# 2022


Best Practice:
Your primary care panel report
McTesterson, Sampleford
Report Issue: September 2022
PRIVATE AND CONFIDENTIAL
eHealth Saskatchewan
College of Medicine
SMA
SASKATCHEWAN MEDICAL ASSOCIATION
HEALTH QUALITY COUNCIL

This document summarizes the indicators, data sources, calculations, exclusions, and limitation for each metric in the 2022 version of the Best Practices Panel reports in lay terms.

Data are obtained from multiple Saskatchewan administrative health databases to create the Best Practice primary care panel reports. This document provides information on the technical details of each indicator included in the HQC Physician Panel Reports.

Indicators appear in this document in the same order as they do on the reports. The table on pages 2 & 3 outlines which data sources are used in each indicator.

| Data Sources Used | | |
|---|---|---|
| | • CDP-QIP | Chronic Disease Management – Quality Improvement Program |
| | • DAD | Discharge Abstract Database |
| | • Drug Plan | Drug Plan data (Adjudicated & Non-adjudicated) |
| | • NACRS | National Ambulatory Care Reporting System |
| | • Panorama Immunization | Panorama (Immunization) |
| | • PHRS | Person Health Registry System |
| | • Physician Services Claims File | MSB Billing data |

A key change in the 2022 report compared to previous report is the use of Health Network as a comparator instead of Saskatchewan. This change requires determining each report recipient's health network. As some physicians may work in several locations and potentially more than one network, the following network identification method was developed.

**Network Identification**

Method of identifying each family physician's "main" network

1. Count number of family physician visits per family physician per network (based on location of service in each billing record)
    a. "visit" counted as unique HSN per day per physician ID
2. Identify network in with the highest number of visits (for each physician)
3. Assign family physician to that network

**Limitation**:
Network is estimated - Some physicians may work in multiple clinics in multiple networks, this will categorize based on the network in which they have the highest volume of visits

| Report Page # | Indicators | New/ Altered? | PHRS | MSB billing | CDP-QIP | DAD | Drug Plan | NACRS | Panorama | HQC |
|---|---|---|---|---|---|---|---|---|---|---|
| **Panel Profile** | | | | | | | | | | |
| 6 | # of Visits you provided | y | | x | | | | | | |
| | # of Patients you saw | y | | x | | | | | | |
| | # of Patients on your panel | | x | x | | | | | | |
| | % of panel patients by "cut" | | x | x | | | | | | |
| | # of unassigned patients by network | y | x | x | | | | | | |
| | # of providers in your network | y | | x | | | | | | |
| 7 | % of panel patients by sex | | x | x | | | | | | |
| | % by age for each sex | | x | x | | | | | | |
| 8 | % of visits by age for each sex | | x | x | | | | | | |
| 9 | % of patients by usual provider continuity level | | | x | | | | | | |
| | % of patient visits by provider type by year | | | x | | | | | | |
| 10 | Top 10 conditions responsible for visits & % of visits by provider type | Y | | x | | | | | | |
| **Prevention** | | | | | | | | | | |
| 11 | % of children vaccinated against pertussis, measles, influenza, and meningococcal serogroup C disease by their 2nd birthday | y | x | | | | | | x | |
| | # of children on panel not fully vaccinated by their 2nd birthday | | x | | | | | | x | |
| | % of children vaccinated against pertussis, measles influenza and meningococcal serogroup C disease by their 7th birthday | y | x | | | | | | x | |
| | # of children on panel not fully vaccinated by their 7th birthday | | x | | | | | | x | |
| **Care Across the Continuum – Chronic Disease Management** | | | | | | | | | | |
| 12 | # of diabetic patients on panel | y | | x | | x | | | | x |
| | % of patients with diabetes on panel & network | y | | x | | x | | | | x |
| | Among diabetic patients, % with flow sheets | y | | x | x | x | | | | x |
| | Among diabetic patients, % with blood pressure < 130/80 | y | | x | x | x | | | | x |
| | Among diabetic patients, in 2021, % of patients <65, 65+ by A1C | y | | x | x | x | | | | x |
| 13 | # of CAD patients on panel | y | | x | | x | | | | x |
| | % of patients with CAD on panel, in network | y | | x | | x | | | | x |
| | Among CAD patients, % with flow sheets | y | | x | x | x | | | | x |
| | Among CAD patients, % with blood pressure < 140/90? | y | | x | x | x | | | | x |
| | Among CAD patients, % on Statins? | y | | x | | x | x | | | x |
| | Among CAD patients, % with LDL <= 2 mmol/L | y | x | x | x | x | | | | x |
| **Care Across the Continuum – Emergency Department Use** | | | | | | | | | | |
| 14 | % of patients with ED visits - panel, network | | | | | | | x | | |
| | % of ED visits by CTAS level for panel and network | | | | | | | x | | |
| | % of panel patients by volume of ED visits in 2021 | | | | | | | x | | |

| Report Page # | Indicators | New/ Altered? | PHRS | MSB billing | CDP-QIP | DAD | Drug Plan | NACRS | Panorama | HQC |
|---|---|---|---|---|---|---|---|---|---|---|
| | # of panel patients by number of ED visits | | | | | | | x | | |
| 15 | CTAS 4/5 ED visits by time of day | y | | | | | | x | | |
| **Care Across the Continuum – Acute Care Use** | | | | | | | | | | |
| 16 | % of patients admitted to hospitals in panel and network | | | | | x | | | | |
| | # of admissions to hospital | | | | | x | | | | |
| | Average LOS in hospital across panel and network | | | | | x | | | | |
| | Number of patients by number of hospitalizations | | | | | x | | | | |
| | Number of Hospitalizations by age cohort & admitting source (ED, other) for patients in panel and network | y | x | | | x | | | | |
| 17 | Top 10 conditions responsible for hospitalizations - number of patients on panel and network average | y | | | | x | | | | |
| | Top 10 conditions responsible for hospitalizations - number of admissions for panel and average for network | y | | | | x | | | | |
| | Top 10 conditions responsible for hospitalizations - average LOS for panel and network | y | | | | x | | | | |
| 18 | Number of admissions for Ambulatory Care Sensitive Conditions (ACSCs) by level of connectedness for panel and network average | y | | x | | x | | | | |
| | Average LOS for ACSCs by level of connectedness by panel and network | y | | x | | x | | | | |
| **Prescribing Patterns** | | | | | | | | | | |
| 19 | % of senior panel patients (65+) one 1, 2 or 3 Beers list drugs by panel and Network | y | x | x | | | x | | | |
| | % of senior panel patients (65+) are on 1 or more drugs chronically from Beers list for panel, and Network | y | x | x | | | x | | | |
| | % senior panel patients (65+) on top 5 most common drugs from Beers list by panel and Network | y | x | x | | | x | | | |
| 20 | % of senior panel patients receiving antipsychotics by year by panel and network | | x | x | | | x | | | |
| | Among those receiving antipsychotics, % by prescribing source | | x | x | | | x | | | |
| | Among those receiving antipsychotics, % by number of dispensations in the past year by panel and network | y | x | x | | | x | | | |
| 21 | % of panel patients receiving opioids by year by panel and network | | | x | | | x | | | |
| | Among those receiving opioids, % by prescribing source | | | x | | | x | | | |
| | Among those receiving opioids, % by number of dispensations in the past year by panel and network | y | | x | | | x | | | |
| 22 | % of panel patients receiving benzodiazepines by year by panel and Network | | | x | | | x | | | |
| | Among those receiving benzodiazepines, % by prescribing source | | | x | | | x | | | |
| | Among those receiving benzodiazepines, % by number of | y | | x | | | x | | | |

| Report Page # | Indicators | New/ Altered? | PHRS | MSB billing | CDP-QIP | DAD | Drug Plan | NACRS | Panorama | HQC |
|---|---|---|---|---|---|---|---|---|---|---|
| | dispensations in the past year by panel and network | | | | | | | | | |

| Report Page # | Contents | New/ Altered? |
|---|---|---|
| 0 | Title Page | |
| 1 | Table of Contents | |
| 2 | Acknowledgements | |
| 3 | Report overview | |
| 4 | Summary of changes | |
| 5 | 4-Cut method Q&A | |
| Panel Profile | | |
| 6 | **Indicator** | **# of Visits you provided** | y |
| | **Definition:** | Number of patient visits for which a family physician submitted billing records | |
| | **Calculation** | • Count number of unique HSNs by day for each physician ID# in 2019, 2020, and 2021<br>○ i.e. maximum one visit per HSN per physician per day<br>• Sum number of visits per day for all days in 2019, 2020, 2021 | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | • Slush physician numbers<br>• Slush/empty patient numbers<br>• Specialists | |
| | **Type** | Practice Characteristic | |
| | **Data Source/ Elements** | **Physician Services Claims file:** Patient HSN, Physician ID#, Date of service, Specialty | |
| | **Unit of Analysis** | Patient visits | |
| | **Limitations** | May underestimate visits if some are omitted from records (e.g., incomplete shadow billing). | |
| | **Indicator** | **# of Patients you saw** | y |
| | **Definition:** | Number of unique patients HSNs for whom a family physician submitted billing records | |
| | **Calculation** | • Count number of unique HSNs for each physician ID# for all days in 2019, 2020, 2021 | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | • Slush physician numbers<br>• Slush/empty patient numbers<br>• Specialists | |
| | **Type** | Practice Characteristic | |
| | **Data Source/ Elements** | **Physician Services Claims file:** Patient HSN, Physician ID#, Date of service, Specialty | |
| | **Unit of Analysis** | Patients | |
| | **Limitations** | May underestimate # of patients if some are omitted from records (e.g., incomplete shadow billing). | |
| | **Indicator** | **# of Patients on your panel** | |
| | **Definition:** | Number of unique HSNs assigned to a family physician's panel via the 4-cut method | |
| | **Calculation** | Sum number of patients added to a physician's panel in cuts 1, 2, 3 and 4:<br>- **Cut 1:** Patients who had all their family physician visits with that physician<br>- **Cut 2:** Patients who had most of their family physician visits with that physician | |

| | |
|---|---|
| | - **Cut 3:** Patients without a "most frequent" family physician but had their last physical exam with that physician<br>  o Physical exam fee codes: 3B, 4B, 52B, 64B<br>- **Cut 4:** Patients without a "most frequent" family physician and without a physical exam but had their last visit with that physician |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | • Slush doctor numbers<br>• Slush/empty patient numbers<br>• specialist visits<br>• Out-of-province claims<br>• patients not covered on December 31, 2021 |
| **Type** | Practice/Panel Characteristic |
| **Data Source/ Elements** | **Physician Services Claims File:** Patient ID, Physician ID, Date of Service, Fee Service Code<br>**PHRS:** Patient ID, insurance coverage start & end dates |
| **Unit of Analysis** | Patient |
| **Limitations** | May underestimate # of patients if some are omitted from records (e.g., incomplete shadow billing).<br>4-Cut method approximates physician panel based on patient activity, but estimated to be ~80% accurate, developed by Alberta Health |
| **Indicator** | **% of panel patients by "cut"** |
| **Definition:** | Proportion of patients on panel assigned by each "cut" |
| **Calculation** | $$\%\ of\ patients\ assigned_i = \frac{number\ of\ HSNs\ assigned_i}{total\ number\ of\ HSNs\ assigned}$$<br>Where $i$ = Cut #: 1,2,3,4 |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | • Slush doctor numbers<br>• Slush/empty patient numbers<br>• specialist visits<br>• Out-of-province claims<br>• patients not covered on December 31, 2021 |
| **Type** | Practice/Panel Characteristic |
| **Data Source/ Elements** | **Physician Services Claims File:** Patient ID, Physician ID, Date of Service, Fee Service Code<br>**PHRS:** Patient ID, insurance coverage start & end dates |
| **Unit of Analysis** | Patient |
| **Limitations** | May underestimate # of patients if some are omitted from records (e.g. incomplete shadow billing).<br>4-Cut method approximates physician panel based on patient activity, but estimated to be ~80% accurate, developed & tested by Alberta Health |
| **Indicator** | **# of unassigned patients by network** y |
| **Definition:** | Number of unique HSNs residing in each network with no family physician visits during analysis period |
| **Calculation** | Count number of HSNs by network where number of FP visits = 0 |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | • Slush doctor numbers<br>• Slush/empty patient numbers<br>• specialist visits<br>• Out-of-province claims<br>• patients not covered on December 31, 2021 |
| **Type** | Network Characteristic |

| | | | |
|---|---|---|---|
| | **Data Source/ Elements** | **Physician Services Claims File**: Patient ID, Physician ID, Date of Service,<br>**PHRS**: Patient ID, Health Network (mapped via postal code), insurance coverage start & end dates | |
| | **Unit of Analysis** | Patient | |
| | **Limitations** | May overestimate # of patients if some are omitted from records (e.g. incomplete shadow billing). | |
| | **Indicator** | **# of providers in your network** | y |
| | **Definition:** | Number of Family Physicians in the report recipient's primary health network (where they work the most) | |
| | **Calculation** | ***Step 1.*** Assign each family physician to a health network<br>• see Table 1 – Network Identification<br>***Step 2.*** Count number of family physicians assigned to each network | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | • Slush doctor numbers<br>• Slush/empty patient numbers<br>• specialist visits | |
| | **Type** | Network Characteristic | |
| | **Data Source/ Elements** | **Physician Services Claims File**: Physician ID, patient ID, Date of Service, Location of service | |
| | **Unit of Analysis** | Family Physicians | |
| | **Limitations** | Estimate of main network; may be affected by long-term locums, multiple practice locations | |
| *7* | **Indicator** | **% of panel patients by sex** | |
| | **Definition:** | % of panel patients stratified by sex (F/M/other) | |
| | **Calculation** | $$\%\ of\ panel\ patients_S = \frac{number\ of\ HSNs\ assigned_S}{total\ number\ of\ HSNs\ assigned}$$<br>Where $s$ = sex: F, M, other/unknown | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | • Slush doctor numbers<br>• Slush/empty patient numbers<br>• specialist visits<br>• Out-of-province claims<br>• unpanelled patients | |
| | **Type** | Panel Characteristic | |
| | **Data Source/ Elements** | **Physician Services Claims File:** Patient ID, Physician ID<br>**PHRS:** Patient ID, sex | |
| | **Unit of Analysis** | Patient | |
| | **Limitations** | Panel approximated | |
| | **Indicator** | **% by age for each sex** | |
| | **Definition:** | % of panel patients stratified by age for each sex (F/M/other) | |
| | **Calculation** | ***Step 1***: Calculate age of panelled patients:<br>- Patient age = 31/12/2021 – patient birthday (dd/mm/yyyy)<br>***Step 2***: Categorize patients by age cohort based on years of age using the following age cohorts:<br>- 0-5yrs old, 6-10, 11-15, 16-20 (5 year cohorts)<br>- 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, >80 (10-year cohorts)<br>***Step 3***: Calculate % of patients by age for each sex:<br>% females: Where ***s* = F**<br>$$\%\ of\ panel\ patients_{F,A} = \frac{number\ of\ HSNs\ assigned_{F,A}}{number\ of\ HSNs\ assigned_F}$$ | |

| | | |
|---|---|---|
| | | And<br>% males: Where $s$ **=M**<br>$$\%\ of\ panel\ patients_{M,A} = \frac{number\ of\ HSNs\ assigned_{M,A}}{number\ of\ HSNs\ assigned_{M}}$$<br>Where .<br>$A$ = age: 0-5, 6-10, 11-15, 16-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, >80 |
| | | ***Step 4:*** Repeat Steps 1-3 for patients on all physician panels in the health network |
| | **Calculation period** | January 1, 2019 – December 31, 2021 |
| | **Exclusions** | • Slush doctor numbers<br>• Slush/empty patient numbers<br>• specialist visits<br>• Out-of-province claims<br>• unpanelled patients |
| | **Type** | Panel Characteristic |
| | **Data Source/ Elements** | **Physician Services Claims File:** Patient ID, Physician ID<br>**PHRS:** Patient ID, sex, Date of birth |
| | **Unit of Analysis** | Patient |
| | **Limitations** | Panel approximated; age calculated at end of analysis period<br>Network estimated |
| 8 | **Indicator** | **% of visits by age for each sex** |
| | **Definition:** | % of report recipient's visits by patient age for each sex |
| | **Calculation** | Calculate % of patient visits by age for each sex (using age cohort assigned above)<br>% females: Where $s$ **= F**<br>$$\%\ of\ patient\ visits_{F,A} = \frac{number\ of\ patient\ visits\ with\ FP_{F,A}}{number\ of\ patient\ visits\ with\ \ FP\ visits_{F}}$$<br>And<br>% males: Where $s$ **=M**<br>$$\%\ of\ patient\ visits_{M,A} = \frac{number\ of\ patient\ visits\ with\ FP_{M,A}}{number\ of\ patient\ visits\ with\ FP_{M}}$$<br>Where<br>$A$ = age: 0-5, 6-10, 11-15, 16-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, >80 |
| | **Calculation period** | January 1, 2019 – December 31, 2021 |
| | **Exclusions** | • Slush doctor numbers<br>• Slush/empty patient numbers<br>• specialist visits<br>• Out-of-province claims<br>• unpanelled patients |
| | **Type** | Panel Characteristic |
| | **Data Source/ Elements** | **Physician Services Claims File**: Patient ID, Physician ID<br>**PHRS**: Patient ID, sex, Date of birth |
| | **Unit of Analysis** | Patient visits |
| | **Limitations** | Panel approximated; age calculated at end of analysis period |
| 9 | **Indicator** | **% of patients by usual provider continuity level** |
| | **Definition:** | % of patients in each provider continuity category:<br>- High = patients who had ≥ 80% of their FP visits with the report recipient<br>- Medium = patients with 41-79% of their FP visits with the report recipient<br>- Low = patients with ≤ 40% of their FP visits with the report recipient |

| | |
|---|---|
| | Will be calculated at 3 levels:<br>- Connectedness to you (report recipient)– see step 1 & 2 below<br>- Connectedness to your clinic (report recipients' clinic) - see step 3 & 4 below<br>- Network average – see step 1 & 5 below |
| **Calculation** | ***Step 1***: calculate each patient's continuity score and categorize them:<br>$$continuity\ score_i = \frac{Number\ of\ visits\ to\ panel\ FP_i}{Total\ number\ of\ FP\ visits_i}$$<br>where $i$ = 1…N (representing each patient in the physician's panel)<br>Based on continuity score, categorize patients by continuity level as follows:<br>• High: ≥ 0.80<br>• Medium: 0.41 – 0.79<br>• Low: ≤ 0.40 |
| | ***Step 2***: calculate % of patients by continuity score for each **panel**<br>$$\%\ of\ panel\ by\ continuity\ level_l = \frac{Number\ of\ panel\ patients_l}{\sum_l Number\ of\ panel\ patients_l}$$<br>Where $l$ = continuity level (high, medium, low) |
| | ***Step 3***: calculate each patient's continuity score by **clinic** and categorize them:<br>$$clinic\ continuity\ score_i = \frac{Number\ of\ visits\ to\ panel\ FP's\ clinic_i}{Total\ number\ of\ FP\ visits_i}$$<br>where $i$ = 1…N (representing each patient in the physician's panel)<br>Based on continuity score, categorize patients by continuity level as follows:<br>• High: ≥ 0.80<br>• Medium: 0.41 – 0.79<br>• Low: ≤ 0.40 |
| | ***Step 4***: calculate % of patients by **clinic** continuity score for each panel<br>$$\%\ of\ panel\ by\ clinic\ continuity\ level_{cl} = \frac{Number\ of\ panel\ patients_{cl}}{\sum_{cl} Number\ of\ panel\ patients_{cl}}$$<br>Where $cl$ = clinic continuity level (high, medium, low) |
| | ***Step 5***: calculate % of patients by continuity score for each physician's **network**<br>• As Step 2 above, but numerator and denominator summed across the panels of all FPs in the report recipient's health network<br>$$\%\ of\ network\ physician's\ panel\ patients\ \ by\ continuity\ level_{l,n} = \frac{\sum_n Number\ of\ panel\ patients_{l,n}}{\sum_{l,n} Number\ of\ panel\ patients_{l,n}}$$<br>Where $l$ = continuity level (high, medium, low) and $n$ = health network |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | • Patients with only 1 FP visit during analysis period |
| **Type** | Panel Characteristic |
| **Data Source/ Elements** | **Physician Services Claims File**: Patient ID, Physician ID, visit date, clinic ID, network |
| **Unit of Analysis** | patient |
| **Limitations** | Network estimated<br>Some physicians may work in multiple clinics; this will categorize based on 'main' clinic |
| **Indicator** | **% of patient visits by provider type by year** |
| **Definition:** | Proportion of panel patients' FP visits, by year, that were with<br>• report recipient,<br>• other FPs in the recipients' clinic, or |

| | | | |
|---|---|---|---|
| | | • other FPs not in the clinic. | |
| | **Calculation** | $\%\ of\ patient\ visits_{p,t} = \frac{number\ of\ panel\ patient\ FP\ visits_{p,t}}{Total\ number\ of\ panel\ patient\ FP\ visits_t}$<br>where $p$ = provider type: panel physician; other FPs in clinic; other FPs (outside clinic)<br>and $t$ = year: 2019; 2020; 2021 | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | None | |
| | **Type** | Panel Characteristic | |
| | **Data Source/ Elements** | **Physician Services Claims File**: Patient ID, Physician ID, visit date, clinic ID | |
| | **Unit of Analysis** | Visits, year | |
| | **Limitations** | Some physicians may work in multiple clinics; this will categorize based on 'main' clinic | |
| 10 | **Indicator** | **Top 10 conditions responsible for visits & % of visits by provider type (FP/other)** | Y |
| | **Definition:** | 10 most frequently occurring diagnosis codes corresponding to panel patients FP visits, and non-FP (specialist) visits and associated proportion of visits for each | |
| | **Calculation** | ***Step 1***: identify top 10 diagnoses<br>- Count number of visits report recipients' panel patients had with FP and non-FPs by diagnosis code (ICD9)<br>- Identify 10 most frequently occurring diagnoses for each provider category<br>***Step 2***: Calculate % of visits corresponding to each diagnosis, by provider type<br>$\%\ of\ visits_{d,p} = \frac{number\ of\ visits_{d,p}}{total\ visits_p}$<br>Where $p$ = provider type (FP, non-FP) and $d$ = diagnostic code | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | none | |
| | **Type** | Primary Care | |
| | **Data Source/ Elements** | **Physician Services Claims File**: Patient ID, Physician ID, visit date, diagnosis, specialty | |
| | **Unit of Analysis** | visit | |
| | **Limitations** | Only one diagnostic code available for each visit; may under-represent some comorbid conditions<br>Accuracy may be affected by completeness of shadow billing records | |
| Prevention | | | |
| 11 | **Indicator** | **% of children vaccinated against pertussis, measles, influenza, and meningococcal serogroup C disease by their 2nd birthday** | y |
| | **Definition:** | % of children on report recipients' panel who had their 2nd birthday within the reports analysis period who received the required number of doses of each vaccine prior to their 2nd birthday | |
| | **Calculation** | ***Step 1***: identify panel children with birthdays within analysis period<br>- Birthday between January 1, 2015 and December 31, 2021<br>***Step 2***: Count number of valid doses of each vaccine each child received before their 2nd birthday (date of vaccination < [date of vaccination – birth date])<br>***Step 3***: Count number of children meeting the following dose requirements:<br>▪ pertussis ≥ 4<br>▪ measles ≥ 2<br>▪ meningitis C ≥ 1<br>▪ influenza ≥ 1 | |

| | |
|---|---|
| | ***Step 4***:<br>$$\%\ fully\ vaccinated_v = \frac{number\ meeting\ dose\ requirements_v}{total\ number\ of\ children\ in\ age\ cohort}$$<br>Where $v$ = vaccine |
| **Calculation period** | January 1, 2015 – December 31, 2021 |
| **Exclusions** | none |
| **Type** | Vaccination Indicator |
| **Data Source/ Elements** | **PHRS**: Patient ID, birth date<br>**Panorama (Immunization)**: patient ID, vaccine administration date, vaccine, validity indicator |
| **Unit of Analysis** | Patient |
| **Limitations** | none |
| **Indicator** | **# of children on panel not fully vaccinated by their 2nd birthday** |
| **Definition:** | number of children on report recipients' panel who had their 2nd birthday within the reports analysis period who did not receive the required number of doses of each vaccine prior to their 2nd birthday |
| **Calculation** | From previous metric:<br>$$\#\ not\ fully\ vaccinated_v = total\ number\ of\ children\ in\ age\ cohort - number\ meeting\ dose\ requirements_v$$<br>Where $v$ = vaccine |
| **Calculation period** | January 1, 2015 – December 31, 2021 |
| **Exclusions** | none |
| **Type** | Vaccination Indicator |
| **Data Source/ Elements** | **PHRS**: Patient ID, birth date<br>**Panorama (Immunization)**: patient ID, vaccine administration date, vaccine, validity indicator |
| **Unit of Analysis** | Patient |
| **Limitations** | none |
| **Indicator** | **% of children vaccinated against pertussis, measles influenza and meningococcal serogroup C disease by their 7th birthday** y |
| **Definition:** | % of children on report recipients' panel who had their 7th birthday within the reports analysis period who received the required number of doses of each vaccine prior to their 7th birthday |
| **Calculation** | ***Step 1***: identify panel children with birthdays within analysis period<br>- Birthday between January 1, 2010 and December 31, 2012<br>***Step 2***: Count number of valid doses of each vaccine each child received before their 2nd birthday (date of vaccination < [date of vaccination – birth date])<br>***Step 3***: Count number of children meeting the following dose requirements:<br>▪ pertussis ≥ 5<br>▪ measles ≥ 2<br>▪ meningitis C ≥ 1<br>▪ influenza ≥ 1<br>***Step 4***:<br>$$\%\ fully\ vaccinated_v = \frac{number\ meeting\ dose\ requirements_v}{total\ number\ of\ children\ in\ age\ cohort}$$<br>Where $v$ = vaccine |
| **Calculation period** | January 1, 2010 – December 31, 2021 |
| **Exclusions** | none |
| **Type** | Vaccination Indicator |
| **Data Source/ Elements** | **PHRS**: Patient ID, birth date |

| | | | |
|---|---|---|---|
| | | **Panorama (Immunization):** patient ID, vaccine administration date, vaccine, validity indicator | |
| | **Unit of Analysis** | Patient | |
| | **Limitations** | none | |
| | **Indicator** | **# of children on panel not fully vaccinated by their 7th birthday** | |
| | **Definition:** | number of children on report recipients' panel who had their 7th birthday within the reports analysis period who did not receive the required number of doses of each vaccine prior to their 7th birthday | |
| | **Calculation** | From previous metric:<br>$\#\ not\ fully\ vaccinated_v = total\ number\ of\ children\ in\ age\ cohort - number\ meeting\ dose\ requirements_v$<br>Where $v$ = vaccine | |
| | **Calculation period** | January 1, 2010 – December 31, 2021 | |
| | **Exclusions** | none | |
| | **Type** | Vaccination Indicator | |
| | **Data Source/ Elements** | **PHRS:** Patient ID, birth date<br>**Panorama (Immunization):** patient ID, vaccine administration date, vaccine, validity indicator | |
| | **Unit of Analysis** | Patient | |
| | **Limitations** | none | |
| Care across the continuum | | | |
| 13 | **Indicator** | **# of diabetic patients on panel** | y |
| | **Definition:** | Number of diabetic patients on the report recipient's panel | |
| | **Calculation** | Count number of unique HSNs from the "HSNs list with diabetes" table provided by HQC for each report recipient's panel | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | none | |
| | **Type** | Chronic Disease Management Indicator | |
| | **Data Source/ Elements** | "HSNs list with diabetes" table provided by HQC<br>- Diabetic cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File** **Discharge Abstract Database**<br>**Physician Services Claims File:** Patient ID, Physician ID, Date of service | |
| | **Unit of Analysis** | Patients | |
| | **Limitations** | None | |
| | **Indicator** | **% of patients with diabetes on panel & network** | y |
| | **Definition:** | Proportion of diabetic patients on the report recipient's panel, and among the panels of other physicians in the network | |
| | **Calculation** | **Panel:**<br>$\%\ of\ panel\ patients\ with\ diabetes = \frac{\#\ of\ unique\ panel\ HSNs_D}{\#\ of\ unique\ panel\ HSNs}$<br>where $D$ = patients in diabetic patient list provided by HQC<br>**Network:** Repeat above for patients on all physician panels in the health network | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | none | |
| | **Type** | Chronic Disease Management Indicator | |
| | **Data Source/ Elements** | "HSNs list with diabetes" table provided by HQC<br>- Diabetic cases identified based on the validated CCDSS case definition | |

| | | |
|---|---|---|
| | criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File**<br>**Discharge Abstract Database**<br>**Physician Services Claims File**: Patient ID, Physician ID, Date of service | |
| **Unit of Analysis** | Patients | |
| **Limitations** | Network estimated | |
| **Indicator** | **Among diabetic patients, % with flow sheets** | y |
| **Definition:** | Proportion of panel patients with diabetes who had Chronic Disease Management – Quality Improvement Program (CDM-QIP) flow sheets in 2021 | |
| **Calculation** | ***Step 1***: Flag panel patients with diabetes who had visits in 2021 and flow sheet for diabetes<br>- Use CDM-QIP dataset:<br>o If at least 1 "Diabetes + CAD" or "Diabetes" flow sheets with visit date in 2019 are available, "DB flow flag" = 1<br>o else "DB flow flag" = 0<br>***Step 2***: Calculate % of panel diabetic patients with flow sheets<br>$$\%\ of\ panel\ diabetic\ patients\ with\ flow\ sheets = \frac{\#\ of\ unique\ panel\ HSNs_{D.f}}{\#\ of\ unique\ panel\ HSNs_{D}}$$<br>where $D$ = patients in diabetic patient list provided by HQC and $f$ = "DB flow flag"=1<br>***Step 3***: Calculate % of panel diabetic patients with NO flow sheets<br>$$\%\ of\ diabetic\ patients\ with\ NO\ flow\ sheets = 100\% - \%\ of\ diabetic\ patients\ with\ flow\ sheets$$ | |
| **Calculation period** | January 1, 2021 – December 31, 2021 | |
| **Exclusions** | None | |
| **Type** | Chronic Disease Management Indicator | |
| **Data Source/ Elements** | "HSNs list with diabetes" table provided by HQC<br>- Diabetic cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File**<br>**Discharge Abstract Database**<br>**CDM-QIP**: Patient ID, Record date<br>**Physician Services Claims File**: Patient ID, Physician ID, Date of service | |
| **Unit of Analysis** | Patients | |
| **Limitations** | None | |
| **Indicator** | **Among diabetic patients, % with blood pressure < 130/80** | y |
| **Definition:** | Proportion of panel patients with diabetes flow sheets with BP < 130/80 mmHg | |
| **Calculation** | ***Step 1***: Flag panel patients with diabetes who had visits in 2021 and BP < 130/80<br>- Use CDM-QIP dataset:<br>o For those with "DB flow flag = 1 (see indicator above),<br>o If the most recent flow sheet (Max date) BP <130/80, then "DB BP flag" = 1; else "DB BP flag" = 0<br>***Step 2***: Calculate % of panel diabetic patients with BP < 130/80<br>$$\%\ of\ panel\ diabetic\ patients\ with\ BP < 130/80 = \frac{\#\ of\ unique\ panel\ HSNs_{f.bp}}{\#\ of\ unique\ panel\ HSNs_{f}}$$ | |

| | |
|---|---|
| | where $f$ = patients with "DB flow flag" = 1<br>$bp$ = patients with "DB BP flag" = 1 |
| | ***Step 3***: Calculate % of panel diabetic patients with flows sheets with BP ≥ 130/80<br>$\%\ of\ diabetic\ patients\ with\ BP\ \geq 130/80 = 100\% - \%\ of\ diabetic\ patients\ with\ BP\ < 130/80$ |
| **Calculation period** | January 1, 2021 – December 31, 2021 |
| **Exclusions** | • Diabetic patients without flow sheets |
| **Type** | Chronic Disease Management Indicator |
| **Data Source/ Elements** | "HSNs list with diabetes" table provided by HQC<br>- Diabetic cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File**, **Discharge Abstract Database**<br>**CDM-QIP**: Patient ID, Record date, BP_D, BP_S<br>**Physician Services Claims File**: Patient ID, Physician ID, Date of service |
| **Unit of Analysis** | Patients |
| **Limitations** | Blood pressure not available for patients without flow sheets |
| **Indicator** | **Among diabetic patients, in 2021, % of patients < 65, 65+ by A1C Category** y |
| **Definition:** | Proportion of panel patients with diabetes and flow sheets stratified by their age and A1C category |
| **Calculation** | ***Step 1***: Categorize panel patients by age (65+ or <65 y/o)<br>- Use PHRS dataset:<br>o Patient age = 31/12/2021 – patient birthday (dd/mm/yyyy)<br>o Categorize panel patients aged "65+" or "<65" |
| | ***Step 2***: Categorize panel patients with diabetes and flow sheets in 2021 by their A1C level<br>- Use CDM-QIP dataset:<br>• If "DB flow flag" = 1 (see indicators above)<br>• If the most recent flow sheet (max date) had:<br>o A1C < 7% then "A1C Category" = 1<br>o Elseif A1C > 8.5% then "A1C Category" = 3<br>o Else "A1C Category" = 2 |
| | ***Step 3***: Calculate % of panel diabetic patients with flows sheets by their age and A1C Category<br>$\%\ of\ panel\ diabetic\ patients_{A,AC} = \frac{\#\ of\ unique\ panel\ HSNs_{f.A.AC}}{\#\ of\ unique\ panel\ HSNs_{f.A}}$<br>where $f$ = patients with "DB flow flag" = 1<br>$A$ = "65+", "<65" and<br>$AC$ = A1C categories (1-3) |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | • Diabetic patients without flow sheets |
| **Type** | Chronic Disease Management Indicator |
| **Data Source/ Elements** | "HSNs list with diabetes" table provided by HQC<br>- Diabetic cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File**, **Discharge Abstract Database**<br>**CDM-QIP**: Patient ID, Record date, A1C_VL, A1C_DT |

| | | | |
|---|---|---|---|
| | | **Physician Services Claims File**: Patient ID, Physician ID, Date of service<br>**PHRS:** Patient ID, birth date | |
| | **Unit of Analysis** | Patients | |
| | **Limitations** | A1C levels are not available for patients without flow sheets | |
| 14 | **Indicator** | **# of CAD patients on panel** | y |
| | **Definition:** | Number of CAD patients on the report recipient's panel | |
| | **Calculation** | Count number of unique HSNs from the "HSNs list with CAD" table provided by HQC for each report recipient's panel | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | none | |
| | **Type** | Chronic Disease Management Indicator | |
| | **Data Source/ Elements** | "HSNs list with CAD" table provided by HQC;<br>- CAD cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File**, **Discharge Abstract Database**<br>**Physician Services Claims File**: Patient ID, Physician ID, Date of service | |
| | **Unit of Analysis** | Patients | |
| | **Limitations** | None | |
| | **Indicator** | **% of patients with CAD on panel, in network** | y |
| | **Definition:** | Proportion of CAD patients on the report recipient's panel and among panels of other FPs in the same network | |
| | **Calculation** | **Panel:**<br>$$\%\ of\ panel\ patients\ with\ CAD = \frac{\#\ of\ unique\ panel\ HSNs_{CAD}}{\#\ of\ unique\ panel\ HSNs}$$<br>where $CAD$ = patients in CAD patient list provided by HQC<br>**Network:** Repeat above for patients on all physician panels in the health network | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | none | |
| | **Type** | Chronic Disease Management Indicator | |
| | **Data Source/ Elements** | "HSNs list with CAD" table provided by HQC;<br>- CAD cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File**, **Discharge Abstract Database**<br>**Physician Services Claims File**: Patient ID, Physician ID, Date of service | |
| | **Unit of Analysis** | Patients | |
| | **Limitations** | Network estimated | |
| | **Indicator** | **Among CAD patients, % with flow sheets** | y |
| | **Definition:** | Proportion of panel patients with CAD who had CDM-QIP flow sheets in 2021 | |
| | **Calculation** | ***Step 1***: Flag panel patients with CAD who had visits in 2021 and flow sheet usage<br>- Use CDM-QIP dataset:<br>o If "Diabetes + CAD", "CAD", or "CAD and Heart Failure" flow sheets with visit dates in 2021 are available, then "CAD flow flag" = 1; else "CAD flow flag" = 0<br>***Step 2***: Calculate % of panel CAD patients with flow sheets | |

| | |
|---|---|
| | $$\%\ of\ panel\ CAD\ patients\ with\ flow\ sheets = \frac{\#\ of\ unique\ panel\ HSNs_{CAD.f}}{\#\ of\ unique\ panel\ HSNs_{CAD}}$$<br>where $CAD$ = patients in CAD patient list provided by HQC and<br>$f$ = patients with "CAD Flow Flag" = 1 |
| | ***Step 3***: Calculate % of panel CAD patients with NO flow sheets<br>$$\%\ of\ CAD\ patients\ with\ NO\ flow\ sheets = 100\% - \%\ of\ CAD\ patients\ with\ flow\ sheets$$ |
| **Calculation period** | January 1, 2021– December 31, 2021 |
| **Exclusions** | none |
| **Type** | Chronic Disease Management Indicator |
| **Data Source/ Elements** | "HSNs list with CAD" table provided by HQC<br>- CAD cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File** **Discharge Abstract Database**<br>**CDM-QIP**: Patient ID, Record date<br>**Physician Services Claims File**: Patient ID, Physician ID, Date of service |
| **Unit of Analysis** | Patients |
| **Limitations** | None |
| **Indicator** | **Among CAD patients, % with blood pressure < 140/90?** y |
| **Definition:** | Proportion of panel patients with CAD flow sheets with BP < 140/90 mmHg |
| **Calculation** | ***Step 1***: Flag panel patients with CAD who had flow sheets in 2021 and BP < 140/90<br>- Use CDM-QIP dataset:<br>o If "CAD flow flag" = 1 (see indicator above) and<br>o If most recent flow sheet (max date) had BP <140/90, then "CAD BP flag" = 1; else "CAD BP flag" = 0 |
| | ***Step 2***: Calculate % of panel CAD patients with flow sheets with BP < 140/90<br>$$\%\ of\ CAD\ patients\ with\ BP < 140/90 = \frac{\#\ of\ unique\ panel\ HSNs_{f.bp}}{\#\ of\ unique\ panel\ HSNs_{f}}$$<br>Where $f$ = patients with "CAD flow flag" = 1<br>$bp$ = patients with "CAD BP flag" = 1 |
| | ***Step 3***: Calculate % of panel CAD patients with BP ≥ 140/90<br>$$\%\ of\ CAD\ patients\ with\ BP\ \geq 140/90 = 100\% - \%\ of\ CAD\ patients\ with\ BP\ < 140/90$$ |
| **Calculation period** | January 1, 2021 – December 31, 2021 |
| **Exclusions** | • Patients without flow sheets |
| **Type** | Chronic Disease Management Indicator |
| **Data Source/ Elements** | "HSNs list with CAD" table provided by HQC<br>- CAD cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File** **Discharge Abstract Database**<br>**CDM-QIP**: Patient ID, Record date, BP_D, BP_S<br>**Physician Services Claims File**: Patient ID, Physician ID, Date of service |

| | | |
|---|---|---|
| **Unit of Analysis** | Patients | |
| **Limitations** | Blood pressure only available for patients with flow sheets | |
| **Indicator** | **Among CAD patients, % on Statins?** | y |
| **Definition:** | Proportion of panel patients with CAD on Statins (Statins list with Drug Identification Numbers [DINs] will be provided by HQC) | |
| **Calculation** | ***Step 1***: Flag panel patients with CAD on Statins<br>- Use Drug Plan:<br>o a Statin drug dispensed between January 1, 2021 and December 31, 2021, then flag as 1; else flag as 0<br>***Step 2***: Calculate % of panel CAD patients on Statins<br>$$\%\ of\ CAD\ patients\ on\ Statins = \frac{\#\ of\ unique\ panel\ HSNs_{CAD.f}}{\#\ of\ unique\ panel\ HSNs_{CAD}}$$<br>where $CAD$ = patients in CAD patient list provided by HQC and $f$ = Flag: 1<br>***Step 3***: Calculate % of panel CAD patients NOT on Statins<br>$$\%\ of\ CAD\ patients\ NOT\ on\ Statins = 100\% - \%\ of\ CAD\ patients\ on\ Statins$$ | |
| **Calculation period** | January 1, 2021 – December 31, 2021 | |
| **Exclusions** | none | |
| **Type** | Chronic Disease Management Indicator | |
| **Data Source/ Elements** | "HSNs list with CAD" table provided by HQC<br>- CAD cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File**<br>**Discharge Abstract Database**<br>**Physician Services Claims File**: Patient ID, Physician ID, Date of service<br>**Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN) | |
| **Unit of Analysis** | Patients | |
| **Limitations** | None | |
| **Indicator** | **Among CAD patients, % with LDL <= 2 mmol/L** | y |
| **Definition:** | Proportion of panel patients with CAD flow sheets stratified by their LDL level | |
| **Calculation** | ***Step 1:*** Flag panel patients with CAD flow sheets who had visits in 2021 and LDL level ≤ 2 mmol/L<br>- Use CDM-QIP dataset:<br>o If "CAD flow flag" = 1and<br>o If the most recent (max visit date) LDL level ≤ 2 mmol/L then "LDL flag" = 1, else "LDL flag" = 0<br>***Step 2:*** Calculate % of panel CAD patients with LDL level ≤ 2 mmol/L<br>$$\%\ of\ CAD\ patients\ with\ LDL\ \leq 2\ mmol/L = \frac{\#\ of\ unique\ panel\ HSNs_{f.L}}{\#\ of\ unique\ panel\ HSNs_{f}}$$<br>where $f$ = patients with "CAD flow flag" = 1<br>$L$ = patients with "LDL Flag" = 1<br>***Step 3:*** Calculate % of panel CAD flow sheet patients with LDL level > 2 mmol/L<br>$$\%\ of\ CAD\ patients\ with\ LDL > 2\ mmol/L = 100\% - \%\ of\ CAD\ patients\ with\ LDL\ \leq 2\ mmol/L$$ | |
| **Calculation period** | January 1, 2021 – December 31, 2021 | |
| **Exclusions** | • Patients without flow sheets | |

| | | |
|---|---|---|
| | **Type** | Chronic Disease Management Indicator |
| | **Data Source/ Elements** | "HSNs list with CAD" table provided by HQC<br>- CAD cases identified based on the validated CCDSS case definition criteria based on physician visit records and hospitalizations<br>- Data sources access in HQC code: **Physician Services Claims File** **Discharge Abstract Database**<br>**CDM-QIP**: Patient ID, Record date, LDL_CHOL, LDL_CHOL_DT<br>**Physician Services Claims File**: Patient ID, Physician ID, Date of service |
| | **Unit of Analysis** | Patients |
| | **Limitations** | LDL results are not available for patients without flow sheets |
| 13 | **Indicator** | **% of patients with ED visits – panel, network** |
| | **Definition:** | Proportion of patients who visited an ED in last 3 calendar years in panel and network |
| | **Calculation** | ***Step 1:*** Link panel HSNs to NACRS data.<br>Count number of ED visits with date in Calculation Period for each HSN ("# ED visits")<br>– A "visit" is defined as unique HSN, Institution, and arrival date |
| | | ***Step 2: Panel***<br>$\%\ of\ panel\ patients\ with\ ED\ visits = \frac{number\ of\ unique\ panel\ HSNs\ with\ \#ED\ visits > 0}{total\ number\ of\ unique\ panel\ HSNs}$ |
| | | ***Step 3: Network:*** Repeat Step 2 for all patients on panels of physicians assigned to the report recipients' network. |
| | **Calculation period** | January 1, 2021 – December 31, 2021 |
| | **Exclusions** | none |
| | **Type** | Health System Use |
| | **Data Source/ Elements** | **NACRS**: key_hsn, arrv_date, inst_num |
| | **Unit of Analysis** | Patient |
| | **Limitations** | Visits to emergency departments that do not submit NACRS data will not be reflected<br>Network estimated |
| | **Indicator** | **% of ED visits by CTAS level for panel and network** |
| | **Definition:** | Proportion of ED visits among patients by Triage level for panel and network |
| | **Calculation** | $\%\ of\ ED\ visits\ by\ CTAS_i = \frac{total\ number\ of\ ED\ visits\ by\ panel\ HSNs_i}{total\ number\ of\ ED\ visits\ by\ panel\ HSNs} x100$<br>where $i$=1 to 5, other (CTAS level) |
| | | ***Network:*** Repeat above for all patients on panels of physicians assigned to the report recipients' network. |
| | **Calculation period** | January 1, 2019 – December 31, 2021 |
| | **Exclusions** | None (records without CTAS level will be grouped in "other") |
| | **Type** | Health System Use |
| | **Data Source/ Elements** | **NACRS:** key_hsn, arrv_date, tri_lev |
| | **Unit of Analysis** | Patient |
| | **Limitations** | Visits to emergency departments that do not submit NACRS data will not be reflected<br>Network estimated |
| | **Indicator** | **% of panel patients by volume of ED visits in 2021** |
| | **Definition:** | % of panel patients in with zero versus one or more ED visits within the calendar year of 2021 |
| | **Calculation** | ***Step 1:*** Count number of ED visits with arrival date in 2019 for each panel patient |

| | | | |
|---|---|---|---|
| | | HSN ("2021 visits")<br>– A "visit" is defined as unique HSN, Institution, and arrival date | |
| | | ***Step 2:***<br>$$\%\ of\ panel\ patients\ with\ 2021\ ED\ visits = \frac{number\ of\ panel\ HSNs\ with\ "2021\ visits" > 0}{total\ number\ of\ panel\ HSNs}$$ | |
| | | ***Step 3:***<br>$$\%\ of\ panel\ patients\ with\ 0\ ED\ visits = 1 - \%\ of\ panel\ patients\ with\ 2021\ ED\ visits$$ | |
| | **Calculation period** | January 1, 2021, to December 31, 2021 | |
| | **Exclusions** | none | |
| | **Type** | Health System Use | |
| | **Data Source/ Elements** | **NACRS:** key_hsn, arrv_date | |
| | **Unit of Analysis** | Patient | |
| | **Limitations** | Visits to emergency departments that do not submit NACRS data will not be reflected | |
| | **Indicator** | **# of panel patients by number of ED visits** | |
| | **Definition:** | # of panel patients by number of ED visits in 2021 | |
| | **Calculation** | Categorize and count patients based on "2021 visits" (see indicator above) as follows<br>• Count number of HSNs where "2021 visits" = 1<br>• Count number of HSNs where "2021 visits" = 2<br>• Count number of HSNs where "2021 visits" = 3 or 4<br>• Count number of HSNs where "2021 visits" ≥5 | |
| | **Calculation period** | January 1, 2021 to December 31, 2021 | |
| | **Exclusions** | None | |
| | **Type** | Health System Use | |
| | **Data Source/ Elements** | **NACRS:** key_hsn, arrv_date | |
| | **Unit of Analysis** | Patient | |
| | **Limitations** | Visits to emergency departments that do not submit NACRS data will not be reflected | |
| 16 | **Indicator** | **CTAS 4/5 ED visits by time of day** | y |
| | **Definition:** | Count number of panel patients' ED visits where CTAS level was 4 or 5 by the time of day they arrived at the ED (day, evening, night) by year | |
| | **Calculation** | ***Step 1:*** Identify panel patients' ED visits with CTAS level = 4 or 5. | |
| | | ***Step 2:*** Classify ED visits from Step 1 by arrival time:<br>• If arrival_time ≥ 0800 and <1700, set time_of_day = "daytime"<br>• Elseif arrival_time ≥1700 and <2200, set time_of_day = "evening"<br>• Else set time_of_day="night" | |
| | | ***Step 3:*** Count number of visits by time_of_day for each year: 2019, 2020, 2021 | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | • Visits without a valid arrival time<br>• Visits with CTAS ≠ 4 or 5 | |
| | **Type** | Health System Use | |
| | **Data Source/ Elements** | **NACRS:** key_hsn, arrv_date, tri_lev, arrv_time | |
| | **Unit of Analysis** | Patient | |
| | **Limitations** | Visits to emergency departments that do not submit NACRS data will not be reflected | |
| 17 | **Indicator** | **% of patients admitted to hospitals in panel and network** | |
| | **Definition:** | proportion of patients admitted to hospital at least once between 2019-2021 in | |

| | |
|---|---|
| | panel and among panels of physicians in the same network |
| **Calculation** | ***Step 1:*** Link panel patient HSNs to DAD and count number of inpatient admissions for each HSN as "# admits" |
| | ***Step 2: Panel:***<br>$\%\ of\ panel\ patients\ admitted\ to\ hospitals = \frac{number\ of\ panel\ HSNs\ with\ "\#\ admits"\ > 0}{total\ number\ of\ panel\ HSNs}$ |
| | ***Step 3: Network:*** Repeat Step 2 for all patients on panels of physicians assigned to the report recipients' network. |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | • non-panelled patients, out-of-province hospitalizations.<br>• nested and transfer admissions.<br>• day surgery admissions |
| **Type** | Health System Use |
| **Data Source/ Elements** | **DAD:** key_hsn, adm_date, lnst_num |
| **Unit of Analysis** | Patient |
| **Limitations** | Network estimated |
| **Indicator** | **# of admissions to hospital** |
| Definition: | Number of acute care hospital inpatient admissions among panel patients, in last 3 calendar years (2019 - 2021). |
| Calculation | Sum "# admits" across all panel patient HSNs |
| Calculation period | January 1, 2019 – December 31, 2021 |
| Exclusions | • Out-of-province hospitalizations.<br>• nested and transfer admissions.<br>• day surgery admissions |
| Type | Health System Use |
| **Data Source/ Elements** | **DAD:** key_hsn, adm_date, inst_num |
| **Unit of Analysis** | admissions |
| **Limitations** | None |
| **Indicator** | **Average LOS in hospital across panel and network** |
| **Definition:** | Average length of time patients stayed in the hospital when admitted for panel and network |
| **Calculation** | **Panel:** Calculate average of eLOS (episode LOS variable) of all hospital admissions for panel patients |
| | ***Network:*** Repeat above for all patients on panels of physicians assigned to the report recipients' network. |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | • Out-of-province hospitalizations.<br>• nested and transfer admissions.<br>• day surgery admissions |
| **Type** | Health System Use |
| **Data Source/ Elements** | **DAD:** key_hsn, adm_date, dschg_date, los, inst_num |
| **Unit of Analysis** | Days |
| **Limitations** | None |
| **Indicator** | **Number of patients by number of hospitalizations** |
| **Definition:** | Count of panel patients in each category based on number of hospital admissions |
| **Calculation** | Count number of panel patient HSNs with "# admits" = 1, 2, 3 or 4, ≥ 5 |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | • Out-of-province hospitalizations. |

| | | | |
|---|---|---|---|
| | | • nested and transfer admissions.<br>• day surgery admissions | |
| | **Type** | Health System Use | |
| | **Data Source/ Elements** | **DAD:** key_hsn, adm_date, Inst_num | |
| | **Unit of Analysis** | Patient | |
| | **Limitations** | None | |
| | **Indicator** | **Number of Hospitalizations by age cohort & admitting source (ED, other) for patients in panel and network** | y |
| | **Definition:** | Number of hospitalizations among panel and network patients stratified by age cohort (<18, 18-59, 60+) and admission source (ED, other) | |
| | **Calculation** | ***Step 1***: for each hospital admission for panel patient HSNs, categorize by admitting source:<br>If Entry_code = "E", admit_source= "ED";<br>Else admit_source= "other" | |
| | | ***Step 2:*** For each admission from Step 1, identify age cohort<br>• Calculate patient age at admission: age=admission date – date of birth<br>• categorize each admission by age:<br>o if years of age < 18, set age_group = "<18";<br>o If years of age ≥60, set age_group ="60+"<br>o Else age_group= "18-59" | |
| | | ***Step 3:*** **Panel:** Count number of panel HSN admissions by age_group and admit_source | |
| | | ***Step 4: Network:*** Repeat Step 3 for all patients on panels of physicians assigned to the report recipients' network. | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | • Out-of-province hospitalizations.<br>• nested and transfer admissions.<br>• Day Surgery admissions<br>• records without an entry code | |
| | **Type** | Health System Use | |
| | **Data Source/ Elements** | **PHRS**: key_hsn, date of birth<br>**DAD**: key_hsn, adm_date, entry_code, Inst_num | |
| | **Unit of Analysis** | Admissions | |
| | **Limitations** | None | |
| 18 | **Indicator** | **Top 10 conditions responsible for hospitalizations – number of patients on panel and network average** | y |
| | **Definition:** | The ten most frequently occurring diagnoses for which patients were admitted, based on most responsible diagnosis and number of panel patients corresponding to each MRD. | |
| | **Calculation** | ***Step 1***: **Panel:** for each panel patients' inpatient hospital admission, identify most responsible diagnosis (MRD) as follows:<br>• Identify field in dx_type_1…25 where value = 'M' (dx_type_x)<br>• Identify corresponding field in dx_code_1…25 (dx_code_x)<br>• Set MRD = value in dx_code_x | |
| | | ***Step 2***: Identify 10 most frequent MRDs<br>• For each MRD, count number of unique panel HSNs<br>• Sort MRDs by count of HSNs<br>• Identify MRDs with 10 highest patient counts | |
| | | ***Step 3:*** **Network:** Calculate average number of patients across all network panels for each of the 10 MRDS in Step 2 | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |

| | | | |
|---|---|---|---|
| | **Exclusions** | • Out-of-province hospitalizations.<br>• nested and transfer admissions.<br>• day surgery admissions | |
| | **Type** | Health System Use | |
| | **Data Source/ Elements** | **DAD**: key_hsn, adm_date, dx_type_1…25, dx_code_1…25, inst_num | |
| | **Unit of Analysis** | Patient | |
| | **Limitations** | Network estimated | |
| | **Indicator** | **Top 10 conditions responsible for hospitalizations – number of admissions for panel and average for network** | y |
| | **Definition:** | Number of admissions corresponding to the 10 most frequent reasons for hospitalization (identified in indicator above) | |
| | **Calculation** | **Panel:** Count number of panel patient admissions by MRD<br>**Network**: calculate average number of admissions for each MRD across all network panels | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | • Out-of-province hospitalizations.<br>• nested and transfer admissions.<br>• day surgery admissions | |
| | **Type** | Health System Use | |
| | **Data Source/ Elements** | **DAD**: key_hsn, adm_date, dx_type_1…25, dx_code_1…25, inst_num | |
| | **Unit of Analysis** | Admissions | |
| | **Limitations** | Network estimated | |
| | **Indicator** | **Top 10 conditions responsible for hospitalizations – average LOS for panel and network** | y |
| | **Definition:** | Average length of stay corresponding to the 10 most frequent reasons for hospitalization among panel patients (identified in indicator above) | |
| | **Calculation** | ***Panel:*** Calculate average of eLOS among panel patient admissions for each MRD category.<br>***Network:*** calculate average length of stay for each MRD across all network panels | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | • Out-of-province hospitalizations.<br>• nested and transfer admissions.<br>• day surgery admission | |
| | **Type** | Health System Use | |
| | **Data Source/ Elements** | **DAD:** key_hsn, adm_date, dschg_date, los, lnst_num | |
| | **Unit of Analysis** | days | |
| | **Limitations** | Network estimated | |
| 19 | **Indicator** | **Number of admissions for Ambulatory Care Sensitive Conditions (ACSCs) by level of connectedness for panel and network average** | y |
| | **Definition:** | Number of acute care inpatient admissions for ACSC conditions among panel patients, by patient's level of connectedness to panel FP.<br>- See indicators for page 9 of the report for connectedness explanation and calculation | |
| | **Calculation** | ***Step 1***: Identify ACSC conditions:<br>• If<br>o admit_date-patient birth date <75 AND<br>o MRD = any of the codes listed below<br>• Then ACSC=1<br>• Else ACSC=0 | |

*ACSC ICD-10-CA codes:*

| Condition | Most responsible diagnosis (MRD) code | Exclude if intvn_code_1…20 include any of the following: |
|---|---|---|
| Asthma | J45 | |
| CHF | I50, J81 | 1HA58, 1HA80, 1HA87, 1HB53, 1HB54, 1HB55, 1HB87, 1HD53, 1HD54, 1HD55, 1HH59, 1HH71, 1HJ76, 1HJ82, 1HM57, 1HM78, 1HM80, 1HN71, 1HN80, 1HN87, 1HP76, 1HP78, 1HP80, 1HP82, 1HP83, 1HP87, 1HR71, 1HR80, 1HR84, 1HR87, 1HS80, 1HS90, 1HT80, 1HT89, 1HT90, 1HU80, 1HU90, 1HV80, 1HV90, 1HW78, 1HW79, 1HX71, 1HX78, 1HX79, 1HX80, 1HX83, 1HX86, 1HX87, 1HY85, 1HZ53 rubric (except 1HZ53LAKP), 1HZ55 rubric (except 1HZ55LAKP), 1HZ56, 1HZ57, 1HZ59, 1HZ80, 1HZ85, 1HZ87, 1IF83, 1IJ50, 1IJ55, 1IJ57, 1IJ76, 1IJ86, 1IJ80, 1IK57, 1IK80, 1IK87, 1IN84, 1LA84, 1LC84, 1LD84, 1YY54LANJ |
| COPD | J41-J44, J47<br>**OR**<br>J10.0, J11.0, J12–J16, J18, J20-J22<br>with J44 in another ICD field | |
| CAD | I20, I23.82, I24.0, I24.8, I24.9 | 1HA58, 1HA80, 1HA87, 1HB53, 1HB54, 1HB55, 1HB87, 1HD53, 1HD54, 1HD55, 1HH59, 1HH71, 1HJ76, 1HJ82, 1HM57, 1HM78, 1HM80, 1HN71, 1HN80, 1HN87, 1HP76, 1HP78, 1HP80, 1HP82, 1HP83, 1HP87, 1HR71, 1HR80, 1HR84, 1HR87, 1HS80, 1HS90, 1HT80, 1HT89, 1HT90, 1HU80, 1HU90, 1HV80, 1HV90, 1HW78, 1HW79, 1HX71, 1HX78, 1HX79, 1HX80, 1HX83, 1HX86, 1HX87, 1HY85, 1HZ53 rubric (except 1HZ53LAKP), 1HZ55 rubric (except 1HZ55LAKP), 1HZ56, 1HZ57, 1HZ59, 1HZ80, 1HZ85, 1HZ87, 1IF83, 1IJ50, 1IJ55, 1IJ57, 1IJ76, 1IJ86, 1IJ80, 1IK57, 1IK80, 1IK87, 1IN84, 1LA84, 1LC84, 1LD84, 1YY54LANJ |
| diabetes | E10.0, E10.1, E10.63, E10.64, E10.9 E11.0, E11.1, E11.63, E11.64, E11.9 E13.0, E13.1, E13.63, E13.64, E13.9, E14.0, E14.1, E14.63, E14.64, E14.9 | |
| mood disorders | F3, F40-F48, F68 | |

***Step 2: Panel:*** Count number of admissions where ACSC = 1 by continuity level

***Sstep 3: Network:*** calculate average number of admissions with ACSC = 1 for each continuity level across all network panels

| | |
|---|---|
| **Calculation period** | January 1, 2019` – December 31, 2021 |
| **Exclusions** | • Out-of-province hospitalizations.<br>• nested and transfer admissions.<br>• day surgery admissions<br>• Hospitalizations with ACSC = 0 (non-ACSC admissions) |
| **Type** | Health System Use |
| **Data Source/ Elements** | **PHYSICIAN SERVICES CLAIMS FILE:** key_HSN, Visit date, physician number<br>**DAD:** key_hsn, adm_date, Inst_num |
| **Unit of Analysis** | Hadmissions |
| **Limitations** | None |
| **Indicator** | **Average LOS for ACSCs by level of connectedness by panel and network** y |

| | | | |
|---|---|---|---|
| | **Definition:** | Average LOS for ACSC-related hospital admissions by level of connectedness | |
| | **Calculation** | ***Panel:*** Calculate average eLOS for panel patient inpatient hospitalizations where ACSC = 1, by continuity category<br>***Network:*** Calculate average eLOS as above across all panels in the network | |
| | **Calculation period** | January 1, 2019 – December 31, 2021 | |
| | **Exclusions** | • Out-of-province hospitalizations.<br>• nested and transfer admissions.<br>• day surgery admissions<br>• Hospitalizations with ACSC = 0 (non-ACSC admissions) | |
| | **Type** | Health System Use | |
| | **Data Source/ Elements** | **Physician Services Claims File:** key_HSN, Visit date, physician number<br>**DAD**: key_hsn, adm_date, dschg_date, los, Inst_num | |
| | **Unit of Analysis** | days | |
| | **Limitations** | None | |
| Prescribing patterns | | | |
| 20 | **Indicator** | **% of senior panel patients (65+) one 1, 2 or ≥ 3 Beers list drugs by panel and Network** | y |
| | **Definition:** | Proportion of panel patients ≥ 65 y/o who received 1, 2, 3 or more medications listed in the Beers Criteria in 2021<br>(Beers list with Drug Identification Numbers [DINs] will be provided by HQC) | |
| | **Calculation** | ***Step 1:*** Identify senior panel patients (65+)<br>- Use PHRS dataset:<br>• Patient age = 31/12/2021 – date of birth (dd/mm/yyyy)<br>• Exclude panel patients with age <65<br><br>***Step 2:*** Calculate number of different Beers medications per HSN identified in Step 1<br>• Count the number of unique Beers medications for each senior panel patient dispensed in 2021<br>○ "unique" drugs based on generic drug names<br>• Categorize HSNs based on Beers drug count:<br>○ If 1 drug, then "Beers Count" = 1<br>○ Elseif 2 drug, then "Beers Count" = 2<br>○ Elseif 3 or more drugs then "Beers Count" = "3+"<br>○ Else "Beers Count" = 0<br><br>***Step 3:*** **Panel:** Calculate % of senior panel patients by Beers Count value<br>$$\%\ of\ senior\ panel\ patients_{BC} = \frac{\#\ of\ unique\ senior\ panel\ HSNs_{BC}}{\#\ of\ unique\ senior\ panel\ HSNs}$$<br>where $BC$ = Beers Count (1, 2, 3+)<br><br>***Step 4:*** **Network:** Repeat Step 3 for all patients on panels of physicians assigned to the report recipients' network. | |
| | **Calculation period** | January 1, 2021 – December 31, 2021 | |
| | **Exclusions** | • Patients ≤ 64 y/o as of December 31, 2021<br>• Medication dispensations not involving Beers list drugs | |
| | **Type** | Drugs indicator | |
| | **Data Source/ Elements** | **Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID<br>**PHRS:** Patient ID, birth date | |
| | **Unit of Analysis** | Unique drugs by generic name (for drug count), Patient (for proportion) | |
| | **Limitations** | Network estimated | |

| | | |
|---|---|---|
| | Patient age is estimated as of the end of the year | |
| **Indicator** | **% of senior panel patients (65+) are on 1 or more drugs chronically from Beers list for panel, and Network** | y |
| **Definition:** | Proportion of panel patients ≥ 65 y/o who were dispensed 1, 2, ≥3 unique medications listed in the Beers Criteria in 2019 that meet the following criteria for "chronic use":<br>Chronic use = where the patient a has 2 dispensations for the same Beers drug within 6 weeks of each other and at least 1 additional dispensation of the same drug within 180 days.<br>• "unique" drugs defined based on generic name | |
| **Calculation** | ***Step 1:*** Identify senior panel patients (65+) as in previous indicator | |
| | ***Step 2:*** Identify cases of chronic use of Beers drugs (per "Chronic use" criteria state above). | |
| | ***Step 3:*** Count number of unique drugs used chronically for each HSN; categorize as follows:<br>• If 1 drug used chronically, then "Chronic Beers Count" = 1<br>• Elseif 2 drugs, then "Chronic Beers Count" = 2<br>• Elseif 3 or more drugs then "Chronic Beers Count" = "3+"<br>• Else "Chronic Beers Count" = 0 | |
| | ***Step 4:*** **Panel:** Calculate % of senior panel patients (65+) on 1 or more drugs chronically from Beers list<br>$$\%\ of\ senior\ panel\ patients\ (65+)_{CBC} = \frac{\#\ of\ unique\ senior\ panel\ HSNs_{CBC}}{\#\ of\ unique\ senior\ panel\ HSNs}$$<br>where $CBC$ = Chronic Beers Count (1, 2, 3+) | |
| | ***Step 5:*** **Network:** repeat Step 4 for all patients on panels of physicians in report recipients' network | |
| **Calculation period** | January 1, 2021 – December 31, 2021 | |
| **Exclusions** | • Patients ≤ 64 years of age as of December 31, 2021 | |
| **Type** | Drugs indicator | |
| **Data Source/ Elements** | **Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID<br>**PHRS:** Patient ID, birth date | |
| **Unit of Analysis** | Unique drugs by generic name (for drug count), Patient (for proportion) | |
| **Limitations** | Network estimated<br>Chronic use estimated<br>Patient age is estimated as of the end of the year | |
| **Indicator** | **% senior panel patients (65+) on top 5 most common drugs from Beers list by panel and Network** | y |
| **Definition:** | Identifying the 5 Beers list drugs most frequently dispensed to senior panel patients, and the % of the senior patients receiving the drug for the panel and network. | |
| **Calculation** | ***Step 1:*** Identify senior panel patients (65+) per previous indicators | |
| | ***Step 2:*** calculate the 5 Beers list drugs most frequently dispensed to the patients identified in Step 1.<br>- For each HSN from Step 1, count number of dispensations of each Beers drug (generic name) where dispensation date occurred in 2021<br>- Sum number of dispensations for each generic name across all HSNs<br>- Identify the 5 most frequently dispensed generic drugs (e.g. Drug A, Drug B…Drug E) | |

| | | |
|---|---|---|
| | | ***Step 3:* Panel:** calculate % of senior panel patients (from Step 1) on each of the 5 most common drugs identified in Step 2<br>- For each generic drug, count number of HSNs with ≥1 dispensation in 2021<br>- Calculate:<br>$$\%\ of\ senior\ panel\ patients_d = \frac{\#\ of\ unique\ senior\ panel\ HSNs\ on\ drug_d}{\#\ of\ unique\ senior\ panel\ HSNs}$$<br>where $d$ = drugs A – E |
| | | ***Step 4:* Network:** Repeat Step 3 for all patients on panels of physicians in report recipients' network |
| | **Calculation period** | January 1, 2021 – December 31, 2021 |
| | **Exclusions** | • Patients ≤ 64 y/o as of December 31, 2021<br>• Drugs not on Beer's list |
| | **Type** | Drugs indicator |
| | **Data Source/ Elements** | **Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID<br>**PHRS:** Patient ID, birth date |
| | **Unit of Analysis** | Dispensations (for top 5), Patients (for % receiving drug) |
| | **Limitations** | Network estimated<br>Patient age is estimated as of the end of the year |
| 21 | **Indicator** | **% of senior panel patients receiving antipsychotics by year by panel and network** |
| | **Definition:** | Proportion of patients ≥ 65 y/o who received antipsychotics stratified by year for panel and network<br>• List of DINs to be included as antipsychotics will be provided to eHS by HQC |
| | **Calculation** | ***Step 1:*** Identify senior panel patients (65+) in each year<br>• if patient age = 31/12/2021 – patient birthday (dd/mm/yyyy) ≥ 65, set flag=1 and t = 2021<br>• if patient age = 31/12/2020 – patient birthday (dd/mm/yyyy) ≥ 65, set flag=1 and t = 2020<br>• if patient age = 31/12/2019 – patient birthday (dd/mm/yyyy) ≥ 65, set flag=1 and t = 2019<br>• Exclude panel patients with age <65 for each year |
| | | ***Step 2:*** For each year:<br>- identify senior patients (flag=1) who had ≥ 1 dispensation of an antipsychotic (based on DIN list)<br>- Count number of seniors identified as antipsychotic recipients |
| | | ***Step 3:* Panel:** Calculate % of senior panel patients receiving antipsychotics by year<br>$$\%\ of\ senior\ panel\ patients_{f,t} = \frac{\#\ of\ unique\ senior\ panel\ HSNs\ with\ antipsychotic\ dispensation_{f,t}}{\#\ of\ unique\ senior\ panel\ HSNs_{f,t}}$$<br>where $f$= 1 and $t$ = year 2019, 2020 or 2021 |
| | | ***Step 4:* Network:** Repeat Step 3 for all patients on panels of physicians assigned to the report recipients' network |
| | **Calculation period** | January 1, 2019 – December 31, 2021 |
| | **Exclusions** | • Patients ≤ 64 years of age for each year as of December 31, 2021 |
| | **Type** | Drugs indicator |
| | **Data Source/ Elements** | **Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID |

| | |
|---|---|
| | **PHRS:** Patient ID, birth date |
| **Unit of Analysis** | Patient |
| **Limitations** | Network estimated<br>Patient age is estimated as of the end of the year |
| **Indicator** | **Among those receiving antipsychotics, % by prescribing source** |
| **Definition:** | Proportion of panel patients ≥ 65 y/o who received antipsychotics stratified by prescriber |
| **Calculation** | ***Step 1:*** Identify senior panel patients (65+) in each year<br>- see step 1 in previous indicator |
| | ***Step 2:*** Identify all dispensations of antipychotics senior panel patients on antipsychotics by year per identification method in Step 2 in previous indicator |
| | ***Step 3:*** categorize prescriber indicated in Drug Plan record as follows:<br>• If key prescriber ID = report recipient ID then "prescriber" = "You"<br>• Elseif key prescriber clinic ID= report recipient clinic ID then "prescriber" = "Clinic colleagues"<br>• Elseif key prescriber is neither the report recipient nor clinic colleagues then "prescriber" = "Others" |
| | ***Step 4:*** for each HSN identified as receiving antipsychotics, determine the combination of "Prescriber" categories associated with their dispensations, as follows:<br>i. You<br>ii. You & clinic colleagues<br>iii. You & others<br>iv. You & clinic colleagues & others<br>v. Clinic colleagues<br>*vi.* Clinic colleagues & others<br>*vii.* Others |
| | ***Step 5:*** Calculate % of senior panel patients (65+) receiving antipsychotics stratified by prescriber<br>$\%\ of\ senior\ panel\ patients\ (65+)_p = \frac{\#\ of\ unique\ senior\ panel\ HSNs_{f.p}}{\#\ of\ unique\ senior\ panel\ HSNs_f}$<br>where $f$= flagged as 1 and $p$ = prescriber categories as i…vii above |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | • Patients ≤ 64 y/o as of December 31, 2021 |
| **Type** | Drugs indicator |
| **Data Source/ Elements** | **Drug Plan:** Patient ID, Key Prescriber ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID<br>**PHRS:** Patient ID, birth date |
| **Unit of Analysis** | Patient |
| **Limitations** | Some physicians may work in multiple clinics; this will categorize based on 'main' clinic.<br>Patient age is estimated as of the end of the year |
| **Indicator** | **Among those receiving antipsychotics, % by number of dispensations in the past year by panel and network** y |
| **Definition:** | Proportion of panel patients ≥ 65 y/o who received antipsychotics stratified by number of dispensations in 2021 |
| **Calculation** | ***Step 1:*** Identify senior panel patients (65+) in 2021<br>- Use PHRS dataset:<br>• Patient age = 31/12/2021 – patient birthday (dd/mm/yyyy) |

| | | |
|---|---|---|
| | | • Exclude panel patients with age <65 |
| | | ***Step 2:*** Identify senior panel patients on antipsychotics in 2021<br>- Use Drug Plan dataset:<br>• For each patient identified in Step 1, if ≥ 1 dispensation of antipsychotics in 2021, then flag = 1 |
| | | ***Step 3:*** identify count of dispensations<br>- Use Drug Plan dataset:<br>• If count of dispensations= 1 in 2021 then "dispensation count" = 1<br>• Elseif count of dispensations= 2 in 2021 then "dispensation count" = 2<br>• Elseif count of dispensations= 3 in 2021 then "dispensation count" = 3<br>• Elseif count of dispensations= 4 in 2021 then "dispensation count" = 4<br>• Elseif count of dispensations ≥5 in 2021 then "dispensation count" = 5+ |
| | | ***Step 4:*** **Panel:** Calculate % of senior panel patients (65+) receiving antipsychotics stratified by number of dispensations in 2021<br>$$\%\ of\ senior\ panel\ patients\ (65+)_{f.DC} = \frac{\#\ of\ unique\ senior\ panel\ HSNs_{f.DC}}{\#\ of\ unique\ senior\ panel\ HSNs_{f}}$$<br>where $f$= flagged as 1, $DC$= dispensation count (1, 2, 3, 4, 5+) |
| | | ***Step 5:*** **Network**: Repeat Step 4 for all patients on panels of physicians assigned to the report recipients' network. |
| | **Calculation period** | January 1, 2021 – December 31, 2021 |
| | **Exclusions** | • Patients ≤ 64 y/o as of December 31, 2021 |
| | **Type** | Drugs indicator |
| | **Data Source/ Elements** | **Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID<br>**PHRS:** Patient ID, birth date |
| | **Unit of Analysis** | Patients |
| | **Limitations** | Network estimated<br>Age estimated as of December 31, 2021 |
| 22 | **Indicator** | **% of panel patients receiving opioids by year by panel and network** |
| | **Definition:** | Proportion of panel patients who received opioids stratified by year<br>• opioids list with Drug Identification Numbers [DINs] will be provided by HQC |
| | **Calculation** | ***Step 1:*** Identify panel patients on opioids by year<br>- Use Drug Plan dataset:<br>• For year 2021, if panel patient received opioids in 2021, then flag = 1 and t=2021<br>• For year 2020, if panel patient received opioids in 2020, then flag = 1 and t=2020<br>• For year 2019, if panel patient received opioids in 2019, then flag = 1 and t=2019 |
| | | ***Step 2:*** **Panel:** Calculate % of panel patients receiving opioids by year<br>$$\%\ of\ panel\ patients_{f.t} = \frac{\#\ of\ unique\ panel\ HSNs_{f.t}}{\#\ of\ unique\ panel\ HSNs}$$<br>where $f$= flagged as 1 and $t$= 2019, 2020 or 2021 |
| | | ***Step 3:*** **Network:** Repeat Step 2 for all patients on panels of physicians assigned to the report recipients' network. |

| | |
|---|---|
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | None |
| **Type** | Drugs indicator |
| **Data Source/ Elements** | **Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID |
| **Unit of Analysis** | Patient |
| **Limitations** | Network estimated |
| **Indicator** | **Among those receiving opioids, % by prescribing source** |
| **Definition:** | Proportion of panel patients who received opioids stratified by prescriber |
| **Calculation** | ***Step 1:*** Identify panel patients dispensed opioids during analysis period<br>- Use Drug Plan dataset:<br>• if panel patient received opioids in 2019, 2020 or 2021, then flag = 1 |
| | ***Step 2:*** identify prescriber for each opioid dispensation<br>- Use Drug Plan dataset:<br>• If key prescriber ID = report recipient ID then "prescriber" = "You"<br>• Elseif key prescriber clinic ID= report recipient clinic ID then "prescriber" = "Clinic colleagues"<br>• Elseif key prescriber is neither the report recipient nor clinic colleagues then "prescriber" = "Others" |
| | ***Step 3:*** for each HSN with flag =1 (received opioids) determine combination of "Prescriber" categories associated with their dispensation, as follows:<br>viii. You<br>ix. You & clinic colleagues<br>x. You & others<br>xi. You & clinic colleagues & others<br>xii. Clinic colleagues<br>xiii. Clinic colleagues & others<br>xiv. Others |
| | ***Step 4:*** Calculate % of panel patients receiving opioids stratified by prescriber<br>$$\%\ of\ panel\ patients\ prescribed\ opioids_p = \frac{\#\ of\ unique\ panel\ HSNs_{f.p}}{\#\ of\ unique\ panel\ HSNs_f}$$<br>where $f$= flagged as 1 and $p$ = prescriber categories i…vii above |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | None |
| **Type** | Drugs indicator |
| **Data Source/ Elements** | **Drug Plan:** Patient ID, Key Prescriber ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID, clinic ID |
| **Unit of Analysis** | Patient |
| **Limitations** | Some physicians may work in multiple clinics; this will categorize based on 'main' clinic |
| **Indicator** | **Among those receiving opioids, % by number of dispensations in the past year by panel and network** y |
| **Definition:** | Proportion of panel patients who received opioids stratified by number of dispensations in 2021 |
| **Calculation** | ***Step 1:*** Identify panel patients on opioids in 2021<br>- Use Drug Plan dataset:<br>• If panel patient received opioids in 2021, then flag = 1 |

| | | |
|---|---|---|
| | | ***Step 2:*** identify count of dispensations<br>- Use Drug Plan dataset:<br>• If count of dispensations= 1 in 2021 then "dispensation count" = 1<br>• Elseif count of dispensations= 2 in 2021 then "dispensation count" = 2<br>• Elseif count of dispensations= 3 in 2021 then "dispensation count" = 3<br>• Elseif count of dispensations= 4 in 2021 then "dispensation count" = 4<br>• Elseif count of dispensations ≥ 5 in 2021 then "dispensation count" = 5+ |
| | | ***Step 3:*** **Panel:** Calculate % of panel patients receiving opioids stratified by number of dispensations in 2021<br>$$\%\ of\ panel\ patients_{f.DC} = \frac{\#\ of\ unique\ panel\ HSNs_{f.DC}}{\#\ of\ unique\ panel\ HSNs_{f}}$$<br>where $f$= flagged as 1, $DC$= dispensation count (1, 2, 3, 4, 5+) |
| | | ***Step 4:*** **Network**: Repeat Step 3 for all patients on panels of physicians assigned to the report recipients' network. |
| | **Calculation period** | January 1, 2021 – December 31, 2021 |
| | **Exclusions** | None |
| | **Type** | Drugs indicator |
| | **Data Source/ Elements** | **Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID |
| | **Unit of Analysis** | Patients |
| | **Limitations** | Network estimated |
| 23 | **Indicator** | **% of panel patients receiving benzodiazepines by year by panel and Network** |
| | **Definition:** | Proportion of panel patients who received benzos stratified by year<br>• benzodiazepines list with Drug Identification Numbers [DINs] will be provided by HQC) |
| | **Calculation** | ***Step 1:*** Identify panel patients on benzos by year<br>- Use Drug Plan dataset:<br>• For year 2021, if panel patient received benzos in 2021, then flag = 1, and t=2021<br>• For year 2020, if panel patient received benzos in 2020, then flag = 1 and t=2020<br>• For year 2019, if panel patient received benzos in 2019, then flag = 1 and t=2019 |
| | | ***Step 2:*** **Panel:** Calculate % of panel patients receiving benzos by year<br>$$\%\ of\ panel\ patients_{f.t} = \frac{\#\ of\ unique\ panel\ HSNs_{f.t}}{\#\ of\ unique\ panel\ HSNs_{t}}$$<br>where $f$= flagged as 1 and $t$= 2019, 2020 or 2021 |
| | | **Step 3: Network**: Repeat Step 2 for all patients on panels of physicians assigned to the report recipients' network |
| | **Calculation period** | January 1, 2019 – December 31, 2021 |
| | **Exclusions** | None |
| | **Type** | Drugs indicator |
| | **Data Source/ Elements** | **Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID |
| | **Unit of Analysis** | Patient |

| | |
|---|---|
| **Limitations** | Network estimated |
| **Indicator** | **Among those receiving benzodiazepines, % by prescribing source** |
| **Definition:** | Proportion of panel patients who received benzos stratified by prescriber |
| **Calculation** | ***Step 1:*** Identify panel patients on benzos by year<br>- Use Drug Plan dataset:<br>• If panel patient received benzos in 2019, 2020 or 2021, then flag = 1<br><br>***Step 2:*** identify prescriber for each benzo dispensation<br>- Use Drug Plan dataset:<br>• If key prescriber = report recipient, then "prescriber" = "You"<br>• Elseif key prescriber clinic ID = report recipient clinic ID then "prescriber" = "Clinic colleagues"<br>• Elseif key prescriber is neither the report recipient nor clinic colleagues then "prescriber" = "Others"<br><br>***Step 3:*** for each HSN with flag =1 (received opioids) determines combination of "Prescriber" categories associated with their dispensation, as follows:<br>i. You<br>ii. You & clinic colleagues<br>iii. You & others<br>iv. You & clinic colleagues & others<br>v. Clinic colleagues<br>vi. Clinic colleagues & others<br>vii. Others<br><br>***Step 4:*** Calculate % of panel patients receiving benzos stratified by prescriber<br>$$\%\ of\ panel\ patients_p = \frac{\#\ of\ unique\ panel\ HSNs_{f.p}}{\#\ of\ unique\ panel\ HSNs_f}$$<br>where $f$= flagged as 1 and $p$ = prescriber categories i…vii above |
| **Calculation period** | January 1, 2019 – December 31, 2021 |
| **Exclusions** | None |
| **Type** | Drugs indicator |
| **Data Source/ Elements** | **Drug Plan:** Patient ID, Key Prescriber ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID, clinic ID |
| **Unit of Analysis** | Patients |
| **Limitations** | Some physicians may work in multiple clinics; this will categorize based on 'main' clinic |
| **Indicator** | **Among those receiving benzodiazepines, % by number of dispensations in the past year by panel and network** y |
| **Definition:** | Proportion of panel patients who received benzos stratified by number of dispensations in 2021 |
| **Calculation** | ***Step 1:*** Identify panel patients on benzos in 2021<br>- Use Drug Plan dataset:<br>• If panel patient received benzos in 2021, then flag = 1<br><br>***Step 2:*** identify count of dispensations<br>- Use Drug Plan dataset:<br>• If count of dispensations= 1 in 2021 then "dispensation count" = 1<br>• Elseif count of dispensations= 2 in 2021 then "dispensation count" = 2<br>• Elseif count of dispensations= 3 in 2021 then "dispensation count" = 3<br>• Elseif count of dispensations= 4 in 2021 then "dispensation count" = 4 |

| | | |
|---|---|---|
| | | • Elseif count of dispensations ≥ 5 in 2021 then "dispensation count" = 5+ |
| | | ***Step 3:*** **Panel:** Calculate % of panel patients receiving benzos stratified by number of dispensations in 2021<br>$$\%\ of\ panel\ patients_{f.DC} = \frac{\#\ of\ unique\ panel\ HSNs_{f.DC}}{\#\ of\ unique\ panel\ HSNs_{f}}$$<br>where $f$= flagged as 1, $DC$= dispensation count (1, 2, 3, 4, 5+) |
| | | ***Step 4:*** **Network**: Repeat Step 3 for all patients on panels of physicians assigned to the report recipients' network. |
| | **Calculation period** | January 1, 2021 – December 31, 2021 |
| | **Exclusions** | None |
| | **Type** | Drugs indicator |
| | **Data Source/ Elements** | **Drug Plan:** Patient ID, Dispensation Date, Drug Identification Number (DIN)<br>**Physician Services Claims File:** Patient ID, Physician ID |
| | **Unit of Analysis** | Patients |
| | **Limitations** | Network estimated |
| Appendices | | |
| 24-32 | | |