MATHEMATICA
Policy Research

FROM: Mathematica Policy Research **DATE:** 9/5/2016

SUBJECT: Quality Measure Development and Maintenance for CMS Programs Serving Medicare-Medicaid Enrollees and Medicaid-Only Enrollees:
Questions for Public Comment on Measure for Dual Beneficiaries

Project Overview:
The Centers for Medicare & Medicaid Services (CMS) has contracted with Mathematica Policy Research and its partners, the American Medical Association, Brandeis University, the National Committee for Quality Assurance, and Truven Health Analytics, to develop measures for the following groups of Medicaid beneficiaries: (1) those eligible for both Medicare and Medicaid, or "dual enrollees"; (2) those receiving long-term services and supports (LTSS) through managed care organizations or through fee-for-service delivery arrangements; and, (3) people with complex needs and high costs (BCN), substance use disorders (SUD), and physical and mental health integration needs (PMH). The contract number is HHSM-500-2013-13011I, Task Order #HHSM-500-T0004.

Documents and Measures for Comment:
As part of its measure development process, CMS requests interested parties to submit comments on the candidate or concept measures that may be suitable for this project.

This call for public comment concerns the measure specifications and justification for a measure for Medicare-Medicaid (dual) beneficiaries.

- Duals 1 – Hospitalization for Ambulatory Care Sensitive Conditions

The Measure Information Form (MIF) and Measure Justification Form (MJF) for this measure is available in separate files here: <Duals & HCBS measures MIFs & MJFs.zip>

The project team seeks public comment on the following questions:

1. Is the candidate measure useful for measuring an important domain of quality for Medicare-Medicaid (dual) beneficiaries?
2. Are you aware of any new or additional measures (beyond those listed in the MJF) that address this quality domain that have already been validated and widely used, are now under development, or will be submitted for consensus-based entity (NQF) endorsement?
3. Are the measure specifications in the MIFs clear, for example, the numerator, denominator, and any potential exclusions? What could be more clearly defined?
4. Are any revisions to the specifications needed either to make measure reporting more feasible, or to include or exclude certain individuals or events?
5. Are the proposed reporting levels of state, hospital referral region, and managed care plan appropriate?

6. Are you aware of any new or additional studies that should be included in the MJF that support (or weaken) the justification for developing the measure? If so, please describe the findings and provide a full citation.
7. Are there any sub-groups of dual eligible beneficiaries for whom measurement of hospitalization for ambulatory care sensitive conditions would not be appropriate?

Public Comment Instructions:

- If you are providing comments on behalf of an organization, include the organization's name and contact information.
- If you are commenting as an individual, submit identifying or contact information.
- Please do not include personal health information in your comments.
- In the subject line of your message, put **Public Comments Duals-HCBS**
- Send your comments **by close of business September 29, 2016** to MedicaidQualMeasures@mathematica-mpr.com

Measure Information Form

Project Title:

Quality Measure Development and Maintenance for CMS Programs Serving Medicare-Medicaid Enrollees and Medicaid-Only Enrollees

Project Overview:

The Centers for Medicare & Medicaid Services (CMS) has contracted with Mathematica Policy Research and its partners, the American Medical Association, Brandeis University, the National Committee for Quality Assurance, and Truven Health Analytics, to develop measures for the following populations of Medicaid beneficiaries:

- People eligible for both Medicare and Medicaid, or "Dual enrollees"
- People receiving long-term services and supports (LTSS) through managed care organizations
- People with substance use disorders, beneficiaries with complex needs, physical and mental health conditions, or who receive LTSS in the community, corresponding to the priority areas of the Medicaid Innovation Accelerator Program

The contract name is Quality Measure Development and Maintenance for CMS Programs Serving Medicare-Medicaid Enrollees and Medicaid-Only Enrollees. The contract number is HHSM-500-2013-13011I, Task Order # HHSM-500-T0004.

Date:

Information included is current on August 12, 2016.

Measure Name: Hospitalization for Ambulatory Care Sensitive Conditions

Descriptive Information

Measure Name (Measure Title De.2.) Hospitalization for Ambulatory Care Sensitive Conditions

Measure Type De.1. Outcome

Brief Description of Measure De.3. For Medicare-Medicaid ("Dual") beneficiaries age 18 and older, the rate of hospital admissions for ambulatory care sensitive conditions (ACSC) per 1,000 beneficiaries and the risk-adjusted ratio of observed to expected admissions for ACSC by chronic and acute conditions. This measure is reported as three rates:

- Chronic Conditions Composite
- Acute Conditions Composite
- Total (Acute and Chronic Conditions) Composite

If Paired or Grouped De.4. N/A

Subject/Topic Areas De.5. Prevention: Prevention; Cardiovascular: Congestive Heart Failure; Cardiovascular: Hypertension; Endocrine: Diabetes; Infectious Diseases: Infectious Diseases; Pulmonary/Critical Care: Chronic Obstructive Pulmonary Disease (COPD); Pulmonary/Critical Care: Asthma

Crosscutting Areas De 6. Health and Functional Status: Health and Functional Status; Care Coordination: Care Coordination; Safety: Safety; Prevention: Social Determinants; Prevention: Prevention

Measure Specifications

Measure-specific Web Page S.1. Not applicable. This measure is still under development.

If This Is an eMeasure S.2a. Not applicable. This is not an eMeasure.

Data Dictionary, Code Table, or Value Sets S.2b. Value sets for this measure (referenced below) are still under development.

For Endorsement Maintenance S.3. Not applicable. This measure is still under development.

Numerator Statement S.4.

Chronic Composite: Number of acute inpatient hospital admissions in the measurement year for diabetes short term complications, diabetes long term complications, uncontrolled diabetes, low-extremity amputation, COPD, asthma, hypertension, and heart failure.

Acute Composite: Number of acute inpatient hospital admissions in the measurement year for bacterial pneumonia, urinary tract infection, cellulitis and pressure ulcers.

Total Composite: Sum of acute and chronic composites

Note: Numerator statement may change as this measure is still under development.

Time Period for Data S.5.

12 months measurement year

[4 month continuous enrollment for health plan level measurement (12 months prior to measurement year)
Note: The continuous enrollment criteria are relevant to health plan level measurement. Beneficiaries much be enrolled in the health plan being measured in order for the health plan to have access to the necessary claims data to calculate the measure and identify comorbid conditions through claims data. As part of testing we will evaluate whether a shorter continuous enrollment period could be applied while still capturing the underlying comorbidity in the plan population.

Numerator Details S.6.
Note: Value sets will be developed and tested as part of field testing and provided as part an attachment to the MIF. Where applicable value sets will match the technical specifications for the AHRQ Prevention Quality Indicators available at http://www.qualityindicators.ahrq.gov/Modules/PQI_TechSpec_ICD10.aspx

Chronic ACSC: Follow the steps below to identify the number of chronic ACSC acute inpatient admissions.

Step 1: Identify all acute inpatient admissions during the measurement year. To identify acute inpatient admissions:

1. Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set).
2. Exclude nonacute inpatient stays (Nonacute Inpatient Stay Value Set).
3. Identify the discharge date for the stay.

Step 2: Acute-to-acute transfers (e.g. transfers from one hospital to another hospital): Keep the original discharge and drop the transfer's discharge. Organizations must identify "transfers" using their own methods and then confirm the acute inpatient care setting using the process in step 1.

Step 3: For the remaining acute inpatient discharges, identify discharges with any of the following:

- Primary diagnosis for diabetes short-term complications (ketoacidosis, hyperosmolarity or coma; Diabetes Short Term Complications Value Set).
- Primary diagnosis for diabetes with long-term complications (renal, eye, neurological, circulatory or unspecified complications; Diabetes Long Term Complications Value Set).
- Primary diagnosis for uncontrolled diabetes (Uncontrolled Diabetes Value Set).
- A procedure code for lower extremity amputation (Lower Extremity Amputation Procedures Value Set) and any diagnosis for diabetes (Diabetes Diagnosis Value Set).
    - Exclude any discharge with a diagnosis for traumatic amputation of the lower extremity (Traumatic Amputation of Lower Extremity Value Set) or toe amputation procedure (Toe Amputation Value Set).

- Primary diagnosis of COPD (COPD Diagnosis Value Set), excluding any discharge with a diagnosis for cystic fibrosis and anomalies of the respiratory system (Cystic Fibrosis and Respiratory System Anomalies Value Set).
- Primary diagnosis for asthma (Asthma Diagnosis Value Set), excluding any discharge with a diagnosis for cystic fibrosis and anomalies of the respiratory system (Cystic Fibrosis and Respiratory System Anomalies Value Set).
- Primary diagnosis for acute bronchitis (Acute Bronchitis Diagnosis Value Set) and diagnosis for COPD (COPD Diagnosis Value Set).
    - Exclude any discharge with a diagnosis for cystic fibrosis and anomalies of the respiratory system (Cystic Fibrosis and Respiratory System Anomalies Value Set).
- Primary diagnosis for heart failure (Heart Failure Diagnosis Value Set), excluding any discharges with a cardiac procedure (Cardiac Procedure Value Set).
- Primary diagnosis for hypertension (Hypertension Value Set), excluding any discharge with a cardiac procedure (Cardiac Procedure Value Set) or diagnosis of Stage I-IV kidney disease (Stage I-IV Kidney Disease Value Set) with a dialysis procedure (Dialysis Value Set).
  Note: For criteria that include multiple events, codes must be on the same claim.

Acute ACSC: Follow the steps below to identify the number of acute ACSC acute inpatient admissions.
Step 1: Identify all acute inpatient discharges during the measurement year. To identify acute inpatient admissions:

1. Identify all acute and nonacute inpatient stays (Inpatient Stay Value Set).
2. Exclude nonacute inpatient stays (Nonacute Inpatient Stay Value Set).
3. Identify the discharge date for the stay.

Step 2: Acute-to-acute transfers (e.g. transfers from one hospital to another hospital): Keep the original discharge and drop the transfer discharge. Organizations must identify "transfers" using their own methods and then confirm the acute inpatient care setting using the process in step 1.

Step 3: For the remaining acute inpatient discharges, identify discharges with the any of the following:

- Primary diagnosis of bacterial pneumonia (Bacterial Pneumonia Value Set), excluding any discharge with a diagnosis of sickle cell anemia, HB-S disease (Sickle Cell Anemia and HB-S Disease Value Set) or procedure or diagnosis for immunocompromised state (Immunocompromised State Value Set).
- Primary diagnosis of urinary tract infection (Urinary Tract Infection Value Set), excluding any discharge with a diagnosis of kidney/urinary tract disorder (Kidney and Urinary Tract Disorder Value Set) or procedure or diagnosis for immunocompromised state (Immunocompromised State Value Set).
- Primary diagnosis of cellulitis (Cellulitis Value Set).

- Primary diagnosis of pressure ulcer (Pressure Ulcer Value Set).

Note: For criteria that include multiple events, codes must be on the same claim.

Total ACSC: Count of inpatient stays with a discharge date during the measurement year for a chronic or acute ACSC. Sum the events from the Chronic ACSC and Acute ACSC categories to obtain a total ACSC.

Note: Numerator details may change as this measure is still under development.

Denominator Statement S.7.

Adults age 18+

Note: Denominator statement may change as this measure is still under development.

Target Population Category S.8.

Populations at Risk: Dual-eligible beneficiaries;
Populations at Risk: Individuals with multiple chronic conditions;
Senior Care

Denominator Details S.9.

Adults age 18+ continuously enrolled for the measurement year and the year prior to the measurement year.

Note: Denominator statement may change as this measure is still under development.

Denominator Exclusions (NQF Includes "Exceptions" in the "Exclusion" Field) S.10.

- See details in the numerator details for exclusions from the individual composite indicators
- Discharges for obstetrics
- Hospital transfers

Note: Denominator exclusions may change as this measure is still under development.

Denominator Exclusion Details (NQF Includes "Exceptions" in the "Exclusion" Field) S.11.

- See details in numerator detials for exclusions from the individual composite indicators
- Discharges for obstetrics (Obstetrics Value Set)
- Hospital transfers: Keep the original discharge and drop the transfer's discharge. Organizations must identify "transfers" using their own methods and then confirm the acute inpatient care setting using the process in step 1.

Note: Denominator exclusion details may change as this measure is still under development.

Stratification Details/Variables S.12.

Consideration of stratification by the following variables:

- Ages 18-64
- Ages 65+
- Community dwelling non-HCBS user
- Community dwelling HCBS users
- Admissions from non-acute settings of care

Note: Stratification details may change as this measure is still under development. A separate risk adjustment model may be needed for older and younger dual eligible beneficiaries. Older and younger beneficiaries may have different risk factors that predict hospitalization. Similarly, adults receiving home and community based services and adults admitted to the hospital from non-acute facilities (i.e., skilled nursing, custodial nursing, inpatient rehabilitation, intermediate care) may have different risk factors. We will explore the need for stratification as part of measure testing.

Risk Adjustment Type S.13.
Two approaches have been tested for HCBS users and Managed Care Organizations: Negative binomial and two-step combined logistic and poisson models. These models will be explored for the Duals population during testing.

Statistical Risk Model and Variables S.14.
Proposed Risk Adjustment Variables: Age, Gender and Co-morbid conditions. Two models of defining co-morbid conditions have been tested: CMS Hierarchical Condition Categories and Chronic Conditions Warehouse.

Detailed Risk Model Specifications S.15.

Type of Score S.16. Rate/Proportion. Rate reported per 1,000 beneficiaries.

**Note: The AHRQ prevention quality indicators present state level rates as per 100,000, however at the health plan level this rate may be less meaningful if a plan has fewer than 100,000 beneficiaries.*

Interpretation of Score S.17. Lower is better

Calculation Algorithm/Measure Logic S.18. The number of observed discharges divided by the number of members in the eligible population, multiplied by 1,000 within each stratification and for each ACSC category and Total ACSC.

Note: Measure logic may change as this measure is still under development.

Calculation Algorithm/Measure Logic Diagram URL or Attachment S.19. Not applicable.

Sampling S.20. Not applicable.

Survey/Patient-Reported Data S.21. Not applicable.

Missing Data S.22. Not applicable.

Data Source S.23. Administrative Claims

Data Source or Collection Instrument S.24. Not applicable.

Data Source or Collection Instrument (Reference) S.25. Not applicable.

Level of Analysis S.26. Health Plan; Population: State; Other (TBD)

Care Setting S.27. Home Health; Hospital/Acute Care Facility; Post-Acute/Long Term Care Facility: Nursing Home/Skilled Nursing Facility; Post-Acute/Long Term Care Facility: Inpatient Rehabilitation Facility; Post-Acute/Long Term Care Facility: Long Term Acute Care Hospital

Composite Performance Measure S.28. Aggregation rules for the chronic, acute and total composites are described above in the numerator details.

Measure Justification Form

Project Title:

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The contract name is Quality Measure Development and Maintenance for CMS Programs Serving Medicare-Medicaid Enrollees and Medicaid-Only Enrollees. The contract number is HHSM-500-2013-13011I, Task Order # HHSM-500-T0004.

Date:

Information included is current on July 6, 2016.

Measure Name

Hospitalization for Ambulatory Care – Sensitive Conditions

Type of Measure

Outcome

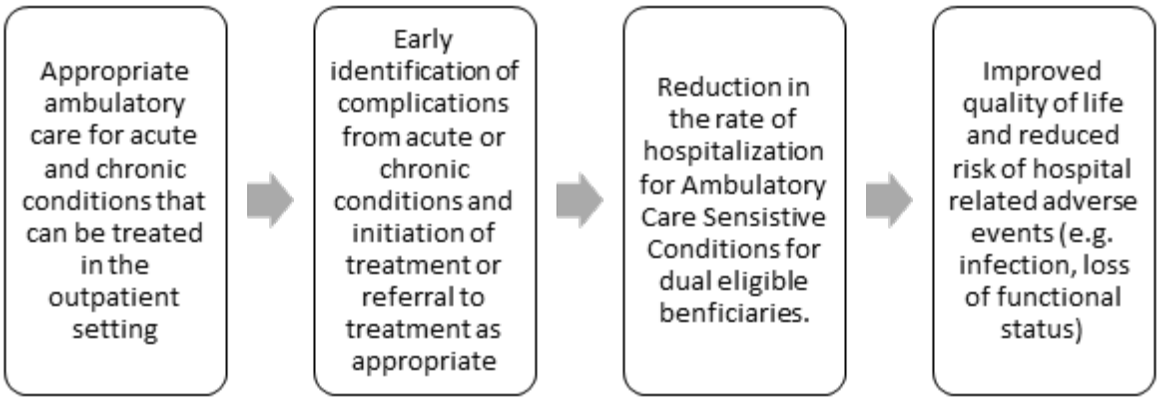
Importance

1a—Opportunity for Improvement

1a.1. This is a measure of outcome.

- Health outcome: This measure assesses the rate of hospitalization for ambulatory care sensitive conditions for the dual eligible population. Hospitalization in this population can negatively impact health by contributing to a decline in function, increasing the risk of hospital-related adverse events and potentially negatively impacting quality of life.

1a.2.—Linkage



1a.2.1 Rationale

Appropriate access to care, high quality care coordination, a focus on chronic disease self-management and connection to community resources can reduce the probability that individuals with ambulatory care sensitive chronic and acute conditions will develop complications or exacerbations that result in hospitalization. Since hospitalization poses several risks for older adults and adults with disability, who frequently develop serious conditions as a result of hospitalization such as delirium, infection and decline in functional ability (Gillick et al. 1982; Covinsky et al. 2011), reducing the rate of hospitalization could significantly improve population health and quality of life. Measurement of hospitalization for ACSCs could provide important information to states, health plans, providers, consumers and other stakeholders as to how well a system of care helps adults with chronic and acute conditions prevent hospitalization.

Development of Ambulatory Care Sensitive Conditions (ACSCs):
ACSCs were originally designed to evaluate the potential impact of differences in socioeconomic status and resources on hospitalization rates. An early study by Billings et al. (1993) aimed to improve the understanding of the causes of any variation in hospital use and

evaluating the effectiveness of programs designed to improve access to care. His team used a modified Delphi approach to define conditions for which timely and effective outpatient care can help to reduce the risks of hospitalization by either preventing the onset of an illness or condition, controlling an acute episodic illness or condition, or managing a chronic disease or condition. They found adults under the age of 65 in low-income areas had substantially higher admission rates for ACSCs than those in high-income areas. The authors suggested that adults in low income areas are more likely to be affected by access problems, given higher rates of the uninsured and less experience in navigating the complexities of the fragmented health care delivery system. Since this early study, many more studies have examined the effect of income, insurance and access on ACSC hospitalization and many more diagnoses have been classified in various research studies as potentially ACSC hospitalizations. Across studies the list of potential ACSC now includes over 100 conditions.

Research on ACSCs in Dual Eligible Population:

CMS contracted with RTI to study hospitalization for ACSCs in the dual eligible beneficiaries who were receiving long term services and supports (LTSS) in nursing facilities and home and community based services (HCBS) waiver programs. The study examined hospitalization for specific conditions selected by a technical expert panel as potentially preventable or manageable in 1) the community setting[1] and 2) a nursing facility[2]. Among this population of dual eligible beneficiaries receiving LTSS at home or in a nursing facility, 39 percent of the nearly 1 million hospitalizations in 2005 were found to be potentially preventable because the condition could have been prevented or treated in a lower level of care setting than a hospital. Sixty-three percent of these hospitalizations originated from nursing facility stays covered by Medicaid, 19 percent from skilled nursing facility stays covered by Medicare and 18 percent from Medicaid HCBS waivers. Five highly prevalent conditions (pneumonia, CHF, urinary tract infections, dehydration and COPD/asthma) accounted for 78 percent of the potentially avoidable hospitalizations across all settings. Pneumonia accounted for over 30 percent of potentially avoidable hospitalizations in both Medicare covered skilled nursing facility stays and Medicaid covered nursing facility stays (Walsh et al 2010).

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[1] *Possibly preventable/manageable in a nursing facility:* anemia, CHF, hyper and hypotension, hyper and hypoglycemia diabetes with ketoacidosis or hypermolar coma, dehydration, acute renal failure, hypokalemia, hyponatremia, constipation/fecal impaction/obstipation, diarrhea, c. difficile, gastroenteritis with nausea and vomiting, cellulitis, skin ulcers including pressure ulcers, pneumonia, bronchitis, UTI, falls and trauma, altered mental status/acute confusion/delirium, psychosis, severe agitation, organic brain syndrome, COPD, asthma, chronic bronchitis, weight loss, nutritional deficiencies, adult failure to thrive, seizures

[2] *Possibly preventable/manageable in a community setting*: anemia, CHF, hyper and hypotension, hyper and hypoglycemia diabetes with ketoacidosis or hypermolar coma, dehydration acute renal failure hypokalemia hyponatremia, constipation/fecal impaction/obstipation, cellulitis, skin ulcers including pressure ulcers, pneumonia, UTI, organic brain syndrome, COPD, asthma, chronic bronchitis, seizures

The report also found that potentially avoidable hospitalization rates varied greatly by state and that state policy variables affect potentially avoidable hospitalization rates in the HCBS population. All LTSS settings saw almost a fourfold difference between the lowest and highest rate of potentially avoidable hospitalizations (from 158 per 1,000 person years to 591 per 1,000 person years). Differences in health status accounted for some of these hospitalizations; the mean number of chronic conditions by state varied from 1.9 to 3.3 (the percentage of individuals aged 85 and older ranged from 20 percent to 47 percent of the study population). The report's multivariate analysis showed that HCBS waiver enrollees in states spending a higher proportion of Medicaid long-term care dollars on HCBS and covering Medicaid state-plan personal care services were at less risk of potentially avoidable hospitalizations compared to states without a personal care option or spending a smaller proportion of their long-term care dollars on HCBS.

Research on ACSC in Medicare Populations:

We identified two studies that specifically looked at hospitalization for ACSC in the Medicare population. In 2001 McCall et al. evaluated hospitalization for ACSC for Medicare + Choice (MC) programs (now called Medicare Advantage) and found that the adult 85 or over experience statistically significant higher rates of ACSC admissions[3] and are more likely to die during an ACSC admission than younger Medicare beneficiaries. The study also found lower overall rates of hospitalization in the MC population than in the Medicare FFS population. On average, MC adjusted hospitalization rates were about one-third lower than comparable FFS rates (McCall et al 2001). A later study of Medicare FFS beneficiaries found that changes in sociodemographic characteristics and health status among elderly Medicare FFS beneficiaries between 1993 and 2000 explained a substantial proportion of the observed positive trend in ACSC hospitalization rates for congestive heart failure, chronic obstructive pulmonary disease, and lower limb peripheral vascular disease. While having a usual source of care or having supplemental health insurance did not appreciably reduce the likelihood of an ACSC hospitalization within the Medicare population, poverty appeared to have the strongest relationship with rate of ACSC hospitalization (McCall 2004).

Development of Prevention Quality Indicators (PQIs):

In 2001, AHRQ's Evidence-Based Practice Center (EPC) at the University of California San Francisco (UCSF) and Stanford University developed the Prevention Quality Indicators (PQI) based on the original Healthcare Cost and Utilization Project (HCUP) Quality Indicators developed in the early 1990s (Davies 2001). They reviewed the evidence on ACSC to date

[3] ACSCs in McCall 2001: chronic (asthma/chronic obstructive pulmonary disease (COPD), congestive heart failure, seizure disorder, diabetes, and hypertension); acute (hypoglycemia, urinary tract infections, cellulitis, dehydration, hypokalemia, gastric and duodenal ulcer, bacterial pneumonia, and severe ear/nose/throat infections); and preventable (influenza and malnutrition).

and used a multi-stakeholder review process. They selected sixteen ambulatory care sensitive conditions to be used as area-level quality indicators (dehydration, bacterial pneumonia, urinary tract infection, perforated appendix, angina, asthma, COPD, CHF, diabetes short term complications, uncontrolled diabetes, diabetes long term complications, lower extremity amputation in diabetics, hypertension, low birth weight, pediatric asthma and pediatric gastroenteritis).

In general, the AHRQ, UCSF, and Stanford research team (referred to hence forth as AHRQ team) found there was little published evidence for individual indicators, presumably due to the common usage of indicators within sets. Most studies have examined sets of ACSC conditions, without providing data stratified by indicator. In general, across studies the AHRQ team found condition prevalence, race and socioeconomic status were independent predictors of the rate of hospitalization for ACSC in the general population. At the individual condition level, self-reported health status, functional limitations, several chronic diseases, and a chronic disease risk score are associated with preventable hospitalizations among Medicare beneficiaries. Income was found to be a much less powerful predictor of hospitalization for chronic ACSC among Medicare beneficiaries after adjusting for health factors (Davies 2001).

While many studies have been published about the association between access to care and ACSC hospitalization, AHRQ found few studies that tested true measures of access to care, as opposed to socioeconomic status. One study found that patient reported "difficulty in receiving medical care when needed" explained 50% of the variability in hospitalization rates for 5 chronic medical conditions. Having a regular source of care, and a higher primary care physician/population ratio, were also independently associated with avoidable hospitalization rates (Bindman 1995). Other studies have shown that the physician to population ratio for family and general physicians is more strongly associated with avoidable hospitalization rates than measures that include internists, pediatricians, or all physicians. Beneficiaries in fair or poor health are at increased risk if they lived in a primary care shortage area. These relationships between access indicators (e.g. patient reported access, having a regular source of care and the primary care physician to population ratio) and hospitalization for ACSC did not hold in two separate studies of rural zip codes, suggesting that avoidable hospitalization rates are invalid indicators of access in rural areas.

Expanding the Use of PQIs for Performance Measurement:

More recently, AHRQ convened a multi-stakeholder panel of experts to review the evidence for all of the AHRQ PQI and assess the appropriateness of using the PQI for quality improvement, public reporting and pay-for-performance (Davies 2009). This group used a Delphi and Nominal Panel method for soliciting feedback from panel members on the face validity of the PQI for different settings and uses. Overall, the panelists rated most of the

indicators as appropriate for many settings and use. The table below summarized the panel recommendations regarding the use of the indicators for comparative reporting and pay for performance at the payer level. The panel also made recommendations for the provider, area and long term care settings which are not listed below. The lowest rated indicators were perforated appendix, dehydration, bacterial pneumonia, UTI and angina. Panel members had "major concerns regarding use" for these measures in either pay-for-performance or comparative reporting at the payer level.

Indicators	Comparative Reporting	Pay for Performance
COPD	♦♦	♦♦+
Asthma (<39)	♦♦+	♦♦+
Hypertension	♦♦+	♦♦
Angina	♦♦	♦+
CHF	♦♦+	♦♦
Perforated Appendix	♦+	♦+
Diabetes Short Term Complications	♦♦+	♦♦
Diabetes Long Term Complications	♦♦	♦♦
Lower Extremity Amputation in Diabetes	♦♦+	♦♦
Bacterial Pneumonia	♦♦	♦
UTI	♦♦	♦+
Dehydration	♦+	♦

♦ Major concern regarding use

♦♦ Some concern

+One of the two panels reported a higher level of support for the measure than shown

Below we summarize the qualitative recommendations of the panelists regarding each of the conditions and pathways for payers and providers to influence hospitalization (Davies 2009).

- **Diabetes Related Indicators:** Payer and provider organizations may be able to reduce hospitalization for diabetes (short term complications, long term complications and uncontrolled diabetes) by enhancing coverage for medication, supplied for blood glucose monitoring and care coordination for diabetes patients. Ongoing patient education and promotion of self-management might also reduce rates of hospitalization for diabetes.

- **Perforated Appendix:** Panelists did not feel this indicator was necessarily reflective of high quality outpatient care since most appendicitis patients present directly to the emergency room. The panelists felt that time to presentation, which is the highest predictor of appendicitis, was not in the health system's control. They also expressed concerns that older adults tend to present atypical symptoms of appendicitis and therefore may be more difficult to diagnosis.
- **COPD and Asthma:** Panelists cited several mechanisms by which health systems could reduce hospitalization for COPD and Asthma including increase reimbursement for smoking cessation programs, medication, access to pulmonary rehabilitation and oxygen therapy. Additionally, patient education and improved care coordination could reduce rates of hospitalization for COPD Asthma. Panelists also expressed concern that this rate may reflect some level of "social hospitalization" for situations where the provider feels the support in the home environment is insufficient for recovery.
- **Hypertension:** Payer and provider organizations may be able to reduce hypertension related hospitalizations through enhanced coverage of preventive primary care visits, patient education and anti-hypertensive medication. Improved rates of blood pressure screening may also reduce rates of hospitalization.
- **Congestive Heart Failure:** Similar to the other chronic conditions, panelists cited enhanced coverage of medications, access to primary care, and patient education as the main mechanisms through which plans could mitigate hospitalization for CHF. They also suggested outreach to at-risk patients through teleconferencing and home visits had the potential to significantly reduce hospitalization.
- **Dehydration:** In general panelists expressed concern about the state of evidence linking payer and provider organization intervention to reduction of admission for dehydration. They cited that many older adults do not present in a timely manner to the outpatient setting and patients are rarely sent home from ambulatory care with hypovolemia.
- **Bacterial Pneumonia:** Panelists agreed that payers could influence hospitalization for bacterial pneumonia by ensuring access to immunizations and antibiotics. However, there was uncertainty about the degree to which increased access could reduce hospitalization in particularly high risk populations.
- **Urinary Tract Infection:** Some panelists expressed concern about the lack of evidence directly linking care in the outpatient setting to hospitalization for UTI. Others suggested that enhanced coverage of antibiotics and careful attention to inappropriate use of Foley/suprapubic catheters could impact rates of hospitalization.
- **Angina without cardiac procedure:** Panelists were divided with regard to the degree to which payers and providers could influence hospitalization for angina. Payers may promote education and lifestyle change (smoking cessation, self-care, regular primary care visits), but panelists did not express confidence that such interventions would reduce the rate of hospitalization. Panelists expressed concern that many individuals' angina are directed to the emergency room where thresholds for admission for chest pain are low due to the fear of possible legal action.

- **Lower Extremity Amputation:** Minor problems in the lower extremities can be treated in outpatient care limiting the progression of the disease. Payer organizations may be able to enhance coverage of medication, supplies for diabetes self-management and promote care coordination. There was a concern that patient factors such as diet, income and geographic limitations may limit the control the health care system has on admission rates.

1a.3.—Linkage

1a.3.1. Source of Systematic Review. Not applicable.

1a.4.—Clinical Practice Guideline Recommendation

1a.4.1. Guideline Citation. Not applicable.

1a.4.2. Specific Guideline. Not applicable.

1a.4.3. Grade. Not applicable.

1a.4.4. Grades and Associated Definitions. Not applicable.

1a.4.5. Methodology Citation. Not applicable.

1a.4.6. Quantity, Quality, and Consistency. Not applicable.

1a.5.—United States Preventative Services Task Force Recommendation

1a.5.1. Recommendation Citation. Not applicable.

1a.5.2. Specific Recommendation. Not applicable.

1a.5.3. Grade. Not applicable.

1a.5.4. Grades and Associated Definitions. Not applicable.

1a.5.5. Methodology Citation. Not applicable.

1a.6.—Other Systematic Review of the Body of Evidence

1a.6.1. Review Citation. Not applicable.

1a.6.2. Methodology Citation. Not applicable.

1a.7.—Findings from Systematic Review of Body of the Evidence Supporting the Measure

1a.7.1. Specifics Addressed in Evidence Review. Not applicable.

1a.7.2. Grade. Not applicable.

1a.7.3. Grades and Associated Definitions. Not applicable.

1a.7.4. Time Period. Not applicable.

1a.7.5. Number and Type of Study Designs. Not applicable.

1a.7.6. Overall Quality of Evidence. Not applicable.

1a.7.7. Estimates of Benefit. Not applicable.

1a.7.8. Benefits Over Harms. Not applicable.

1a.7.9. Provide for Each New Study. Not applicable.

1a.8.—Other Source of Evidence

1a.8.1. Process Used. Not applicable.

1a.8.2. Citation

AHRQ. (2007) Guide to Prevention Quality Indicators. Agency for Healthcare Research and Quality, Rockville, MD. Accessed July 31, 2013. Available at: http://www.qualityindicators.ahrq.gov/Downloads/Modules/PQI/V31/pqi_guide_v31.pdf

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1b.—Evidence to Support Measure Focus

1b.1. Rationale

Reducing the rate of hospitalization for Ambulatory Care Sensitive Conditions for the dual eligible population could significantly improve population health and quality of life.

1b.2. Performance Scores

Below we present data on performance from two measures of hospitalization for ACSC based on the AHRQ PQI indicators:

- **Home and Community Based Services (HCBS) Ambulatory Care Sensitive Conditions (ACSC) Chronic and Acute Composites (Bohl et al. 2015):** The rate hospitalization for acute conditions (dehydration, bacterial pneumonia, urinary tract infection) and chronic conditions (angina, asthma, COPD, CHF, diabetes short term complications, uncontrolled diabetes, diabetes long term complications, lower extremity amputation in diabetics, hypertension) risk adjusted for the Medicaid Home and Community Based Services users population, which includes both dual and Medicaid-only beneficiaires.

2010 Observed Home and Community Based Services (HCBS) Composite Rate of Hospitalization per 1,000 Adults, by State

	Acute Composite Observed Rate	Chronic Composite Observed Rate
National Average	42.21	65.24
Minimum Score	5.50	4.27
Maximum Score	75.70	115.84
Median	47.03	61.02

Source: Mathematica analysis of 2010 HCBS users. Data sources included the 2010 MAX PS, OT, and IP files, MedPAR file, and MBSF.
Notes: Observed rate is presented as acute or chronic ACSC events per 1,000 HCBS users. MME and Medicaid-only beneficiaries are combined for each state.

- **HEDIS Hospitalization for Potentially Preventable Complications**: The rate of hospitalization for acute conditions (bacterial pneumonia, urinary tract infection, pressure ulcers, cellulitis) and chronic conditions (asthma, COPD, CHF, diabetes short term complications, uncontrolled diabetes, diabetes long term complications, lower extremity amputation in diabetics, hypertension) risk adjusted for the Medicare Advantage older adult population.

2010 Observed Medicare Advantage Composite Rate of Hospitalization per 1,000 Adults, by Plan

Age		Chronic	Acute	Chronic + Acute	All Cause*
65-74	**Average**	**30.98**	**22.05**	**53.03**	**236.31**
	Minimum Score	5.28	8.14	14.39	109.98
	Median	28.20	19.29	50.41	214.01
	Maximum Score	89.35	60.20	124.75	463.92
75-84	**Average**	**42.43**	**41.40**	**83.83**	**337.47**
	Minimum Score	10.96	17.39	32.50	162.92
	Median	45.18	37.01	86.14	309.17
	Maximum Score	74.01	101.25	166.10	516.17
85+	**Average**	**64.55**	**77.11**	**141.65**	**468.35**
	Minimum Score	19.15	24.41	49.05	205.83
	Median	6,.03	74.35	135.07	453.64
	Maximum Score	116.99	153.08	254.72	716.09

Source: Inovalon MORE+ Database of Medicare Advantage
Notes: Observed rate is presented as acute or chronic ACSC events per 1,000 Medicare Advantage beneficiares.
*All cause admission includes all admisisons that occurred in the measurement year.

1b.3. Summary of Data Indicating Opportunity

HCBS State Data

Among states, there is variation in the observed rate of hospitalization for ACSC for HCBS users, suggesting a performance gap. The maximum rate is 13 times higher than the lowest rate for chronic ACSC and 14 times higher for acute conditions. It is important to note that some of this variation may be due to different HCBS populations in each state. For example, New Mexico's acute composite observed rate (16.25 per 1,000 HCBS beneficiares) is five times lower than the rate in Mississippi (75.70 per 1,000 HCBS beneficiares), however Mississippi's population has a generally higher level of chronic conditions compared with New Mexico's. Additional analysis of risk adjusted rates (not shown here) show a different pattern of variation.

Medicare Advantage Data

Adults 65-74 had the lowest rate of hospitalization for acute and chronic complications with a total of 53.03 hospitalizations on average per 1,000 beneficiaries (30.98 hospitalizations for chronic conditions; 22.05 hospitalizations for acute conditions). The range in performance

from the 10th to the 90th percentile was 16.97 hospitalizations to 95.44 hospitalizations (spread of 78.47 between 10th and 90th; lower rate indicates better performance). For reference Table 2 also shows the rate of all-cause hospitalization showing that hospitalization for these ambulatory care sensitive conditions (chronic and acute conditions) represents approximately a quarter of total all-cause hospitalizations in this age group.

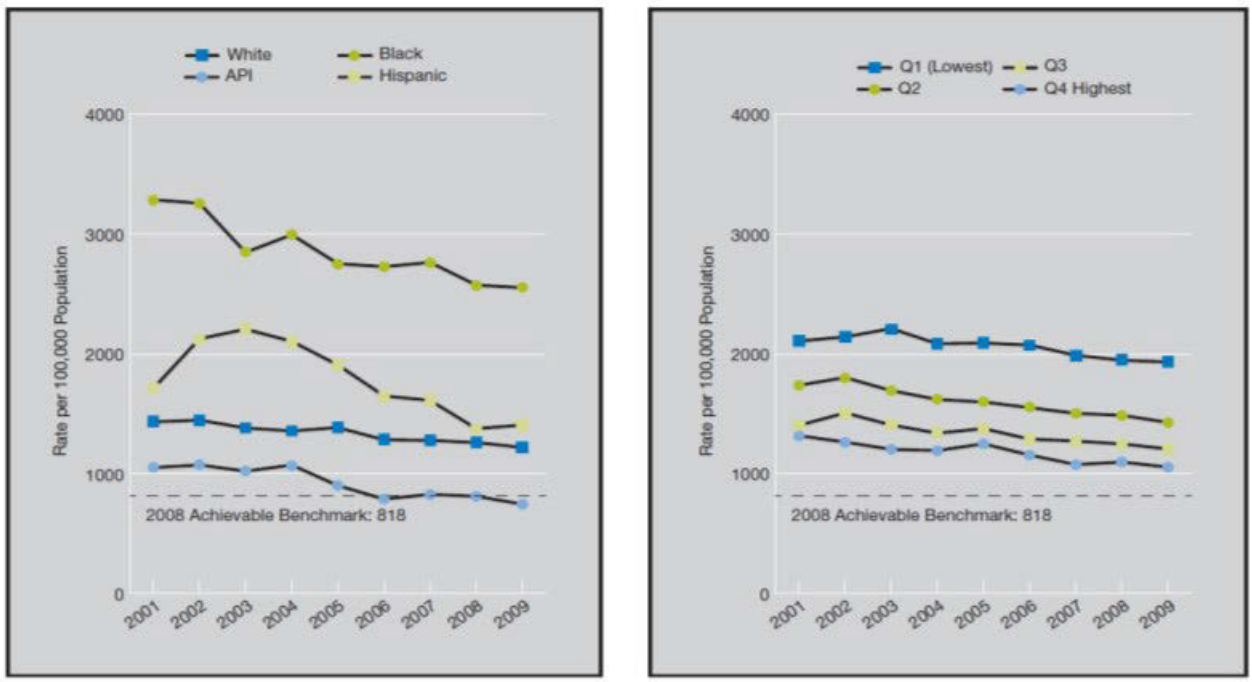
Results were similar for adults 75-84, although the rate of hospitalization for complications of chronic and acute conditions was higher with a total of 83.83 hospitalizations on average per 1,000 beneficiaries (42.43 hospitalizations for chronic conditions; 41.40 for acute conditions). The range in performance from the 10th to the 90th percentile was similar to the younger age group (39.13-122.25; spread of 83.12) and the proportion of total all-cause hospitalizations represented by hospitalization for these chronic and acute ambulatory care sensitive conditions was also 25%.

Results slightly differed for adults age 85 and older who had on average 141.65 hospitalizations for complications of chronic and acute conditions per 1,000 beneficiaries. In this population the rate of hospitalization for acute conditions (77.11) was much higher than the rate of hospitalization for chronic conditions (64.55). The range in performance across plans was much greater than in younger adults (72.99-213.38; spread of 140.39). Hospitalization for these conditions also represented a higher proportion of total all-cause hospitalizations, 30%.

1b.4. and 1b.5. Disparities

Several studies suggest ACSC admission rates are higher in the U.S. among low-income persons, African-Americans, Hispanics, Medicaid beneficiaries, and the uninsured (Gaskin and Hoffman 2000; O'Neil 2010; Chang 2009; Vest 2010; Johnson 2012). The figure below from the National Health Care Disparities report shows the rates of potentially avoidable hospitalization using the AHRQ PQI measures (overall rate for all PQI combined) for specific race/ethnic groups and area income quartile. The chart on the left shows the highest rate of PQI hospitalization for Black adults and the lowest rates for Asian/Pacific Islander Adults. The chart on the right shows the rates of hospitalization by quartile of area median income. Geographic areas with the lowest median income (Q1) had the highest rates of PQI hospitalizations and areas with the highest income (Q4) had the lowest rates of potentially avoidable hospitalization (AHRQ 2013). It is important to note that none of these studies reflect the rapidly changing landscape of coverage expansion set into motion by the Affordable Care Act.

Figure 7.2. Potentially avoidable hospitalization rates for adults, by race/ethnicity and area income, 2001-2009



Key: API = Asian or Pacific Islander

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project, State Inpatient Databases disparities analysis file, Nationwide Inpatient Sample, and AHRQ Quality Indicators, modified version 4.1, 2001-2009.

1c.—High Priority

1c.1. Demonstrated High-Priority Aspect of Health Care

- Affects large numbers
- A leading cause of morbidity/mortality
- High resource use
- Patient/social consequences of poor quality
- Severity of illness

1c.3. Epidemiologic or Resource Use Data

Prevalence of Hospitalization:

Approximately one quarter of all younger dual eligible beneficiaries and one third of all older beneficiaries are hospitalized at least once. Dual eligible beneficiaries are more likely than non-dual eligible beneficiaries to be admitted to inpatient hospitals (Dual Eligible Beneficiaries 28 percent; Non-Dual Eligible Beneficiaries 18 percent), skilled nursing facilities

(Dual Eligible Beneficiaries 11 percent; Non-Dual Eligible Beneficiaries 4 percent) and home health (Dual Eligible Beneficiaries 14 percent; Non-Dual Eligible Beneficiaries 9 percent), increasing the need for coordination of care across settings for this population (MedPAC/MACPAC 2015).

Research indicates that between 26 and 39 percent of hospitalizations among dual eligible beneficiaries could have been averted with better coordinated care (Walsh et al. 2012; Segal et al. 2014). A study published in 2014 examined potentially avoidable hospitalization rates by setting, state, medical condition and cost and found that potentially avoidable hospitalizations were much more likely for dual eligible beneficiaries who were in institutions, with 45 percent of institutionalized beneficiaries with potentially avoidable hospitalizations (Segal et al 2014). Furthermore, more than 90 percent of institutionized dual eligible beneficiaries were in nursing homes (Segal et al 2014). Five highly prevalent conditions (pneumonia, UTIs, dehydration, CHF and COPD/asthma) were associated with potentially avoidable hospitalizations (Segal et al 2014). Twenty-six percent of hospitalizations for dual eligible beneficiaries were potentially avoidable and 96 percent of costs related to potentially avoidable hospitalizations were paid for by Medicare (Segal et al 2014).

Prevalence of Chronic Conditions:

Medically, dual eligible beneficiaries are more likely than non-dual eligible Medicare and Medicaid beneficiaries to be frail, sick, cognitively impaired, and have multiple chronic conditions putting them at greater risk of hospitalization (MedPAC 2011). In 2010, 22 percent of dual eligible beneficiaries had one to two ADL limitations, while 33 percent had between three and six activity of daily living (ADL) limitations (MedPAC/MACPAC 2015). Additionally, 11 percent of dual eligible beneficiaries under age 65 and 24 percent of dual eligible beneficiaries 65 and older had some form of cognitive impairment (such as Alzheimer's disease, dementia), or an intellectual disability. The most common medical conditions among dual eligible beneficiaries are hypertension, diabetes, ischemic heart disease and heart failure, while the most common behavioral health conditions are depression, anxiety disorders, schizophrenia/other psychotic disorders and bipolar disorder (MedPAC/MACPAC 2015).

Costs Associated with Hospitalization:

In 2011 dual eligible beneficiaries accounted for 23.6 percent of Medicare spending on inpatient hospital stays (MedPAC 2015). In 2012 Medicare had an average cost per stay of $12,200 per patient, the highest average cost among all payers and Medicaid had an average cost of stay of $8,100 per patient (Moore et al 2014). A RTI study funded by CMS to look at hospitalization for potentially preventable conditions in dual eligible beneficiaries who were receiving LTSS in nursing facilities and home and community based services (HCBS) waiver

programs found that total hospitalization costs for potentially avoidable hospitalizations exceeded $3 billion (Walsh et al 2012).

A study looking at spending on nursing home hospitalizations using administrative files from New York state between 1999 and 2004 found that inflation-adjusted spending on nursing home hospitalizations increased 29 percent over five years and that aggregate spending totaled to approximately $972 million, 23 percent attributed to ACSCs. The study concluded that these data indicate a potential for cost savings associated with programs designed to reduce potentially avoidable hospitalizations from the nursing home setting (Grabowski et al 2007).

The costs associated with hospitalization for ACSC extend beyond the cost of the initial hospitalization. Deconditioning that occurs during the hospital stay may necessitate discharge to an intermediate level of care to support a transition back to home. In 2013, 42% of Medicare patients were discharged from the hospital into some form of post-acute care (home health, skilled nursing facility, inpatient rehabilitation, or long term care hospital) (MedPAC 2015). There are also costs associated with the resulting health impacts of hospitalization (decline in function, adverse drug events, infection) and subsequent readmissions.

1c.4. Citations

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1c.5. Patient-Reported Outcome Performance Measure (PRO-PM)

Not applicable.

Scientific Acceptability

1.—Data Sample Description

1.1. What Type of Data was Used for Testing?

Not applicable. Scientific acceptability will be determined during the measure testing phase.

1.2. Identify the Specific Dataset

Not applicable. Scientific acceptability will be determined during the measure testing phase.

1.3. What are the Dates of the Data Used in Testing?

Not applicable. Scientific acceptability will be determined during the measure testing phase.

1.4. What Levels of Analysis Were Tested?

Not applicable. Scientific acceptability will be determined during the measure testing phase.

1.5. How Many and Which Measured Entities Were Included in the Testing and Analysis?

Not applicable. Scientific acceptability will be determined during the measure testing phase.

1.6. How Many and Which Patients Were Included in the Testing and Analysis?

Not applicable. Scientific acceptability will be determined during the measure testing phase.

1.7. Sample Differences, if Applicable

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2a.2—Reliability Testing

2a2.1. Level of Reliability Testing

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2a2.2. Method of Reliability Testing

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2a2.3. Statistical Results from Reliability Testing

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2a2.4. Interpretation

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b2—Validity Testing

2b2.1. Level of Validity Testing

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b2.2. Method of Validity Testing

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b2.3. Statistical Results from Validity Testing

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b2.4. Interpretation

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b3—Exclusions Analysis

2b3.1. Method of Testing Exclusions

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b3.2. Statistical Results From Testing Exclusions

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b3.3. Interpretation

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4—Risk Adjustment or Stratification

2b4.1. Method of controlling for differences

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.2. Rationale why Risk Adjustment is not Needed

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.3. Conceptual, Clinical, and Statistical Methods

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.4. Statistical Results

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.5. Method Used to Develop the Statistical Model or Stratification Approach

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.6. Statistical Risk Model Discrimination Statistics (e.g., c-statistic, R2)

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.7. Statistical Risk Model Calibration Statistics (e.g., Hosmer-Lemeshow statistic)

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.8. Statistical Risk Model Calibration—Risk decile plots or calibration curves

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.9. Results of Risk stratification Analysis

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.10. Interpretation

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b4.11. Optional Additional Testing for Risk Adjustment

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b5—Identification of statistically significant and clinically meaningful differences

2b5.1. Method for determining

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b5.2. Statistical Results

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b5.3. Interpretation

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b6—Comparability of performance scores

2b6.1. Method of testing conducted to demonstrate comparability

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b6.2. Statistical Results

Not applicable. Scientific acceptability will be determined during the measure testing phase.

2b6.3. Interpretation

Not applicable. Scientific acceptability will be determined during the measure testing phase.

Feasibility

3a.1. How are the data elements needed to compute measure scores generated

Not applicable. Feasibility will be determined during the measure testing phase.

3b.1. Are the data elements needed for the measure as specified available electronically

Not applicable. Feasibility will be determined during the measure testing phase.

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment

Not applicable. Feasibility will be determined during the measure testing phase.

3c.1. Describe what you have learned or modified as a result of testing

Not applicable. Feasibility will be determined during the measure testing phase.

3c.2. Describe any fees, licensing, or other requirements

Not applicable. Feasibility will be determined during the measure testing phase.

Usability and Use

4.1—Current and Planned Use

Use	Planned	Current	For current use, provide Program Name and URL
a. Public Reporting		X	HCBS https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Long-Term-Services-and-Supports/Home-and-Community-Based-Services/Home-and-Community-Based-Services.html Medicaid Adult Core Set https://www.medicaid.gov/medicaid-chip-program-information/by-topics/quality-of-care/adult-health-care-quality-measures.html Medicaid Health Home Core Set https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Long-Term-
b. Public Health/Disease Surveillance			
c. Payment Program		X	GPRO Shared Savings Program https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Quality_Measures_Standards.html
d. Regulatory and Accreditation Programs			
e. Professional Certification or Recognition Program			
f. Quality Improvement with Benchmarking (external benchmarking to multiple organizations)		X	HEDIS http://www.ncqa.org/HEDISQualityMeasurement/WhatisHEDIS.aspx

Use	Planned	Current	For current use, provide Program Name and URL
g. Quality Improvement (Internal to the specific			
h. Not in use			
i. Use Unknown			

4a.1. Program, sponsor, purpose, geographic area, accountable entities, patients

GPRO SHARED SAVINGS PROGRAM: The Centers for Medicare & Medicaid Services (CMS) created the Medicare Shared Savings Program to help health care providers such as physicians and hospitals better coordinate care for Medicare patients through Accountable Care Organizations (ACOs). ACOs create incentives for health care providers to work together to treat patients across care settings (e.g. physician's offices, hospitals, long-term care facilities). Before an ACO can share in any savings, it must demonstrate that it met the quality performance standard for that year. CMS will measure quality of care using 33 nationally recognized quality measures in four key domains. Two measures of hospitalization for ACSC are reported under this program:

- ACO #9 – Prevention Quality Indicator (PQI): Ambulatory Sensitive Conditions Admissions for Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults
- ACO #10 – Prevention Quality Indicator (PQI): Ambulatory Sensitive Conditions Admissions for Heart Failure (HF)

Three additional related measures of unplanned hospitalizations are also reported under this program:

- ACO #36 – Risk-Standardized Acute Admission Rates for Patients With Diabetes
- ACO #37 – Risk-Standardized Acute Admission Rates for Patients With Heart Failure
- ACO#38 – Risk-Standardized Acute Admission Rates for Patients With Multiple Chronic Conditions

HCBS STATE LEVEL REPORTING: The Centers for Medicare & Medicaid Services (CMS) created the Home and Community Based Services (HCBS) program to provide opportunities for Medicaid enrollees to receive services in their own home or community. These programs serve a variety of targeted populations groups, such as people with mental illnesses, intellectual or developmental disabilities and/or physical disabilities. HCBS reports collect data on county and statewide performance key operational and performance measures.

Two measures of hosptializition for ACSC have been publically reported under a contract with CMS:

- Home and Community Based Services (HCBS) Ambulatory Care Sensitive Conditions (ACSC) Chronic and Acute Composites

HEDIS: The Healthcare Effectiveness Data and Information Set (HEDIS) is a set of performance measures used in managed care (Medicare, Medicaid and commercial payers) and is developed and maintained by the National Committee for Quality Assurance (NCQA). HEDIS was designed to allow consumers to compare health plan performance to other plans and to national or regional benchmarks. An incentive for many health plans to collect HEDIS data is a Centers for Medicare and Medicaid Services (CMS) requirement that health maintenance organizations (HMOs) submit Medicare HEDIS data in order to provide HMO services for Medicare enrollees under a program called Medicare Advantage. One measure of hosptializition for ACSC is collected in HEDIS but is not yet publically reported:

- Hospitalizaiton for Potentially Preventable Complications

MEDICAID ADULT CORE SET: These are a core set of health quality measures for Medicaid-enrolled adults. The Medicaid Adult Core Set was identified by the Centers for Medicare & Medicaid (CMS) in partnership with the Agency for HealthCare Research and Quality (AHRQ). The data collected from these measures will help CMS to better understand the quality of health care that adults enrolled in Medicaid receive nationally. Beginning in January 2014 and every three years thereafter, the Secretary is required to report to Congress on the quality of care received by adults enrolled in Medicaid. Additionally, beginning in September 2014, state data on the adult quality measures will become part of the Secretary's annual report on the quality of care for adults enrolled in Medicaid.

- PQI 01 Diabetes Short-Term Complications Admission Rate
- PQI 05 Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate
- PQI 08 Heart Failure Admission Rate
- PQI 15 Asthma in Younger Adults Admission Rate

MEDICAID HEALTH HOME CORE SET: These are a core set of health quality measures for Medicaid-enrolled adults or children enrolled in a state Health Home program. The Medicaid Health Home Core Set was identified by the Centers for Medicare & Medicaid (CMS) and was aligned closely with the Department of Health and Human Services' (HHS) National Strategy for Quality Improvement in Health Care, as well as other quality initiatives. The data collected from these measures will help CMS to better understand the quality of health care

that adults and children enrolled in Medicaid receive nationally. One measure of hosptializition for ACSC is collected in this voluntary reporting program:

- Prevention Quality Indicator (PQI) 92: Chronic Conditions Composite

4a.2. If not publicly reported or used for accountability, reasons

Not applicable.

4a.3. If not, provide a credible plan for implementation

Not applicable.

4b.1. Progress on improvement

4b.2. If no improvement was demonstrated, what are the reasons

Related and Competing Measures

5—Relation to Other NQF-Endorsed Measures

5.1a.

- Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators (PQIs):

  PQI #01 Diabetes Short Term Complications Admission Rate (NQF 272)
  PQI #02 Perforated Appendix Admission Rate (NQF 273)
  PQI #03 Diabetes Long Term Complications Admission Rate (NQF 274)
  PQI #05 Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate (NQF 275)
  PQI #07 Hypertension Admission Rate (NQF 276)
  PQI #08 Congestive Heart Failure (CHF) Admission Rate (NQF 277)
  PQI #09 Low Birth Weight Rate (NQF 278)
  PQI #10 Dehydration Admission Rate (NQF 280)
  PQI #11 Bacterial Pneumonia Admission Rate (NQF 279)
  PQI #12 Urinary Tract Infection Admission Rate (NQF 281)
  PQI #13 Angina Without Procedure Admission Rate (NQF 282)
  PQI #14 Uncontrolled Diabetes Admission Rate (NQF 638)
  PQI #15 Asthma in Younger Adults Admission Rate (NQF 283)
  PQI #16 Rate of Lower Extremity Amputation Among Patients With Diabetes (NQF 285)

- Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year (NQF 709)

5.1b. If the measures are not NQF-endorsed, indicate the measure title

- Prevention Quality Indicator (PQI) 92: Chronic Conditions Composite

- Prevention Quality Indicator (PQI) 91: Acute Conditions Composite
- Home and Community Based Services (HCBS) Ambulatory Care Sensitive Conditions (ACSC) Chronic and Acute Composites
- Hospitalization for Potentially Preventable Complications
- ACO #36 – Risk-Standardized Acute Admission Rates for Patients With Diabetes
- ACO #37 – Risk-Standardized Acute Admission Rates for Patients With Heart Failure
- ACO#38 – Risk-Standardized Acute Admission Rates for Patients With Multiple Chronic Conditions

5a—Harmonization

5a.1. Are the measure specifications completely harmonized

No.

5a.2. If not completely harmonized, identify the differences rationale, and impact

The table below outlines the major difference between the measures described above. Both the HEDIS Hospitalizaiton for Potentially Preventable Complications and HCBS ACSC measures were built from the AHRQ PQI and therefore are closely aligned with the underlying measure. The differences are largely due to the specific population the measures were specified for and can be harmonized through the measure development process. Measure #0709, Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year, is focused on younger adult population in commercial insurance and looks exclusively at chronic conditions. The measure looks hospitalizaitons, ED vistis or professional services that are related to underlying complications of these chronic conditions. While this measure is broader in it's focus it is less widely used and the measure developers report no current use of the measure in any public reporting or quality improvement programs. Finally, measure ACO #39 Unplanned Hospitalization for Adults with MCC is a much broader measure that looks at unplanned hospitalization for any condition among those with diabetes, heart failure or multipcle chronic conditions (MCC). This measure does not look specifically at preventable or potentially avoidable hospitalizaitons.

	AHRQ PQI (Acute and Chronic Composites)	HEDIS Hospitalization for Potentially Preventable Complications	HCBS ACSC	NQF #709	ACO #39 Unplanned Hospitalization for Adults with MCC (ACO 38) /Diabetes (ACO 36)/ Heart Failure (ACO 37)
Age Range	18+	67+	18+	18-65	65+
Denominator	All adults	All Medicare Advantage beneficiaries	All adult HCBS users	Adult who have one of six chronic conditions: Diabetes Mellitus (DM), Congestive Heart Failure (CHF), Coronary Artery Disease (CAD), Hypertension (HTN), Chronic Obstructive Pulmonary Disease (COPD) or Asthma.	Adults with: • Diabetes • Heart Failure • 2 or more chronic conditions

	AHRQ PQI (Acute and Chronic Composites)	HEDIS Hospitalization for Potentially Preventable Complications	HCBS ACSC	NQF #709	ACO #39 Unplanned Hospitalization for Adults with MCC (ACO 38) /Diabetes (ACO 36)/ Heart Failure (ACO 37)
Numerator: Chronic conditions	Hospitalization for Diabetes, CHF, COPD/Asthma, Hypertension, Amputation, *Angina*	Hospitalization for Diabetes, CHF, COPD/Asthma, Hypertension, Amputation	Hospitalization for Diabetes, CHF, COPD/Asthma, Hypertension, Amputation, *Angina*	Potentially avoidable complication of one of the six conditions Diabetes, Congestive Heart Failure, Coronary Artery Disease, Hypertension, Chronic Obstructive Pulmonary Disease or Asthma defined as: Hospitalization/ED visit or professional services for exacerbation of the anchor condition, comorbid condition, or a patient safety failure,	Unplanned admissions for any condition excluding those where the principal discharge diagnosis is major organ transplant, obstetrical delivery, or maintenance chemotherapy; admissions with a potentially planned procedure (for example, total hip replacement or cholecystectomy) AND a non-acute principal discharge diagnosis code
Numerator: Acute conditions	Hospitalization for Pneumonia, UTI, Dehydration	Hospitalization for Pneumonia, UTI, Cellulitis, Pressure Ulcers	Hospitalization for Pneumonia, UTI, Dehydration	N/A	N/A

	AHRQ PQI (Acute and Chronic Composites)	HEDIS Hospitalization for Potentially Preventable Complications	HCBS ACSC	NQF #709	ACO #39 Unplanned Hospitalization for Adults with MCC (ACO 38) /Diabetes (ACO 36)/ Heart Failure (ACO 37)
Exclusions	Transfers; Admissions from Skilled Nursing Facilities	Transfers; Admissions from Skilled Nursing Facilities Individuals residing in nursing facilities	Transfers; Admissions from Skilled Nursing Facilities	Cancer, ESRD, transplants, pregnancy, HIV, suicide, cardiac arrest, shock, coma, brain damage,	N/A
Risk Adjustment	Age and gender	Age, gender, co-morbid conditions	Age, gender, co-morbid conditions	Age, gender, medications, comorbidities, and procedures performed	Age, gender, comorbid-conditions
Level of Accountability	State	Health Plan (Medicare)	State (HCBS population)	Group practice, Health Plan (Commercial), state	ACO
Reported Current Use	Medicaid Home Health Core Set CMS Shared Savings GPRO	HEDIS Medicare Advantage reporting	NA	N/A	Medicare Shared Savings

5b—Competing measures

5b.1 Describe why this measure is superior to competing measures

Additional Information

Co.1.—Measure Steward Point of Contact

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Ad.1. Workgroup/Expert Panel Involved in Measure Development

Ad.2. Year the Measure Was First Released

Ad.3. Month and Year of Most Recent Revision

Ad.4. What is your frequency for review/update of this measure?

Ad.5. When is your next scheduled review/update for this measure?

Ad.6. Copyright Statement

Ad.7. Disclaimers

Ad.8. Additional Information/Comments