 Keratoderma acquired
- 735.4 Other hammer toe (acquired)
- 658.1 Premature rupture of membranes
- 429.2 Cardiovascular disease unspecified
- 781.9 Other symptoms nervous/musculoskeletal system
- 695.8 Other erythematous conditions
- 701.8 Other Hypertroph/atroph condition skin
- 312 Unsocialized disturbance of conduct
- 470 Deflected nasal septum
- 38.9 Unspecified septicemia
- 296.1 Manic-depressive psychiatric depression
- 205 Acute myeloid leukemia
- 646 Papyraceous fetus
- 578.9 Hemorrhage of GI tract unspecified
- 977 Poisoning by dietetics
- V70.9 Unspecified general medical exam
- 425.4 Other primary cardiomyopathies
- 703.8 Other diseases of nail
- 370 Corneal ulcer
- 211 Benign neoplasm of esophagus
- 651 Twin pregnancy
- 211.3 Benign neoplasm of colon
- 411 #N/A
- 304.7 Drug dependence morphine with other
- 660 Obstruction malposition fetus
- 477.8 Allergy rhinitis D/T other allergy
- 785.9 Other symptoms cardiovascular system
- 656 fetal-maternal hemorrhage
- 715.06 #N/A
- 362.1 Other backgr retinopthy/vasc chng
- 641 Placenta previa no hemorrhage
- 296.3 Manic-depress psych circ/depression
- 964.2 Poisoning by anticoagulants
- 173.3 Mal neo skin other/unspecified face
- 715.1 Loc prim osteoarth/allied dis
- 980 Toxic effect of ethyl alcohol
- 569.8 Other disorders of intestine
- 729.47 #N/A

- 364 Acute/Subacute iridocyclitis
- 760 Maternal hypertension disorder affecting fetus/newborn
- 440.2 Atherosclerosis arteries extrem
- 959.9 Other/unspecified injury unspecified site
- 635 Legal abortion w pelvic infect
- 661 Primary uterine inertia
- 378 Converg concomitant strabismus
- 721.3 Lumbosacral spondylosis no myelopathy
- 769 #N/A
- 721.1 Cervical spondylosis w myelopathy
- 361 Retinal detach with retinal defect
- 379.2 Disorders of vitreous body
- 362.3 Retinal vascular occlusion
- 371 Corneal scars and opacities
- 655 CNS malformation in fetus
- 735.2 Hallux rigidus
- V42.6 Lung replaced by transplant
- 799.1 Respiratory failure
- 367.2 Astigmatism
- 365 Borderline glaucoma
- V81.2 Spec screen other/nos cardiovascular
- 366.1 Senile cataract
- 367.1 Myopia
- 654.2 Uterine scar previous surgery
- 362.8 Other retinal disorders
- 377 Papilledema
- 370.2 Other superficial keratit no conjunct
- 370.3 Certain types keratoconjunctivitis
- 379.3 Aphakia and other disorders lens
- 362.5 Degeneration macular/post pole
- 765.1 Other preterm infants
- 250.4 Diabetes with ophthalmic management
- 371.9 Unspecified corneal disorder
- 100 Leptospirosis icterohemorrhagic
- 234.8 Carcinoma in situ other specified site
- 353.8 Other nerve root/plexus disorders
- V23.9 Supervision unspecified high risk pregnancy
- V60.2 Inadequate maternal resources
- 362 Diabetic retinopathy
- 365.1 Open-angle glaucoma
- 366.5 After-cataract
- 367 Hypermetropia
- 785.5 Shock without mention of trauma
- V71.7 Observation suspected cardiovascular disorder

Procedure codes:

- 03.01AA Diagnostic interview and evaluation, unqualified {After hours time premium}
- 03.03LA Diagnostic interview and evaluation, described as limited {Special callback to hospital emergency/outpatient department, AACC, UCC, auxiliary hospital or nursing home, when specially called from home or office, weekdays 1700-2200 hours, weekends and statutory holidays 0700-2200 hours}
- 98.22A Suture of skin and subcutaneous tissue of other sites {Laceration, face, up to 2.5 cms (1 unit) or body, up to 5 cms (1 unit)}
- 87.54A Fetal monitoring, unqualified {Interpretation of non-stress test}
- 03.08A Consultation, described as comprehensive {Comprehensive consultation}
- 03.01LJ Diagnostic interview and evaluation, unqualified {Physician or podiatric surgeon to physician telephone or telehealth videoconference consultation, consultant, weekdays 0700 to 1700 hours}
- 03.38R Other nonoperative respiratory measurements {Interpretation of diagnostic procedures involving vitalometry}
- 03.52B Other electrocardiogram {Electrocardiogram, interpretation}
- 03.03MD Diagnostic interview and evaluation, described as limited {Special callback to hospital emergency/outpatient department, AACC, UCC, auxiliary hospital or nursing home, when specially called from home or office, any day (2400-0700 hours)}
- 03.03MC Diagnostic interview and evaluation, described as limited {Special callback to hospital emergency/outpatient department, AACC, UCC, auxiliary hospital or nursing home, when specially called from home or office, any day (2200-2400 hours)}
- 03.05WT Patient Assessment/Evaluation {Time allotted for patient who did not attend appointment, per 15 minutes}
- 03.07A Consultation, described as limited {Minor consultation}
- 03.03AR Diagnostic interview and evaluation, described as limited {Urgent or priority attendance on hospital inpatient or long term care inpatient, at request of facility staff when physician is already on site.}
- 98.89E Other invasive diagnostic procedures on skin and subcutaneous tissue {Skin test, airborne allergens, intradermal or prick, per test}
- 13.53B Injection of steroid {Intralesional injection(s) of steroid}
- 1.22 Other nonoperative colonoscopy {Other nonoperative colonoscopy}
- 98.22B Suture of skin and subcutaneous tissue of other sites {Laceration, face, over 2.5 cms (1 unit) and/or body, over 5 cms (1 unit)} <For each layer or unit, refer to Price List>
- 75.64 Vasectomy (complete) (partial)
- 03.05R Other diagnostic interview and evaluation {Special callback to hospital inpatient, weekends and statutory holidays 0700-2200 hours}
- 98.11A Debridement of wound or infected tissue {Non-functional area, up to 32 total square cms}
- 1.14 Other nonoperative gastroscopy <Esophagogastroscopy>
- 13.99J Other diagnostic interview and evaluation {Medical emergency detention time, per 15 minutes}
- 8.45 Family therapy {Assessment or therapy of a family, requiring comprehensive psychiatric or family systems evaluation, first full 45 minutes or major portion thereof for the first call when only one call is claimed}

- 13.99JA Other miscellaneous diagnostic & therapeutic procedures NEC {Management of complex labour, per 15 minutes}
- 86.9D Cesarean section of unspecified type {Cesarean section of unspecified type following trial of labour for any reason}
- 03.01LM Diagnostic interview and evaluation, unqualified {Patient care advice to active treatment facility worker or nurse practitioner in relation to the obstetrical outpatient, weekdays 0700 - 1700 hours}
- 03.01LO Diagnostic interview and evaluation, unqualified {Patient care advice to active treatment facility worker or nurse practitioner in relation to the obstetrical outpatient, any day 2200 - 0700 hours}
- 57.21A Fulguration of lesion of large intestine {Polypectomy of large intestine, additional benefit}
- 03.01LI Diagnostic interview and evaluation, unqualified {Physician to physician or podiatric surgeon telephone or telehealth videoconference consultation, referring physician, any day 2200 to 0700 hours}
- 98.11D Debridement of wound or infected tissue {Functional area, up to 32 total square cms}
- 37.91A Lingual frenotomy {Release of simple tongue tie, clipping}
- 03.01LN Diagnostic interview and evaluation, unqualified {Patient care advice to active treatment facility worker or nurse practitioner in relation to the obstetrical outpatient, weekdays 1700 - 2200 hours, weekends and statutory holidays 0700 - 2200 hours}
- 03.05FG Other diagnostic interview and evaluation {Follow-up care of a patient remaining in a non-rotation duty emergency department after awaiting further evaluation, treatment, and/or waiting for a bed, transfer to another facility, or requiring extended care by a physician 1700 - 2200 hours, weekday, 0700 - 2200 hours weekend and statutory holiday}
- 09.01A Limited eye examination {Biomicroscopy (slit lamp examination)}
- 03.05QB Other diagnostic interview and evaluation {Special callback to hospital inpatient, (2400-0700 hours)}
- 87.54B Interpretation and supervision of continuous fetal monitoring (includes application of internal electrode)
- 03.05QA Other diagnostic interview and evaluation {Special callback to hospital inpatient, (2200-2400 hours)}
- 66.91A Percutaneous abdominal paracentesis {Paracentesis}
- 01.22A Other nonoperative colonoscopy for screening of high risk patients
- 03.05FF Other diagnostic interview and evaluation {Follow-up care of a patient remaining in a non-rotation duty emergency department after awaiting further evaluation, treatment, and/or waiting for a bed, transfer to another facility, or requiring extended care by a physician, 0700 - 1700 hours, weekdays}
- 03.38E Other nonoperative respiratory measurements {Vitalometry, before and after bronchodilators}
- 03.01LK Diagnostic interview and evaluation, unqualified {Physician or podiatric surgeon to physician telephone or telehealth videoconference consultation, consultant, weekdays 1700 to 2200 hours, weekends and statutory holidays 0700 to 2200 hours}
- 03.12A Measurements and manual examination of nervous system and sense organs {Intraocular pressure measurement, unilateral or bilateral}

- 13.59K Other injection or infusion of other therapeutic or prophylactic substance {Injection of Botulinum A Toxin} <For treatment of spasticity due to upper motor neuron injury or disease>
- 86.9C Cesarean section of unspecified type {Elective Cesarean section, any approach}
- 09.43A Audiological evaluation {Pure tone audiometry, technical}
- 98.12Q Local excision or destruction of lesion or tissue of skin and subcutaneous tissue {Removal of (any method)} <<Multiple dysplastic or localized carcinomatous lesions of the skin>>
- 08.12A Psychiatric commitment evaluation {Certification under the Mental Health Act}
- 08.19F Other psychiatric evaluation and interview {Formal, scheduled, professional conference related to the care and treatment of a psychiatric patient with other physician(s), and/or direct therapeutic supervision of, allied health professionals, educational, correctional and other community agencies on behalf of a specific patient, provided by the physician most responsible for the patient's care, per 15 minutes or major portion thereof}
- 13.99E Other miscellaneous diagnostic and therapeutic procedures NEC {Resuscitation, full 60 minutes or a portion thereof for the first call when only one call is claimed}
- 16.91C Injection of anesthetic into spinal canal for analgesia {Epidural catheter insertion for labour analgesia including set-up and initial injection}
- 01.24B Other non-operative proctosigmoidoscopy {Flexible proctosigmoidoscopy, diagnostic only}
- 03.05T Other diagnostic interview and evaluation {Formal, scheduled, professional interview relating to the care and treatment of a palliative care patient with other physicians, family, and/or direct therapeutic supervision of allied health professionals or community agencies, on behalf of a specific patient, full 15 minutes or major portion thereof for the first call when only one call is claimed}
- 13.99H Other miscellaneous diagnostic & therapeutic procedures NEC {Critical care of severely ill or injured patient in a hospital emergency department requiring major treatment intervention(s), per 15 minutes}
- 65.01A Repair of inguinal hernia, unqualified {Repair of inguinal hernia - incarcerated, obstructed or strangulated}
- 97.81 Percutaneous (needle) biopsy of breast
- 16.91G Insertion of anaesthetic into spinal canal for analgesia {Epidural analgesia for labour and delivery, monitoring and/or top-up/adjustment, each additional full 5 minutes, per patient}
- 03.01O Diagnostic interview and evaluation, unqualified {Physician to Physician E-Consultation, consultant}
- 03.05V Other diagnostic interview and evaluation {Formal, scheduled, professional interview relating to the care and treatment of a patient with chronic pain with other physicians, and/or direct therapeutic supervision of allied health professionals or community agencies, on behalf of a specific patient, per 15 minutes}
- 63.14 Laparoscopic cholecystectomy
- 65.49A Other repair of umbilical hernia {Repair of umbilical and/or epigastric hernia}
- 98.13B Radical excision of skin lesion {Excision of large malignant facial lesion with primary closure}
- 03.07B Consultation, described as limited {Repeat consultation}
- 10.16A Insertion of other vaginal pessary {Pessary fitting}
- 69.94 Insertion of indwelling urinary catheter

- 78.99B Excision of paratubal or fimbrial cysts {Other tubal sterilization, any method}
- 84.21B Mid forceps delivery with episiotomy {Assisted mid-cavity delivery, forceps or vacuum, with or without rotation}
- 91.01L Closed reduction of fracture (without internal fixation), radius and ulna {Greenstick}
- 95.09A Incision of other soft tissue {Removal of deep foreign body, with or without imaging, full 15 minutes of operating time or major portion thereof for the first call when only one call is claimed}
- 98.53 Advancement of flap or pedicle graft (no donor defect)
- 03.04K Diagnostic interview and evaluation, described as comprehensive {Comprehensive geriatric assessment, first full 90 minutes}
- 13.55A Chemotherapy<That for treatment of malignant disease>
- 13.59B Injection or infusion of other therapeutic or prophylactic substance NEC {Intravenous injections}
- 13.59C Injection or infusion of other therapeutic or prophylactic substance NEC {Initiation of intravenous}
- 36.99C Other dental operations NEC {Dental rehabilitation (extensive must exceed one hour), anaesthetic benefit}
- 59.1 A Drainage of appendiceal abscess {Appendectomy with or without abscess}
- 65.61A Repair of incisional hernia with graft or prosthesis {Repair of incisional hernia including mesh, if used}
- 01.22C Other nonoperative colonoscopy for screening of average risk patients.
- 03.05SA Other diagnostic interview and evaluation {Professional interview relating to care and treatment of a patient with other physicians, family, allied health professionals or community agencies, per 15 minutes}
- 16.81A Spinal tap {For diagnosis or imaging studies}
- 57.21C Fulguration of lesion of large intestine {Removal of sessile polyp, additional benefit}
- 65.11A Repair of inguinal hernia, unqualified, with graft or prosthesis {Repair of recurrent inguinal hernia, including mesh, if used}
- 79.29E Other excision or destruction of lesion or tissue of cervix NEC {Biopsy of cervix}
- 84.21C Mid forceps delivery with episiotomy {Lower cavity assisted delivery (greater than or equal to +2 station)}
- 87.98C Delivery NEC {Vaginal delivery following trial of labour after previous cesarean section}
- 91.01C Closed reduction of fracture (without internal fixation), radius and ulna {Radius, shaft}
- 91.01K Closed reduction of fracture (without internal fixation), radius and ulna {Undisplaced}
- 91.02A Closed reduction of fracture, carpals and metacarpals {Metacarpal}
- 91.71 Closed reduction of dislocation of elbow
- 98.52A Cutting and preparation of flap or pedicle graft {Less than 2 cms}
- 98.52C Cutting and preparation of flap or pedicle graft {2-5 cms}
- 03.01C Telehealth assistance service
- 3.26 Gynecological examination
- 40 Incision and drainage of tonsil and peritonsillar structures
- 50.4 B Ligation and stripping of varicose veins {Ligation and stripping of long saphenous vein}
- 50.99B Other puncture of vein {Insertion of long dwelling intravascular catheter requiring subcutaneous tunnel}
- 66.83 Laparoscopy <Diagnostic, with or without biopsy>

- 78.52C Salpingectomy {Surgical treatment of ectopic pregnancy}
- 81.01D Dilation and curettage following delivery or abortion {D & C for missed abortion or following delivery}
- 83.2 B Other local excision or destruction of vulva and perineum {Other local excision or destruction of vulva and perineum}
- 87.6 Removal of retained placenta <Manual removal of retained placenta and membranes>
- 87.82 Repair of obstetric laceration of sphincter ani
- 91.01F Closed reduction of fracture (without internal fixation), radius and ulna {Colles}
- 91.02D Closed reduction of fracture (without internal fixation), carpals and metacarpals {Scaphoid}
- 91.03A Closed reduction of fracture (without internal fixation), phalanges of hand {Phalanx}
- 91.70A Closed reduction of dislocation of shoulder {Primary}
- 92.32B Excision of semilunar cartilage of knee {Arthroscopy knee, including menisectomy}
- 93.83H Other repair of shoulder {Rotator cuff repair, including tendon transfer}
- 01.22B Other nonoperative colonoscopy for screening of moderate risk patients
- 03.05UN Telephone contact {Telephone contact with a Medical Health Professional regarding advise or care of a patient, per 5 minutes}
- 03.52D Other electrocardiogram {Tape ECG - ambulatory ECG monitoring record (greater than 12 hours), interpretation}
- 10.04B Endotracheal intubation for aspiration of sputum {Intubation performed in an emergency room, AACC or UCC}
- 13.72A Other electric countershock of heart {Cardioversion}
- 13.99DD Other miscellaneous diagnostic & therapeutic procedures NEC {Non-surgical reduction of abdominal or inguinal hernia}
- 17.33 Release of carpal tunnel
- 22.13A Other excision of single lesion of eyelids {Excision of eyelid lesion requiring pathology analysis}
- 33.22A Local excision or destruction of intranasal lesion {Nasal polyp removal}
- 39.91B Labial frenotomy {Labial frenotomy} <That for clipping of frenulum of lip>
- 40.1 A Tonsillectomy without adenoidectomy {Tonsillectomy for patient under 14 years of age}
- 46.91 Other operations on thorax {Thoracentesis}
- 55.41B Endoscopic excision or destruction of lesion or tissue of stomach {Endoscopic gastric polypectomy(s)}
- 59 Appendectomy
- 59.0 A #N/A
- 65.01C Repair of inguinal hernia, unqualified {Incarcerated inguinal}
- 81.29C Other excision or destruction of lesion or tissue of uterine supports {Laparoscopy, for conservative procedures for endometriosis and/or lysis of adhesions first full 15 minutes of operating time or major portion thereof for the first call when only one call is claimed}
- 83.9 A Other operations on female genital organs NEC {Operations on the adnexa, any method}
- 89.41PA Bunionectomy with soft tissue correction and osteotomy of the first metatarsal {Bunionectomy with distal osteotomy of the first metatarsal or proximal phalanx}
- 91.01M Closed reduction of fracture (without internal fixation), radius and ulna {Closed reduction of fracture, radius and ulna, displaced}

- 91.05B Closed reduction of fracture (without internal fixation), tibia and fibula {Tibia, shaft, with or without fibula}
- 91.05H Closed reduction of fracture, tibula and fibula {Lateral malleolus}
- 92.32D Excision of semilunar cartilage of knee {Arthroscopy knee, including non-reconstructive procedures (loose body, plica, etc.)}
- 92.8 D Arthroscopy {Arthroscopy, (wrist, elbow, ankle, shoulder, knee) therapeutic intervention, including debridement/drilling, etc.}
- 93.59A Other total hip replacement {Total hip arthroplasty}
- 93.8 A Arthroplasty of upper extremity, except hand {Acromio-clavicular or sterno-clavicular}
- 93.96K Other repair of joint {Revision total joint arthroplasty with major reconstruction both sides including structural allograft/protrusio ring/custom implant}
- 94.21A Excision of lesion of tendon (sheath) of hand {Ganglion of hand}
- 97.11B Local excision of lesion of breast {Biopsy and/or local excision of lesion(s)}
- 97.27B Resection of quadrant of breast {Segmental resection, with formal axillary node dissection and/or sentinel node biopsy, with or without removal of pectoral muscles}
- 97.89A Other invasive diagnostic procedures on breast {Needle localization under mammographic control, single lesion}
- 98.03D Other incision with drainage of skin and subcutaneous tissue {Abscess requiring procedural sedation and extensive drainage and packing}
- 98.14A Excision of pilonidal sinus or cyst {Pilonidal cyst - excision or marsupialization}
- 98.55A Attachment of flap or pedicle graft to other sites {Less than 2 cms (insetting)}
- 98.55B Attachment of flap or pedicle graft to other sites {2-5 cms (insetting)}

Step 4 – Frequency of visits

The fourth step of the algorithm looked at the frequency of all visits to FP with no diagnostic or procedure codes excluded. If there is a tie in terms of most visits to a number of FPs, the tied FPs were carried forward and tie breakers were determined by subsequent steps.

Step 5 – Most recent visit

This step was the same as the final step in AH's four-cut methodology which was last (most recent) visit. Though the accuracy of this step isn't as high as other steps in the HQCA methodology, very few patients are assigned on this criterion alone.