Virginia Department of Medical Assistance Services (DMAS)

CLINICAL EFFICIENCY PERFORMANCE MEASURE TECHNICAL SPECIFICATIONS

SFY 2025 Version 1.1 (July 2024)

MAKE TOMORROW, TODAY MERCER

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OVERVIEW

INTRODUCTION

The purpose of this document is to provide guidance on the calculation of clinical efficiency (CE) performance measures (PMs) to track and evaluate Managed Care Organizations' (MCOs) success in reducing preventable, avoidable, and/or medically unnecessary utilization. This provides a more dynamic measurement structure than previous iterations of DMAS' CE work and will serve as the basis for assessment of CE performance going forward. CE measures include:

- Potentially Preventable, Avoidable, and/or Medically Unnecessary Emergency Department Visits (PPED)
- Acute Inpatient (IP) 30-day readmissions
- Potentially Preventable Admissions (PPA)

IMPLEMENTATION

DMAS will use these PMs to modify the CE policy from an adjustment to the capitation rates, to a year-over-year evaluation of MCO-specific performance improvement and attainment in each of these areas. The goal of the CE policy is to incentivize MCOs to direct resources and care support efforts to avoid these events and reduce associated utilization and costs. Such an approach requires measure specifications that standardize the measure reporting process across all MCOs. By facilitating a more direct evaluation of MCO performance, these changes will allow DMAS to adopt more targeted financial incentives where MCOs can earn back all or a portion of their CE withhold amounts through better care management that reduces preventable, avoidable, and/or medically unnecessary utilization.

These specifications and supporting materials will facilitate transparency in how DMAS calculates each measure, including inclusion and exclusion criteria, relevant data used, and calculation of final utilization rates. Further, the details provided in this document:

- Allow transparency among the stakeholders involved in producing and using the data.
- Help non-technical project members understand various steps in producing these measures.
- Provide a standard for on-going review and change documentation from year-to-year.

Sharing these materials provides actionable information for MCOs and providers in the management of member care. While DMAS will provide these materials, stakeholders wishing to run these analyses internally will need to tailor specifications to meet their individual data structures and analytics capabilities. The PMs included in this document describe individual measure specifications. The specifications include a description of actions to accommodate receipt and preparation of data, identification of the population, and steps for each measure to identify the measure denominators and numerators. The specification steps and associated data parameters (data value sets) provide requirements to accurately apply specifications for reporting. This document serves as a guideline and continuing reference point as programming code is developed and measures are calculated and published.

COMMON DATA SOURCES

All performance measures are based on fully adjudicated managed care enrollment and encounter data. Additionally, a series of reference tables are required for accurate calculation of all performance measures (included in the accompanying Excel workbook, titled: *DMAS CE Performance Measures Technical Specifications Value Sets.xlsx*). Tables 1 through 3, are common across all three performance measures. Tables that are specific to a given measure are indicated as such through measure specific naming conventions, for example, the tables necessary for calculating the PPED measure include Table PPED – A1 through Table PPED – A5. Fee-for-service claims are not included in measure calculations.

REPORTING PERIOD

The reporting period for all measures will be 12 months, allowing for a 6 month claims runout. Encounters will be selected for measure calculation on the 1st business day of the calendar year to assess state fiscal year performance period. For example, on January 2, 2025, encounters will be pulled for services rendered between July 1, 2023 and June 30, 2024.

ANNUAL MAINTENANCE

DMAS will plan to review and update CE PMs annually during the 1st quarter of each calendar year. The review will include:

- Examination of results from the previous year's performance on each CE
- DMAS experience with deploying the specifications for reporting
- Feedback from MCOs on utilization of the specifications
- Review of *Performance Measures Technical Specifications Value Sets* to update data elements, codes, and crosswalks due to any annual source eligibility, diagnosis, procedure, billing, or software changes
- Analysis of other clinical performance data and current evidence-based research to identify other priorities for clinical efficiency improvements critical to address for the Medicaid population

This review will inform DMAS on the need for revisions to specifications and value sets, as well as removing or adding new CEs. If a new CE is recommended, DMAS will consider input from MCOs and describe the intent to demonstrate the purpose and necessity of the measure.

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POTENTIALLY PREVENTABLE, AVOIDABLE, AND/OR MEDICALLY UNNECESSARY EMERGENCY DEPARTMENT VISITS (PPED)

MEASURE PURPOSE AND DESCRIPTION

This measure assesses rate of potentially preventable, avoidable, and/or medically unnecessary ED visits.

EDs are an important part of our health care system. For people suffering from a serious, acute problem, EDs help patients get the immediate care that they need. However, not all care provided in the ED should be happening there. Too many people use EDs for health problems that can be safely and effectively treated in a primary care provider's office or urgent care clinic for a fraction of the cost. Additionally, many ED visits are entirely avoidable through more proactive and effective management of member conditions.

These analyses are not intended to imply that members did not need or should have been denied access to EDs. Instead, the analyses are designed to reflect the objective that more effective, efficient and innovative managed care could have prevented or preempted the need for some members to seek care in the ED. The PPED analysis identifies visits that could have occurred in a lower acuity setting or been avoided through the provision of consistent, evidence-based, primary care, proactive care management and health education. The intent of the specifications presented in this document is to report the number of PPED visits/1,000 member months.

The criteria used to identify PPED diagnoses are based on a framework developed by Mercer Government Human Services Consulting (Mercer) with the methodology developed based on publicly available research with additional input from an expert panel including ED physicians, state Medicaid clinical staff, and other clinical providers with Medicaid and MCO experience. Collaboration between DMAS and Mercer occurred to finalize the list of PPED performance measure diagnoses.

The identified ICD-10 CM diagnosis codes represent cases where use of the ED may be avoided. Observed ED visits for each specific diagnosis (Dx) code are assigned a percentage indicating the proportion of avoidable ED visits based on specifications outlined by New York University (NYU) to classify preventable ED utilization (https://wagner.nyu.edu/faculty/billings/nyued-background). DMAS is using the NYU percent preventable classifications because they are publicly available and facilitate transparency in calculating the PPED measure for MCOs.

DATA SOURCE(S)

1. Managed care encounter records: All encounters for services (reflecting inpatient and outpatient emergency department services) submitted on the Institutional 837I or Professional 837P claim format within the defined reporting period.
    a. Date of service is identified through the header date of the ED visit as the initial date of service.

2. Managed care enrollment records: Sourced from the Medicaid managed care capitation enrollment records. Capitation enrollment criteria are used to:
    a. Confirm patients' managed care enrollment at the time of service.
    b. Determine member benefit package.
    c. Collect demographic information for reporting purposes, including age, locality, state, race/ethnicity.
    d. Calculate member months (MMs).

APPLICABLE DATA VALUE SETS

The following tables contain values used for the analysis:

Table 1 – Federal Information Processing Standards (FIPS): This table includes the FIPS definitions to define region for reporting.

Table 2 – Partial Benefit Members and Duals: This table identifies the members with limited benefit packages for exclusion. Other members with TPL are included – note this may decrease the per unit cost of an ED visit.

Table 3 – Inpatient definition: This table includes bill type codes that are used to identify an inpatient stay for exclusion.

Table PPED – A1 – International Classification of Diseases ICD 10 diagnosis codes that have been designated by DMAS as indicative of PPED. This table details specific PPED ICD-10 diagnosis codes that are used for identification of PPED diagnoses and the associated percent preventable is as defined by the NYU algorithm.

Table PPED – A2 Emergency Department (ED) definition: This table identifies Revenue codes, CPT codes and a Place of Service code that are used to identify ED visits.

Table PPED – A3 Trauma Associated Critical Care Procedure Code: This table is used to ensure that ED visits associated with trauma are not included in performance metric calculation.

Table PPED – A4 Labor and Delivery Procedure Codes: This table is used to ensure that ED visits associated with labor and delivery are not included in performance metric calculation.

Table PPED – A5 Observation Stay Revenue Code: This table includes codes that inform exclusion criteria related to observation stays.

DATA QUALITY AND COMPLETENESS

1. All encounters must include a date of service and a principal diagnosis or primary diagnosis to be considered of sufficient completeness for use in analysis.
2. Only fully adjudicated paid encounters are included.
3. Duplicate records should be removed prior to analysis. A record is considered a duplicate if:
    a. Records have the same claim number and detail number
    b. Records have different claim numbers, but have the same member, date of service (detail), type of claim, bill type code, place of service, principal diagnosis codes and procedure codes, revenue codes, and provider.

i. Dental, laboratory, transportation, and pharmacy encounters should be excluded from this logic as there is insufficient information on an encounter to identify a duplicate record

4. Member must have a valid managed care enrollment record at time of service to be considered a valid encounter. Valid enrollment is defined as having a paid capitation record in the month in which the service is performed.

DATA ELEMENTS

Data elements used for PPED analysis include the following and are listed in the Data Elements table under *DMAS CE Performance Measures Technical Specifications Value Sets.xlsx*:

Data element	Description
Recipient ID	Recipient based on the Medicaid ID
Internal Claims Number (ICN)	Claim number/ICN used by MCO to identify a claim that does not include a claim detail line number
Serving Provider ID	Performing or servicing provider's National Provider Identification (NPI)
Billing Provider ID	Billing provider's National Provider Identification (NPI)
Date of Service	Start date of service on header
Bill Type	National Uniform Billing Committee (NUBC) field used by CMS (two digits) to identify type of facility and type of care for the service that was performed
CPT/HCPCS Procedure Codes	A national standard code used for coding services, procedures and items. (e.g. a CPT code is used to describe the medical, surgical, radiologic, laboratory or anesthesiology services)
Principal Diagnosis	The diagnosis reported by the provider/hospital to be the main diagnosis associated with billed services and chiefly responsible for the admission.
Primary Diagnosis	Primary is the first main diagnosis listed on a claim and may be present even when principal diagnosis is missing
Surgical Procedure Codes	ICD-10 PCS surgical procedure codes identify specific procedures that a member receives. Used to identify exclusions.
Revenue Codes	A national standard revenue code that helps to categorize the type of service provided to a patient in an institutional setting
Place of Service	National code used to identify the entity where services rendered
Medical expenditures	Total amount spent by the MCO for services rendered
Date of birth	Date of birth based on capitation enrollment record
Program/Delivery system	Identifier for whether a member is in a managed care program or FFS
Health Plan	Identifier for the health plan in which a member is enrolled during the month of the event (e.g., Anthem, Aetna, Virginia Premier, Optima, Magellan, United Healthcare)

Data element	Description
ED indicator	This indicator will be created in the process of analysis based on claims containing codes from specified value set
Inpatient indicator	This indicator will be created in the process of analysis based on claims containing codes from specified value set
Observation stay indicator	This indicator will be created in the process of analysis based on claims containing codes from specified value set
Trauma indicator	This indicator will be created in the process of analysis based on claims containing codes from specified value set
Labor & Delivery indicator	This indicator will be created in the process of analysis based on claims containing codes from specified value set
Patient FIPS Code	State/county code associated with member address
State Code	Recipient State code associated with member address
Race	1=White 2=Black 3=Hispanic 4=Asian or Pacific Islander 5=Native American 6=Other
Sex	1=Male 2=Female

CALCULATE DENOMINATOR

ELIGIBLE POPULATION CRITERIA

Inclusion Criteria

Members included in this analysis must be:

1. VA State Resident Medicaid managed care enrollees during reporting period.
2. Full benefit members in Medicaid or FAMIS
3. Between 1 year of age through 64 years of age.

Exclusion Criteria

Any member meeting any of the following criteria are excluded from this analysis:

1. All dual eligible (both Medicare and Medicaid) members are excluded (see table 2 for definition). Other members with TPL are included. Note: This will decrease per unit cost estimates.
2. All partial benefit members are excluded from analysis
    a. Partial benefit members include: limited benefit duals, Plan First and GAP members (see table 2)
3. All members under the age of 1 or over age 64 are excluded.
    a. Age is calculated using the date of birth provided in capitation payments.

4. Members receiving only FFS services in any given month are excluded from analysis, as defined by not being present in managed care enrollment file for any given month

IDENTIFYING MEMBER MONTHS

1. Count the number of eligible members for each month of the given time period
    a. Eligible members include all members enrolled in managed care during the given reporting time period, accounting for all inclusion and exclusion criteria as listed above
    b. Member months are based on the capitation payments paid out to the plans for VA State Residents Medicaid enrollees' health care management for each enrolled member
    c. If a member is enrolled at any point during a given month, that member is counted as present for that month.
    d. Each member enrolled with a managed care plan should be counted once for each month in which that person is enrolled for the reporting period
    e. Using the above methodology, each health plan should be assigned a total number of member months

CALCULATE NUMERATOR

IDENTIFYING ELIGIBLE EMERGENCY VISITS

Step 1: Identifying all emergency department encounters for eligible members

1. Include all encounters (institutional and professional) of eligible members for the specified reporting period.
2. Identify a claim as an emergency department service claim if the record includes any of the ED indicators included in Table PPED – A2.
3. Select all 837I ICN service details associated with an encounter per criteria above and identify header claim.
4. Create an indicator for an emergency department service if the header or any detail level claims have an ED-related code per the criteria above. Be sure to keep all detail level claims and header for ICNs flagged as associated with an ED service.
5. Select all 837P ICN service details associated with an encounter per criteria above and identify header claim.
6. Create an indicator for an emergency department service if the header or any detail level claims have an ED-related code per the criteria above. Be sure to keep all detail level claims and header for ICNs flagged as associated with an ED service.

Step 2: Identifying all inpatient (IP) encounters

1. Identify all institutional (837I) detail claims with a bill type indicating an associated inpatient stay

    a. Claims are identified as relating to an inpatient stay if the claim has any of the codes associated with an inpatient stay (bill type) as listed in Table 3 on the same or subsequent day of an emergency department encounter.

2. Create an indicator for an emergency department encounter that resulted in an inpatient admission if the header or any detail level claims have an IP-related code per the criteria above.

Step 3: Identifying all encounters associated with an observation stay

1. Identify all institutional or professional claims (837I or 837P) reflecting members with an observation stay.
    a. Claims are identified as an observation stay if any of the header or claims-line details include a revenue code as listed in Table PPED – A5 on the same or subsequent day of an emergency department encounter.
2. Create an indicator for an emergency department service associated with an observation stay if the header or any detail level claims have an observation stay code per the criteria above.
3. Exclude all encounters that are not identified as associate with an ED service, an inpatient service, or an observation stay service.

Step 4: Identifying all critical trauma-related encounters

1. From the remaining encounters, identify all institutional or professional claims (873I or 837P) reflecting members receiving emergency services for trauma associated with critical care.
    a. Claims are identified as “trauma associated with critical care” if any of the header or claims-line details include the procedure code G0390, as listed in Table PPED - A3.
2. Create an indicator for an emergency department service associated with critical care trauma if the header or any detail level claims have a critical trauma-related code per the criteria above.

Step 5: Identifying all encounters related to delivery of a newborn

1. From the remaining encounters, identify all institutional or professional claims (837I or 837P) reflecting members receiving emergency services for delivery of a newborn.
    a. Claims are identified as relating to delivery of a newborn if any of the header or claims-line details include a delivery surgical procedure code, as listed in Table PPED – A4.
2. Create an indicator for an emergency department service associated with delivery of newborn if the header or any detail level claims have a delivery-related code per the criteria above.

Step 6: Define Visit ID

1. Create an indicator for Professional claims and an indicator for Institutional claims.
2. Stack (append) together Professional and Institutional encounters.
3. Sort Professional and Institutional (837I and 837P) encounters by recipient ID, claim number, and date of service

4. Roll-up all claims on the basis of unique combinations of recipient ID, MCO, and date of service for an overall ED visit level dataset
    a. Claims may have more than one procedure code (99281-99285) indicating an ED visit. The most severe code (99285 being the most severe) should be assigned to the visit when claims are rolled up, regardless of whether the procedure code was on a Professional or Institutional encounter. Other procedure codes (CPT, HCPCS, and ICD-10-PCS) not within the 99281-99285 ED grouping are used for identifying exclusions only and do not need to be retained on the final visit-level dataset.
    b. Claims may have more than one diagnostic code. Professional claims are most likely to have varying diagnosis claims for the same visit. To assign a diagnosis code to the visit, the hierarchy is as follows:
        i. When principal diagnosis from the header Institutional ED record is present, use this diagnosis code.
        ii. If the principal diagnosis on the Institutional header encounter is missing, use the primary diagnosis associated with the header institutional claim.
        iii. If the visit only has a professional claim (and no associated Institutional claim), use the primary diagnoses on the header professional claim, if more than 1 professional claim is present, all primary header diagnoses codes should be retained.
        iv. If more than one institutional header claim is present, all principal header diagnoses should be retained.
    c. ER claims that occur on the same or previous day as an IP claim or observation stay claim are flagged with an inpatient or observation stay indicator.
    d. Prior to rolling up claims into a visit, some claims may be identified as including an exclusion indicator (inpatient, trauma, delivery or observation stay). If any claim in a given visit includes an indicator for an exclusion, the entire visit is flagged as containing an exclusion.
    e. Total visit costs are created by summing the header cost of the Institutional claim and the Professional claim
5. Assign a unique Visit ID on the basis of unique combinations of recipient ID, MCO, and date of service.

In the example below, the claims will be combined into one visit, with the CPT code 99285 as the primary CPT code.

MEDICAID_ICN	VISIT_ID	RECIP	DATE_BEGIN_SERVICE_HEADER	PROC_CODE	PRN_DIAG	CLAIM_TYPE	MCO
237000	1	A01	1/1/2019	99284	B01.9	OP	XYZ
431000	1	A01	1/1/2019	99285	B01.9	OP	XYZ
235000	1	A01	1/1/2019	93790	B01.9	Prof	XYZ
235000	1	A01	1/1/2019	93790	B01.9	Prof	XYZ

MEDICAID_ICN	VISIT_ID	RECIP	DATE_BEGIN_SERVICE_HEADER	PROC_CODE	PRN_DIAG	CLAIM_TYPE	MCO
245000	1	A01	1/1/2019	93790	B01.9	Prof	XYZ

Step 7: Exclude visits associated with inpatient stays, trauma, deliveries, or observation stays

1. Exclude all visits with an exclusion indicator.

The example below demonstrates flagging an ED visit as being associated with an inpatient stay, and therefore excluding this visit. Here, all three lines would be included in the visit roll-up. Line 1 had a revenue code defining this visit as an ED visit (0450). However, lines 2 and 3 have a bill type indicating an inpatient stay (11x). Therefore, all lines associated with this visit (all three in this example) would be flagged as an emergency department visit resulting in an inpatient stay.

MEDICAID_ICN	LINE_NUMBER	VISIT_ID	RECIP	DATE_BEGIN_SERVICE_HEADER	REV CODE	BILL_TYPE	MCO
235000	1	1	01	1/1/2019	0450	131	XYZ
235000	2	1	01	1/1/2019	0110	111	XYZ
235000	3	1	01	1/1/2019	0350	111	XYZ

In addition, if the same recipient had other claims, represented by different ICNs, but associated with the ED visit (not just the single ICN), all encounters are combined into one visit, and the entire visit is excluded. The example below demonstrates this process where one encounter in the visit indicated that the visit is associated with an exclusion criteria (inpatient stay) and therefore the entire visit is excluded.

MEDICAID_ICN	VISIT_ID	RECIP	DATE_BEGIN_SERVICE_HEADER	REV_CODE	BILL_TYPE	MCO	IND_IP
237000	1	01	1/1/2019	0450	131	XYZ	0
431000	1	01	1/1/2019	.	.	XYZ	0
235000	1	01	1/1/2019	0450	131	XYZ	0
235000	1	01	1/1/2019	0350	111	XYZ	1
245000	1	01	1/1/2019	0450	131	XYZ	0

IDENTIFYING PPED VISITS FOR NUMERATOR

Step 1: Identify PPED Visits

1. From the visit-level dataset created above, identify all visits associated with a PPED diagnosis code. All ED visits with a diagnosis included in the PPED list, regardless of procedure code, are included in the numerator.

a. Claims are identified as PPED if the diagnosis associated with the visit (principal diagnosis, or primary diagnosis if principal is not present, per criteria above) is listed in Table PPED – A1.

b. If multiple diagnoses are present due to only having professional claims or having multiple institution header claims, the claim is identified as PPED if any of the diagnoses listed on the claim are PPED. If there are multiple PPED diagnoses, retain all.

2. Create a new field [DX_PPED] with the diagnosis code if present in the PPED table per above.

As an example, for the visit with the principal diagnosis of B01.9 (Varicella without complication), the variable DX_PPED would take the value of B01.9 since it is listed as a PPED diagnosis code per Table PPED – A1. However, the visit (2) with the principal diagnosis of F10.20 (Alcohol dependence, uncomplicated) does not have a value for DX_PPED, as that diagnosis is not present on Table PPED- A1.

MEDICAID_ICN	VISIT_ID	PRN_DIAG	DATE_BEGIN_SERVICE_HEADER	PROC_CODE	RECIP	MCO	DX_PPED
237000	1	B01.9	1/1/2019	99284	01	XYZ	B01.9
431000	2	F10.20	1/1/2019	99283	02	XYZ	.

Step 2: Assign Percent Preventable for each PPED Diagnosis

1. For each PPED identified ED visit, assign the percent preventable based on the modified NYU Emergency Department Visit Classification Algorithm. A crosswalk of diagnoses to a percent preventable is listed in Table PPED – A1.
2. Create a field [Percent_Preventable] with the assigned value from the crosswalk on Table PPED – A1 for each diagnosis listed.
    a. If a visit has multiple PPED diagnoses, retain the diagnosis with the greatest percent preventable
3. For visits with no DX_PPED value, the Percent_Preventable is 0%
4. To note, the NYU algorithm classifies visits as Non-Emergent, Emergent/Primary Care Treatable, Emergent - ER Care Needed – Preventable/Avoidable, and Emergent – ER Care Needed – Not Preventable/Avoidable. The total percentages listed in Table PPED – A1 are determined by summing the percentages represented by the categories Non-Emergent, Emergent/Primary Care Treatable, and Emergent – ER Care Needed – Preventable/Avoidable, for a total number that represents the percent of visits for a given diagnosis that may be avoided at any level.

In the example below, the percent preventable associated with visits with a diagnosis of B01.9 is 93%, per Table PPED – A1. Since the visit with a diagnosis of F10.20 is not on Table PPED – A1, it is assigned a value of 0% for Percent_Preventable

VISIT_ID	PRN_DIAG	DATE_BEGIN_SERVICE_HEADER	PROC_CODE	RECIP	MCO	DX_PPED	PCT_PREVENTABLE
1	B01.9	1/1/2019	99284	01	XYZ	B01.9	0.93
2	F10.20	1/1/2019	99283	02	XYZ	.	0

5. To aggregate the total percent of preventable ED visit for any given MCO during the designated time period, the total percent preventable is summed across visits.

In the example below, MCO XYZ CCC Plus would have a numerator of 1.93 preventable visit.

MCO	VISIT_ID	PRN_DIAG	PCT_PREVENTABLE
MCO XYZ CCC Plus	1	B01.9	0.93
MCO XYZ CCC Plus	2	F10.20	0
MCO XYZ CCC Plus	3	A09.0	1.00

PERFORMANCE MEASURE CALCULATION

Step 1: Member months

1. The measure denominator is plan/program-specific member months as defined in "Identifying Member Months".

To report number of PPED visits per member month:

(Total number of PPED visits/Total MCO member enrolled months) * 1,000

In the example below, MCO XYZ CCC Plus has 131,907 member months (denominator). 8,123.75 visits are considered preventable (numerator). MCO XYZ has a PPED performance measure rate of 61.59 PPED visit per 1,000 member months.

MCO XYZ CCC PLUS	
PPED visits (preventable visits)	8,123.75
Member months	131,907
(PPED visits)/(member months)	0.06159
((PPED visits)/(member months))*1,000	**61.59**

3

30-DAY READMISSIONS

MEASURE PURPOSE AND DESCRIPTION

This measure assesses hospital readmissions occurring within 30 days of a previous hospital discharge. A high rate of patient readmissions may indicate inadequate quality of care in the hospital and/or a lack of appropriate post-discharge planning and care coordination after the discharge[1]. Hospital readmissions also represent health care costs that could possibly be avoided through high-quality outpatient care and post-discharge care coordination and support. They can be prevented by standardizing and improving discharge planning and transition of care processes to improve care coordination between care settings and providing support for patient self-management.[2]

MCOs are contracted to improve health outcomes, offering resources to implement transitional care management that includes effective discharge planning, transfer of information at the time of discharge, patient assessment and education, coordination of care, and monitoring in the post-discharge period. Throughout the hospitalization, discharge planning requires the providers and MCOs work together to ensure appropriate care, including follow-up to minimize complications. MCOs should have procedures in place to minimize their rate of readmissions, regardless of member type or increases in the population.

The CE readmissions measure begins by selecting acute-care hospital admission events with both the admission date and discharge date during the reporting period. An event is considered a readmission if the same individual is admitted to an acute-care facility within 30 days of discharge from an acute-care hospital, regardless of the reason for readmission. Admissions, for the same individual, occurring more than 30 days after discharge are not considered a readmission, but a new admission event.

Described below is the process for identifying readmission events, followed by technical specification details.

DATA SOURCE(S)

1. Managed care encounter records: All encounters for services (reflecting inpatient and outpatient services) submitted on the Institutional 837I or Professional 837P claim format within the defined reporting period.
    a. Date of service is identified through the header date of the encounter
2. Managed care enrollment records: Sourced from the Medicaid managed care capitation enrollment records. Capitation enrollment criteria are used to:
    a. Confirm patient's managed care enrollment at the time of service.
    b. Determine member benefit package.
    c. Collect demographic information for reporting purposes, including age, locality, state, race/ethnicity.

[1] NCQA, (2019). All-Cause Readmissions (PCRhttps://www.ncqa.org/hedis/measures/plan-all-cause-readmissions/,
[2] Boutwell, A., F. Griffin, S. Hwu, D. Shannon. 2009. "Effective Interventions to Reduce Rehospitalizations: A Compendium of 15 Promising Interventions." Cambridge, MA. Institute for Healthcare Improvement.

d. Calculate member months (MMs).

APPLICABLE DATA VALUE SETS

The following tables contain values used for the analysis:

Table 1 – Federal Information Processing Standards (FIPS): This table includes the FIPS definitions to define region for reporting. FIPS are not required for measurement development.

Table 2 – Partial Benefit Members and Duals: This table identifies the members with limited benefit packages or dual Medicare/Medicaid eligibility for exclusion, since inpatient records may not be collected for these members. Other members with TPL are included – note this may decrease the per unit cost of an inpatient readmission.

Table 3 – Inpatient definition: This table includes bill type codes that are used to identify an inpatient stay.

Table HR – 1 International Classification of Diseases ICD-10 Cancer Diagnoses: This table details cancer diagnoses used to exclude members with cancer diagnoses from readmission calculation.

Table HR – 2 Procedure Planned Admission codes: This table is equivalent to CMS's Table PR.1 for identifying procedures that are always associated with a planned admission for the purposes of their 30-day all cause readmission measure.

Table HR – 3 Diagnoses Planned Admission codes: This table is equivalent to CMS's Table PR.2 for identifying diagnoses that are always associated with a planned admission for the purposes of their 30-day all cause readmission measure.

Table HR – 4 Patient Status/Disposition, Expired: This table is used to identify admissions in which the member expired to remove from the denominator.

Table HR – 5 Patient Status/Disposition, AMA: This table is used to identify admissions in which the member left against medical advice to remove from the denominator.

Table HR – 6 Patient Status/Disposition, Transfer: This table is used to identify admissions in which the member was transferred to another acute care general hospital to remove from the denominator.

Table HR – 7 Patient Status/Disposition, Planned readmission: This table is used to identify admission in which the member was discharged with a planned readmission to remove from the denominator.

Table HR – 8 Select Pregnancy Diagnoses: This table is used to identify diagnoses associated with select pregnancy-related admissions to remove from the numerator.

DATA QUALITY AND COMPLETENESS

1. All encounters must include a date of service and a principal diagnosis or primary diagnosis to be considered of sufficient completeness for use in analysis.
2. Only fully adjudicated paid encounters are included.
3. Duplicate records should be removed prior to analysis. A record is considered a duplicate if:
    a. Records have the same claim number and detail number

b. Records have different claim numbers, but have the same member, date of service (detail), type of claim, bill type code, place of service, principal diagnosis codes and procedure codes, revenue codes, and provider.

    i. Dental, laboratory, transportation, and pharmacy encounters should be excluded from this logic as there is insufficient information on an encounter to ensure duplicate record.

4. Member must have a valid managed care enrollment record at time of service to be considered a valid encounter. Valid enrollment is defined as having a paid capitation record in the month in which the service is performed.

DATA ELEMENTS

Data elements used for Readmission analysis include the following and are listed out in the Data Elements table under *DMAS CE Performance Measures Technical Specifications Value Sets.xlsx*:

Data element	Description
Recipient ID	Recipient based on the Medicaid ID
Internal Claims Number (ICN)	Claim number/ICN used by MCO to identify a claim that does not include a claim detail line number
Serving Provider ID	Performing or servicing provider's National Provider Identification (NPI)
Billing Provider ID	Billing provider's National Provider Identification (NPI)
Begin Date of Service	First date of service on institutional header claim
End Date of Service	Last date of service on institutional header claim associated with a room and board revenue code
Derived Admission Date	The first date of service associated with an admission based on the methodology established in the specifications below
Derived Discharge Date	The last date of service associated with an admission based on the methodology established in the specifications below
Bill Type	National Uniform Billing Committee (NUBC) field used by CMS (two digits) to identify type of facility and type of care for the service that was performed
CPT/HCPCS Procedure Codes	A national standard code used for coding services, procedures and items. (e.g. a CPT code is used to describe the medical, surgical, radiologic, laboratory or anesthesiology services)
Principal Diagnosis	The diagnosis reported by the provider/hospital to be the main diagnosis associated with billed services and chiefly responsible for the admission
Surgical Procedure Codes	ICD-10 PCS surgical procedure codes identify specific procedures that a member receives. Used to identify exclusions
Revenue Codes	A national standard revenue code that helps to categorize the type of service provided to a patient in an institutional setting
Medical expenditures	Total amount spent by the MCO for services rendered

Data element	Description
Disposition/Patient Status	A national code used to identify discharge location, such as transfers, leaving against medical advice and members who expired during stay
Diagnosis Related Group (DRG)	A code used to identify classification and severity of admissions
Date of birth	Date of birth based on capitation enrollment record
Program/Delivery system	Identifier for whether a member is in a managed care program or FFS
Health Plan	Identifier for the health plan in which a member is enrolled during the month of the event (e.g., Anthem, Aetna, Virginia Premier, Optima, Magellan, United Healthcare)
Patient FIPS Code	State/county code associated with member address
State Code	Recipient State code associated with member address
Race	1=White 2=Black 3=Hispanic 4=Asian or Pacific Islander 5=Native American 6=Other
Sex	1=Male 2=Female

ELIGIBLE POPULATION CRITERIA

Inclusion Criteria

Members included in this analysis must be:

1. VA State Resident Medicaid managed care enrollees during reporting period.
2. Full benefit members in Medicaid and FAMIS
3. Between 1 year of age through 64 years of age.

Exclusion Criteria

Any members meeting any of the following criteria are excluded from this analysis:

1. All dual eligible (Medicare and Medicaid) members are excluded (see table 2 for definition). Other members with TPL are included. Note: This will decrease per unit cost estimates.
2. All partial benefit members are excluded from analysis.
    a. Partial benefit members include, limited benefit duals, Plan First and GAP members (see Table 2)
3. All members under the age of 1 or over the age of 64 are excluded.
    a. Age is calculated using the date of birth provided in capitation payments.
4. Members receiving only FFS services in any given month are excluded from analysis, as defined by not being present in managed care enrollment file for any given month

DENOMINATOR CRITERIA

The denominator for this analysis is all inpatient encounters for acute medical facilities for eligible beneficiaries. Additional members excluded due to a cancer diagnosis or discharge disposition (e.g. leaving against medical advice, transferred or expired) are not included in the denominator. The methodology for identifying these claims-based denominator exclusions is below.

Step 1: Exclude members with a cancer diagnosis at any point during the reporting period

1. Include all institutional and professional claims (837I and 837P) header and detail.
2. Identify all members with a diagnosis of metastatic cancer at any point during the reporting period based on diagnosis codes listed in Table HR – 1. Create a member-level indicator for members with cancer.
    a. Members with cancer are identified based on all available diagnosis codes (principal or otherwise) on all claims within a given reporting period.
3. Exclude all encounters associated with a member who is identified as having cancer during the reporting period. Encounters should be excluded even if that specific claim did not have the cancer diagnosis.
4. Exclude all additional Professional claims (837P). Inpatient admissions are based solely on Institutional claims (837I)

Step 2: Identifying all inpatient (IP) encounters

1. Include all institutional (837I) encounters for the specified reporting period, both header and detail claims.
2. Identify all institutional (837I) header or detail claims with a bill type indicating inpatient hospitalization
    a. Claims are identified as relating to an inpatient stay (having an inpatient hospitalization bill type) if the claim has any of the codes listed in Table 3.
3. Create an indicator for all ICNs associated with an inpatient stay based on above criteria and exclude all other claims.

Step 3: Defining an inpatient admission

1. Interim bills, typically indicated by the third digit of the bill type code (2, 3 or 4), may be submitted in addition to (or instead of) an initial claim. Additionally, hospitals may bill consecutive claims for the same admission. In both circumstances, claims should be combined to represent a single admission.
    a. Sort previously flagged inpatient encounters by recipient ID, ICN, date of service, and facility.
    b. Create an inpatient admission record based on recipient ID, facility, and consecutive dates of service. In combining ICNs and claims into a single admission, the earliest start date and latest end date should be used to create a continuous admission beginning with a Derived_Admission_Date variable created to mark the earliest start date and a Derived_Discharge_Date variable created to mark the latest end date.

In the example below, both claims are considered a single admission with a Derived_Admission_Date of 1/28/19 and a Derived_Discharge_Date of 3/9/2019.

MEDICAID_ICN	RECIP ID	DATE_BEGIN_SERVICE_HEADER	DATE_END_SERVICE_HEADER	NPI	BILL_TYPE	MCO
45611	01	1/28/2019	2/27/2019	1190400000	112	XYZ
45612	01	1/28/2019	3/9/2019	1190400000	113	XYZ

Similarly, in the example below, both claims are considered a single admission with a Derived_Admission_Date of 1/28/19 and a Derived_Discharge_Date of 2/5/2019.

MEDICAID_ICN	RECIP ID	DATE_BEGIN_SERVICE_HEADER	DATE_END_SERVICE_HEADER	NPI	BILL_TYPE	MCO
45611	0001	1/28/2019	1/31/2019	1190400000	111	XYZ
78911	0001	2/1/2019	2/5/2019	1190400000	111	XUZ

In the example below, the two claims are considered two separate admissions, one with a Derived_Admission_Date of 1/28/2019 and a Derived_Discharge_Date of 1/31/2019, and a second admission with a Derived_Admission_Date of 2/12/2019 and a Derived_Discharge_Date of 2/15/2019.

MEDICAID_ICN	RECIP ID	DATE_BEGIN_SERVICE_HEADER	DATE_END_SERVICE_HEADER	NPI	BILL_TYPE	MCO
45611	0001	1/28/2018	1/31/2018	1190400000	111	XYZ
78911	0001	2/12/2018	2/15/2018	1190400000	111	XYZ

2. Roll-up all inpatient claims on the basis of unique combinations of Recipient ID, MCO, and derived admission date for an inpatient admission level dataset.
    a. Claims may have more than one procedure code. All procedure codes listed in Table HR – 2 should be retained in order to identify planned readmissions.
    b. Claims may have more than one diagnostic code. To assign a diagnosis code to the visit, the hierarchy is as follows:
        i. Use the principal diagnosis on the header of the final discharge encounter when present.
        ii. If the principal diagnosis on the header discharge encounter is missing, use the principal diagnosis associated with the header claim on the first admission claim.
        iii. If there is more than one header claim with the same final discharge date and differing principal diagnoses, retain all diagnosis codes listed in Table HR – 3 in order to identify planned readmissions and HR – 8 in order to identify select pregnancy related readmissions.
    c. Claims may have more than one patient status/disposition. Retain the final patient status/disposition code from all included claims.
3. Total visit costs are created by summing the header cost of the inpatient encounters.

Step 4: Identifying disposition exclusion criteria

1. Exclude all admissions in which the member expired. As these admissions may not result in a readmission, these admissions are excluded from the denominator.
    a. Admissions are identified as meeting exclusion criteria for member expired if the patient status/disposition takes the value of any of the codes listed in Table HR – 4.
2. Exclude all admissions in which the member left against medical advice (AMA).
    a. Admissions are identified as meeting exclusion criteria for AMA if the patient status/disposition takes the value of any of the codes listed in Table HR – 5.
3. Exclude all admission in which the member was transferred to another acute general hospital.
    a. Admissions are identified as meeting exclusion criteria for transfer if the patient status/disposition takes the value of any of the codes listed in Table HR – 6.
4. Exclude all admission in which the member was discharged with a planned readmission.
    a. Admissions are identified as meeting exclusion criteria for discharge with planned readmission if the patient status/disposition has a value greater than or equal to 81 (see Table HR – 7).

Step 5: Final denominator calculation

1. The denominator is the total number of remaining admissions for a given plan and program.

NUMERATOR CRITERIA

Step 1: Identify readmissions within 30 days of discharge from hospital

1. Identify all admissions in which a person is admitted to the hospital within 30 days of a discharge, regardless of diagnosis.
    a. Sort admissions by recipient ID and derived admission date.
    b. Calculate the number of days between the Derived_Discharge_Date and subsequent Derived_Admission_Date for each member.
        i. If a member has multiple admissions, the timeframe (30 days) resets with each admission, setting a new index admission.

In the example below, member 01 has four admissions and two readmissions. The first admission on 1/28/2019 is an index admission because it is her first admission during the reporting period. Therefore, it cannot be a readmission. She subsequently had a readmission within 30 days on 2/10/2019. This admission now become the index admission for the following admission. Here, she again is admitted on 2/25/2019. Since this admission is within 30 days of her last admission, she is considered to have a second readmission. Finally, her fourth admission is on 4/20/2019. This is more than 30 days since her last admission, so it is not considered a readmission.

RECIP ID	DERIVED ADMISSION DATE	DERIVED DISCHARGE _DATE	INDEX ADMISSION	DAYS SINCE DISCHARGE	READMISSION	MCO
01	1/28/2019	2/5/2019	Yes	.	No	XYZ

RECIP ID	DERIVED ADMISSION DATE	DERIVED DISCHARGE _DATE	INDEX ADMISSION	DAYS SINCE DISCHARGE	READMISSION	MCO
01	2/10/2019	2/15/2019	Yes	5	Yes	XYZ
01	2/25/2019	3/15/2019	Yes	10	Yes	XYZ
01	4/20/2019	4/22/2019	Yes	36	No	XYZ

Step 2: Exclude planned admissions

1. Exclude planned readmissions using CMS's hospital-level 30-day all cause readmission methodology for procedures and diagnoses that are "Always Planned."[3]
    a. Exclude a readmission from the numerator if the readmission has a procedure code listed in Tables HR – 2 or a diagnosis code listed in Table HR – 3.

Step 3: Exclude select pregnancy related admissions

1. Exclude select pregnancy related readmissions associated with hypertension complicating pregnancy or early or threatened labor.
    a. Exclude a readmission from the numerator if the readmission has a diagnosis listed in Table HR – 8.

Step 4: Final numerator calculation

2. The numerator is the total number of remaining readmissions for a given plan and program.

PERFORMANCE MEASURE CALCULATION

To report number of readmissions relative to total admissions:

(Total number of eligible MCO readmissions/Total eligible MCO admissions)

In the example below, CCC Plus MCO XYZ has 4,907 admissions (denominator) and 654 admissions occurred within 30 days of a prior admission and are therefore considered readmissions (numerator). MCO XYZ has 0.13 readmission per admission or a 13.3% readmission rate.

MCO XYZ CCC PLUS	
Admissions	4,907
Readmissions	654
Readmission per admission	**0.133**
Potentially Preventable Readmissions Rate	**13.3%**

[3] CMS, *2018 All-Cause Hospital Wide Measure Updates and Specifications Report: Hospital-Level 30-Day Risk-Standardized Readmission Measure – Version 7.0*, Submitted by Yale New Have Health Services Corporation – Center for Outcomes Research & Evaluation, March 2018 (https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Downloads/Hospital-Wide-All-Cause-Readmission-Updates.zip)

4

POTENTIALLY PREVENTABLE ADMISSIONS (PPA)

MEASURE PURPOSE AND DESCRIPTION

Potentially preventable hospitalizations are inpatient stays that might be avoided with the delivery of high quality outpatient treatment and disease management.[4] In many cases primary or preventive health care can reduce the need for ED visits and inpatient hospitalizations for ambulatory care sensitive conditions, such as asthma, urinary tract infections, and complications of diabetes.[5] Since hospital costs represent a significant portion of all medical expenditures, preventing hospitalizations for conditions that can be managed in ambulatory settings is important for increasing quality of care and containing hospital costs. As such, a retrospective data analysis of the encounter data using the Agency for Healthcare Research and Quality (AHRQ) prevention quality indicators (PQIs) and pediatric quality indicators (PDIs) to identify ambulatory care sensitive conditions is used to evaluate managed care organization (MCO) clinical performance. MCOs are tasked to help their members stay healthy by either preventing the onset of certain diseases or avoiding complications of existing diseases resulting in fewer potentially preventable hospitalizations.

The PPA CE measure uses 10 of AHRQ's adult PQIs and four (4) pediatric PDIs in its analysis of potentially preventable hospital inpatient admissions. To account for factors that could impact management of members, a member duration criteria of continuous three (3) months ensures a minimum number of months a member is enrolled with an MCO before a claim can be considered a PPA.

Refer to following sections for additional detail related to data analysis steps.

DATA SOURCE(S)

1. Managed care encounter records: All encounters for services (reflecting inpatient and outpatient services) submitted on the Institutional 837I claim format within the defined reporting period.
    a. Date of service is identified through the header date of the encounter
2. Managed care enrollment records: Sourced from the Medicaid managed care capitation enrollment records. Capitation enrollment criteria are used to:
    a. Confirm patient's managed care enrollment at the time of service.
    b. Determine member benefit package.

[4] AHRQ, Prevention Quality Indicators Overview (https://www.qualityindicators.ahrq.gov/modules/pqi_overview.aspx)
[5] Fingar KR (Truven Health Analytics), Barrett ML (M.L. Barrett, Inc.), Elixhauser A (AHRQ), Stocks C (AHRQ), Steiner CA (AHRQ). Trends in Potentially Preventable Inpatient Hospital Admissions and Emergency Department Visits. HCUP Statistical Brief #195. November 2015. Agency for Healthcare Research and Quality, Rockville, MD. http://www.hcup-us.ahrq.gov/reports/statbriefs/sb195-Potentially-Preventable-Hospitalizations.pdf.

c. Collect demographic information for reporting purposes, including age, locality, state, race/ethnicity.

d. Calculate member months (MMs).

APPLICABLE DATA VALUE SETS

The following tables contain values used for the analysis:

Table 1 – Federal Information Processing Standards (FIPS): This table includes the FIPS definitions to define region for reporting. FIPS are not required for measurement development.

Table 2 – Partial Benefit Members and Duals: This table identifies the members with limited benefit packages or dual Medicare/Medicaid eligibility for exclusion, since inpatient records may not be collected for these members. Other members with TPL are included – note this may decrease the per unit cost of an inpatient admission.

Table 3 – Inpatient definition: This table includes bill type codes that are used to identify an inpatient stay for exclusion.

In addition to above data sets, the AHRQ PQI and PDI software v2019 ICD-10-CM/PCS (July 2019) is used to identify members with potentially preventable admissions. The software is used to generate indicators for the following PQIs/PDIs, and may be found at https://qualityindicators.ahrq.gov/Archive/Software.aspx:

INDICATOR	ADULT PQI
PQI 01	Diabetes short-term complications admission rate
PQI 03	Diabetes long-term Complications Admission Rate
PQI 05	Chronic obstructive pulmonary disease (COPD) or asthma in older adults admission rate
PQI 07	Hypertension admission rate
PQI 08	Heart Failure admission rate
PQI 11	Bacterial pneumonia admission rate
PQI 12	Urinary tract infection admission rate
PQI 14	Uncontrolled diabetes admission rate
PQI 15	Adult asthma admission rate
PQI 16	Lower-extremity amputation among patients with diabetes rate
INDICATOR	**PEDIATRIC PDI**
PDI 14	Asthma admission rate
PDI 15	Diabetes short-term complications admission rate
PDI 16	Gastroenteritis admission rate
PDI 18	Urinary tract infection admission rate

DATA QUALITY AND COMPLETENESS

1. All encounters must include a date of service and a principal diagnosis or primary diagnosis to be considered of sufficient completeness for use in analysis.
2. Only fully adjudicated paid encounters are included.
3. Duplicate records should be removed prior to analysis. A record is considered a duplicate if:
    a. Records have the same claim number and detail number.
    b. Records have different claim numbers, but have the same member, date of service (detail), type of claim, bill type code, principal diagnosis codes and procedure codes, revenue codes, and provider.
        i. Dental, laboratory, transportation, and pharmacy encounters should be excluded from this logic as there is insufficient information on an encounter to ensure duplicate record.
4. Member must have a valid managed care enrollment record at time of service to be considered a valid encounter. Valid enrollment is defined as having a paid capitation record in the month in which the service is performed.

DATA ELEMENTS

Data element	Description
Recipient ID	Recipient based on the Medicaid ID
Internal Claims Number (ICN)	Claim number/ICN used by MCO to identify a claim that does not include a claim detail line number
Date of birth	Date of birth based on capitation enrollment record
Program/Delivery system	Identifier for whether a member is a managed care program or FFS
Begin Date of Service	First date of service on institutional header claim
End Date of Service	Last date of service on institutional header claim associated with a room and board revenue code
Bill Type	National Uniform billing committee (NUBC) field used by CMS (two digits) to identify type of facility and type of care for the service that was performed
Health Plan	Identifier for the health plan in which a member is enrolled during the month of the event (e.g., Anthem, Aetna, Virginia Premier, Optima, Magellan, United Healthcare)
Medical expenditures	Total amount spent by the MCO for services rendered
Age	Age in years at date of admission.
Admission Source (referred to as PointOfOriginUB04 in AHRQ specifications)	Per national standards, indicates source of admission. 1=emergency room 2=another hospital 3=another facility, including LTC 4=court/law enforcement 5=routine/birth/other
Admission Type	Per national standards, the type of admission is used by PDI software 1=emergency 2=urgent 3=elective

	4=newborn 5=trauma center 6=other
Disposition/Patient Status	A national code used to identify discharge location, such as transfers, leaving against medical advice and members who expired during stay
DNR	Do not resuscitate order
Quarter	1=Jan-Mar 2=Apr-Jun 3=Jul-Sep 4=Oct-Dec
Diagnosis Related Group (DRG)	A code used to identify classification and severity of admissions
DRG Grouper Version	DRG Grouper Version
1-40 Diagnoses	All diagnoses reported
1-40 Present on Admission	'Y' OR 'W'
Serving Provider ID	Performing or servicing provider's National Provider Identification (NPI)
Billing Provider ID	Billing provider's National Provider Identification (NPI)
Visit Number	Unique Visit Number (equivalent of a discharge)
Major diagnostic category (MDC)	Diagnostic category based on federal MS-DRG grouper
30-day mortality indicator	Indicator that death occurred within 30-days
Expected Primary payer	Primary payer
Expected Secondary payer	Secondary payer
1-30 CPT/HCPCS Procedure Codes	A national standard procedure code. A CPT code is used to describe the medical, surgical, radiologic, laboratory or anesthesiology services.
1-10 Surgical Procedure Codes	ICD-10 PCS surgical procedure codes identify specific procedures that a member receives. Used to identify exclusions.
Patient FIPS Code	State/county code associated with member address
State Code	Recipient State
Race	1=White 2=Black 3=Hispanic 4=Asian or Pacific Islander 5=Native American 6=Other
Sex	1=Male 2=Female

CALCULATE DENOMINATOR

ELIGIBLE POPULATION CRITERIA

Inclusion Criteria

Members included in this analysis must be:

1. VA State Resident Medicaid managed care enrollees during reporting period.
2. Full benefit members in Medicaid and FAMIS
3. Between 1 year of age through 64 years of age.

Exclusion Criteria

Any member meeting any of the following criteria are excluded from this analysis:

1. All dual eligible (Medicare and Medicaid) members are excluded (see table 2 for definition). Other members with TPL are included. Note: This will decrease per unit cost estimates.
2. All partial benefit members are excluded from analysis
    a. Partial benefit members include, limited benefit duals, Plan First and GAP members (see Table 2)
3. All members under the age of 1 or over the age of 64 are excluded.
4. Age is calculated using the date of birth provided in capitation payments. Members receiving only FFS services in any given month are excluded from analysis, as defined by not being present in managed care enrollment file for any given month
5. Members with less than 3 months of continuous enrollment within a single health plan.
    a. A member is considered to have 3 months of continuous enrollment if a member has a record of a capitation payment to the same health plan for 3 consecutive months.
    b. For validation of continuous enrollment for the first three months of the defined reporting period, look back to the three months prior to the reporting period, so that a member may have an eligible member month in the first reporting month
        i. For example, if a member was continuously enrolled in MCO XYZ in October 2018 – March 2019, then that member is considered to have an eligible member month in January, February, and March 2019.

IDENTIFYING MEMBER MONTHS

1. Count the number of eligible members for each month of the given time period
    a. Eligible members include all members enrolled in managed care during the given reporting time period, accounting for all inclusion and exclusion criteria as listed above
    b. Member months are based on the capitation payments paid out to the plans for VA State Resident Medicaid enrollees' health care management for each enrolled member
    c. Each member enrolled with a managed care plan should be counted once for each month in which that person is enrolled for the reporting period

d. Using the above methodology, each health plan per Medicaid program should be assigned a total number of member months

CALCULATE NUMERATOR

IDENTIFYING ELIGIBLE INPATIENT ADMISSIONS

Step 1: Identifying all inpatient (IP) encounters

1. Include all institutional (837I) encounters for the specified reporting period, both header and detail claims.
2. Identify all institutional (837I) header or detail claims with a bill type indicating inpatient hospitalization
    a. Claims are identified as relating to an inpatient stay (having an inpatient hospitalization bill type) if the claim has any of the codes listed in Table 3.
3. Create an indicator for all ICNs associated with an inpatient stay based on above criteria and exclude all other claims.

Step 2: Defining an inpatient admission

4. Interim bills, typically indicated by the third digit of the bill type code (2, 3 or 4), may be submitted in addition to (or instead of) an initial claim. Additionally, hospitals may bill consecutive claims for the same admission. In both circumstances, claims should be combined to represent a single admission.
    a. Sort previously flagged inpatient encounters by recipient ID, ICN, date of service, and facility.
    b. Create an inpatient admission record based on recipient ID, facility, and consecutive dates of service. In combining ICNs and claims into a single admission, the earliest start date and latest end date should be used to create a continuous admission beginning with a Derived_Admission_Date variable created to mark the earliest start date and a Derived_Discharge_Date variable created to mark the latest end date.

In the example below, both claims are considered a single admission with a Derived_Admission_Date of 1/28/19 and a Derived_Discharge_Date of 3/9/2019.

MEDICAID_ICN	RECIP ID	DATE_BEGIN_SERVICE_HEADER	DATE_END_SERVICE_HEADER	NPI	BILL_TYPE	MCO
45611	01	1/28/2019	2/27/2019	1190400000	117	XYZ
45612	01	1/28/2019	3/9/2019	1190400000	111	XYZ

Similarly, in the example below, both claims are considered a single admission with a Derived_Admission_Date of 1/28/19 and a Derived_Discharge_Date of 2/5/2019.

MEDICAID_ICN	RECIP ID	DATE_BEGIN_SERVICE_HEADER	DATE_END_SERVICE_HEADER	NPI	BILL_TYPE	MCO
45611	01	1/28/2019	1/31/2019	1190400000	111	XYZ
78911	01	2/1/2019	2/5/2019	1190400000	111	XYZ

In the example below, the two claims are considered two separate admissions, one with a Derived_Admission_Date of 1/28/2019 and a Derived_Discharge_Date of 1/31/2019, and a second admission with a Derived_Admission_Date of 2/12/2019 and a Derived_Discharge_Date of 2/15/2019.

MEDICAID_ICN	RECIP ID	DATE_BEGIN_SERVICE_HEADER	DATE_END_SERVICE_HEADER	NPI	BILL_TYPE	MCO
45611	01	1/28/2019	1/31/2019	1190400000	111	XYZ
78911	01	2/12/2019	2/15/2019	1190400000	111	XYZ

5. Roll-up all inpatient claims on the basis of unique combinations of Recipient ID, MCO, and derived admission date and Billing_Provider_NPI for an inpatient admission level dataset.
    a. Claims may have more than one procedure code. All CPT/HCPCS procedure codes up to 30 should be retained to implement the AHRQ SAS software. Surgical procedure codes up to 10 should be retained.
    b. Claims may have more than one diagnostic code. Diagnoses up to 40 should be retained.
    c. Claims may have more than one patient status/disposition. Retain the final patient status/disposition code from all included claims.
    d. The MCO is assigned to the admission based on enrollment at the time of the Derived_Admission_Date.
6. Total visit costs are created by summing the header cost of the inpatient encounters.

Step 3: Prepare data for SAS QI software v2019 ICD-10-CM/PCS

1. Data should be prepared per recommended guidelines
    a. Create a visit level data set per the AHRQ PQI and PDI software v2019 ICD-10-CM/PCS (July 2019) specifications. The denominator is based on total health plan member months as prepared above.

PERFORMANCE MEASURE CALCULATION

Determine the PPA rate for each PQI and PDI using the following:

(Total number of eligible MCO admissions for each PQI or PDI/Total number of MCO member months) * 1000

In the example below, CCC Plus MCO XYA has 350 admissions for chronic obstructive pulmonary disease (COPD) (numerator) and 131,907 total eligible member months (denominator) during the reporting period. MCO XYZ has a member month adjusted, annual PPA rate of 2.65 hypertension admissions per 1,000 member months.

MCO XYZ CCC PLUS				
PQI	ADULT PQI	NUMERATOR	DENOMINATOR	RATE
PQI 07	COPD	350	131,907	2.65

Determine the cumulative PPA rate using the following:

(Total number of eligible MCO admissions across all PQIs and PDIs/Total number of MCO member months) * 1000

In the example below, CCC Plus MCO XYZ has 1,683 total PPA admissions (numerator) and 131,907 total eligible member months (denominator) during the reporting period. MCO ABC has a member month adjusted, annual PPA rate of 9.69 admissions per 1,000 member months.

MCO ABC CCC PLUS			
PQI	**ADULT PQI**	**NUMERATOR**	**DENOMINATOR**
PQI 01	Diabetes short-term complications admission rate	75	131,907
PQI 03	Diabetes long-term Complications Admission Rate	40	
PQI 05	Chronic obstructive pulmonary disease (COPD) or asthma in older adults admission rate	450	
PQI 07	Hypertension admission rate	50	
PQI 08	Heart Failure admission rate	400	
PQI 11	Bacterial pneumonia admission rate	65	
PQI 12	Urinary tract infection admission rate	82	
PQI 14	Uncontrolled diabetes admission rate	32	
PQI 15	Adult asthma admission rate	19	
PQI 16	Lower-extremity amputation among patients with diabetes rate	10	
PDI	**PEDIATRIC PDI**	**NUMERATOR**	**DENOMINATOR**
PDI 14	Asthma admission rate	12	131,907
PDI 15	Diabetes short-term complications admission rate	10	
PDI 16	Gastroenteritis admission rate	20	
PDI 18	Urinary tract infection admission rate	13	
TOTAL PPA RATE			
Sum of all PPAs		1278	
Total Member Months		131,907	
Cumulative PPA rate [i.e. (Total # of eligible PPAs/Total number of member months) * 1000]		9.69	