List of Measures under Consideration for December 1, 2017

TABLE OF CONTENTS

OVERVIEW

Background

The Centers for Medicare & Medicaid Services (CMS) is issuing this List of Measures under Consideration (MUC) to comply with Section 1890A(a)(2) of the Social Security Act (the Act), which requires the Secretary of the Department of Health and Human Services (DHHS) to make publicly available a list of certain categories of quality and efficiency measures it is considering for adoption through rulemaking for the Medicare program. Among the measures, the list includes measures we are considering that were suggested to us by the public. When organizations, such as physician specialty societies, request that CMS consider measures, CMS evaluates the submission for inclusion on the MUC List so that the Measure Applications Partnership (MAP), the multi-stakeholder groups convened as required under 1890A of the Act, can provide their input on potential measures and ensure alignment where appropriate. Inclusion of a measure on this list does not require CMS to adopt the measure for the identified program. Therefore, this list is likely larger than what will ultimately be adopted by CMS for optional or mandatory reporting programs in Medicare.

CMS will continue its goal of aligning measures across programs. Measure alignment includes looking first to existing program measures for use in new programs. Further, CMS programs must balance competing goals of establishing parsimonious measure sets, while including sufficient measures to facilitate multi-specialty provider and supplier participation.

Statutory Requirement

Section 3014(b) of the Patient Protection and Affordable Care Act (ACA) (P.L. 111-148, enacted on March 23, 2010) added Section 1890A to the Social Security Act, which requires that DHHS establish a federal pre-rulemaking process for the selection of certain categories of quality and efficiency measures for use by DHHS. These measures are described in section 1890(b)(7)(B) of the Act. One of the steps in the pre-rulemaking process requires that DHHS make publicly available, not later than December 1 annually, a list of quality and efficiency measures DHHS is considering adopting, through the federal rulemaking process, for use in certain Medicare quality programs.

The pre-rulemaking process includes the following additional steps:

1. Providing the opportunity for multi-stakeholder groups to provide input not later than February 1 annually to DHHS on the selection of quality and efficiency measures;
2. Considering the multi-stakeholder groups' input in selecting quality and efficiency measures;
3. Publishing in the Federal Register the rationale for the use of any quality and efficiency measures that are not endorsed by the entity with a contract under Section 1890 of the Act, which is currently the National Quality Forum (NQF)[1]; and

[1] The rationale for adopting measures not endorsed by the consensus-based entity will be published in rulemaking where such measures are proposed and finalized.

4. Assessing the quality and efficiency impact of the use of endorsed measures and making that assessment available to the public at least every three years. (The 2012 and 2015 editions of that report and related documents are available at the website of the CMS National Impact Assessment.)

Fulfilling DHHS's Requirement to Make Its Measures under Consideration Publicly Available

The attached MUC List, which is compiled by CMS, will be posted on the NQF website. This posting will satisfy an important requirement of the pre-rulemaking process by making public the quality and efficiency measures described in section 1890(b)(7)(B) of the Act that DHHS is considering for use under Medicare. Additionally, the CMS website will indicate that the MUC list is being posted on the NQF website.

Included Measures

This MUC List identifies the quality and efficiency measures under consideration by the Secretary of DHHS for use in certain Medicare quality programs. Measures that appear on this list but are not selected for use under the Medicare program for the current rulemaking cycle will remain under consideration for future rulemaking cycles. They remain under consideration only for purposes of the particular program or other use for which CMS was considering them when they were placed on the MUC List. These measures can be selected for those previously considered purposes and programs/uses in future rulemaking cycles. This MUC List as well as prior year MUC Lists and Measure Applications Partnership (MAP) Reports can be found at: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/Pre-Rule-Making.html.

Applicable Programs

The following programs that now use or will use quality and efficiency measures have been identified for inclusion on this list.

1. Ambulatory Surgical Center Quality Reporting Program (ASCQR)
2. End-Stage Renal Disease Quality Incentive Program (ESRD QIP)
3. Home Health Quality Reporting Program (HH QRP)
4. Hospice Quality Reporting Program (HQRP)
5. Hospital-Acquired Condition Reduction Program (HACRP)
6. Hospital Inpatient Quality Reporting Program (HIQR)
7. Hospital Outpatient Quality Reporting Program (HOQR)
8. Hospital Readmissions Reduction Program (HRRP)
9. Hospital Value-Based Purchasing Program (HVBP)
10. Inpatient Psychiatric Facility Quality Reporting Program (IPFQR)
11. Inpatient Rehabilitation Facility Quality Reporting Program (IRF QRP)
12. Long-Term Care Hospital Quality Reporting Program (LTCH QRP)
13. Medicare and Medicaid EHR Incentive Program for Eligible Hospitals (EHs) and Critical Access Hospitals (CAHs)
14. Medicare Shared Savings Program (MSSP)
15. Merit-based Incentive Payment System (MIPS)

16. Prospective Payment System (PPS)-Exempt Cancer Hospital Quality Reporting Program (PCHQR)
17. Skilled Nursing Facility Quality Reporting Program (SNF QRP)
18. Skilled Nursing Facility Value-Based Purchasing Program (SNF VBP)

Measures List Highlights

By publishing this list, CMS will make publicly available and seek the multi-stakeholder groups' input on 32 measures under consideration for use in the Medicare program. We note several important points to consider and highlight:

- Of the applicable programs covered by the pre-rulemaking process in section 1890A of the Social Security Act, all programs contributed measures to this list in 2017 except the Home Health Quality Reporting Program, the Hospice Quality Reporting Program, the Hospital-Acquired Condition Reduction Program, the Hospital Readmissions Reduction Program, the Hospital Value-Based Purchasing Program, the Inpatient Psychiatric Facility Quality Reporting Program, the Inpatient Rehabilitation Facility Quality Reporting Program, the Long-Term Care Hospital Quality Reporting Program, and the Skilled Nursing Facility Value-Based Purchasing Program.
- The 2017 MUC List includes measures that CMS is currently considering for the Medicare program. Inclusion of a measure on this list does not require CMS to adopt the measure for the identified program.
- If CMS chooses not to adopt a measure under this list for the current rulemaking cycle, the measure remains under consideration by the Secretary and may be proposed and adopted in subsequent rulemaking cycles without being published again as part of a future MUC list.

- Some measures, if adopted, will become part of a mandatory reporting program. A number of other measures, if adopted, will become part of an optional reporting program. Under optional programs, providers or suppliers may choose whether to participate.
- CMS will continue aligning measures across programs whenever possible, including looking first to measures that are currently in existing programs. CMS's goal is to fill critical gaps in measurement that align with and support the National Quality Strategy.
- Measures contained on this list had to fill a quality and efficiency measurement need and were assessed for alignment across CMS programs when applicable.
- In an effort to provide a more meaningful List of Measures under Consideration, CMS included only measures that contain adequate specifications.
- The NQF already endorses many of the measures contained in this list, with a number of other measures pending endorsement.
- CMS sought to be inclusive with respect to new measures on the MUC List. For example, three meetings were convened to obtain input and consensus on the MUC List from across the Department of Health and Human Services.

- The following components of the Department of Health and Human Services contributed to and supported CMS in publishing a majority of measures on this list:
    1. Office of the Assistant Secretary for Health
    2. Office of the National Coordinator for Health Information Technology
    3. National Institutes of Health
    4. Agency for Healthcare Research and Quality
    5. Health Resources and Services Administration
    6. Centers for Disease Control and Prevention
    7. Substance Abuse and Mental Health Services Administration
    8. Office of the Assistant Secretary for Planning and Evaluation
    9. Indian Health Service

How to Navigate the Document

Headings in this document have been bookmarked to facilitate navigation. The remainder of this document consists of four sections:

- List of Measures under Consideration (page 12)
    - This table contains the complete list of measures under consideration with basic information about each measure and the programs for which the measure is being considered.

- Appendix A: Measure Specifications (page 23)
    - This table details the numerator, denominator, and exclusions for each measure.
- Appendix B: Measure Rationales (page 54)
    - This table describes the rationale for the measure, the peer-reviewed evidence justifying the measure, and/or the impact the measure is anticipated to achieve.
- Appendix C: Measures Listed by Program (page 82)
    - This series of tables lists the individual programs accepting each measure for consideration, and the priorities (or domains) associated with each measure as submitted. The same measure may be under consideration for more than one CMS program, and may have more than one priority (or domain).

Each table is preceded by a legend defining the contents of the columns. For more information, please contact Michelle Geppi at Michelle.Geppi@cms.hhs.gov.

NUMBER OF MEASURES UNDER CONSIDERATION BY PROGRAM[2]

CMS Program	Number of Measures under Consideration
Ambulatory Surgical Center Quality Reporting Program	1
End-Stage Renal Disease Quality Incentive Program	3
Home Health Quality Reporting Program	0
Hospice Quality Reporting Program	0
Hospital-Acquired Condition Reduction Program	0
Hospital Inpatient Quality Reporting Program	3
Hospital Outpatient Quality Reporting Program	1
Hospital Readmissions Reduction Program	0
Hospital Value-Based Purchasing Program	0
Inpatient Psychiatric Facility Quality Reporting Program	0
Inpatient Rehabilitation Facility Quality Reporting Program	0
Long-Term Care Hospital Quality Reporting Program	0
Medicaid and Medicare EHR Incentive Program for Eligible Hospitals and Critical Access Hospitals	2
Medicare Shared Savings Program	3
Merit-based Incentive Payment System	22
Prospective Payment System-Exempt Cancer Hospital Quality Reporting Program	1
Skilled Nursing Facility Quality Reporting Program	1
Skilled Nursing Facility Value-Based Purchasing Program	0

[2] A single measure may be under consideration for more than one program.

LIST OF MEASURES UNDER CONSIDERATION

Legend for List of Measures under Consideration

MUC ID: Gives users an identifier to refer to a unique measure. The "MUC17-" prefix is intended to aid future researchers in distinguishing among measures considered in different years.

Measure Title: The title of the measure.

Description: Gives users more detailed information about the measure, such as medical conditions to be measured, particular outcomes or results that could or should/should not result from the care and patient populations.

Measure Type: Refers to the domain of quality that a measure assesses:

- Composite: A combination of two or more component measures, each of which individually reflects quality of care, into a single quality measure with a single score.
- Cost/Resource Use: A count of the frequency of units of defined health system services or resources; some may further apply a dollar amount (e.g., allowable charges, paid amounts, or standardized prices) to each unit of resource use.
- Efficiency: Refers to a relationship between a specific level of quality of health care provided and the resources used to provide that care.

- Intermediate Outcome: Refers to a change produced by a health care intervention that leads to a longer-term outcome (e.g., a reduction in blood pressure is an intermediate outcome that leads to a reduction in the risk of longer-term outcomes such as cardiac infarction or stroke).
- Outcome: The health status of a patient (or change in health status) resulting from healthcare, which can be desirable or adverse.
- Patient Reported Outcome: Refers to a measure of a patient's feelings or what they are able to do as they are dealing with diseases or conditions. These types of measures may include Patient Reported Outcome Measures (PROMs) and Patient Reported Outcome-Based Performance Measures (PRO-PMs).
- Process: A healthcare service provided to, or on behalf of, a patient. This may include, but is not limited to, measures that address adherence to recommendations for clinical practice based on evidence or consensus.
- Structure: Features of a healthcare organization or clinician relevant to the capacity to provide healthcare. This may include, but is not limited to, measures that address health IT infrastructure, provider capacity, systems, and other healthcare infrastructure supports.

Measure Steward: Refers to the party responsible for updating and maintaining a measure.

CMS Program(s): Refers to the applicable Medicare program(s) that may adopt the measure through rulemaking in the future.

Measures under Consideration

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
MUC17-139	Continuity of Pharmacotherapy for Opioid Use Disorder	Percentage of adults with pharmacotherapy for opioid use disorder (OUD) who have at least 180 days of continuous treatment	Process	RAND Corporation	MIPS
MUC17-168	Average change in functional status following lumbar spine fusion surgery	For patients age 18 and older undergoing lumbar spine fusion surgery, the average change from pre-operative functional status to one year (nine to fifteen months) post-operative functional status using the Oswestry Disability Index (ODI version 2.1a) patient reported outcome tool.	Patient Reported Outcome	MN Community Measurement	MIPS
MUC17-169	Average change in functional status following total knee replacement surgery	For patients age 18 and older undergoing total knee replacement surgery, the average change from pre-operative functional status to one year (nine to fifteen months) post-operative functional status using the Oxford Knee Score (OKS) patient reported outcome tool.	Patient Reported Outcome	MN Community Measurement	MIPS
MUC17-170	Average change in functional status following lumbar discectomy laminotomy surgery	For patients age 18 and older undergoing lumbar discectomy laminotomy surgery, the average change from pre-operative functional status to three months (6 to 20 weeks) post-operative functional status using the Oswestry Disability Index (ODI version 2.1a) patient reported outcome tool.	Patient Reported Outcome	MN Community Measurement	MIPS
MUC17-173	Appropriate Use of DXA Scans in Women Under 65 Years Who Do Not Meet the Risk Factor Profile for Osteoporotic Fracture	Percentage of female patients aged 50 to 64 without select risk factors for osteoporotic fracture who received an order for a dual-energy x-ray absorptiometry (DXA) scan during the measurement period.	Process/Overuse	Centers for Medicare & Medicaid Services	MIPS

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
MUC17-176	Medication Reconciliation for Patients Receiving Care at Dialysis Facilities	Percentage of patient-months for which medication reconciliation* was performed and documented by an eligible professional.** * "Medication reconciliation" is defined as the process of creating the most accurate list of all home medications that the patient is taking, including name, indication, dosage, frequency, and route, by comparing the most recent medication list in the dialysis medical record to one or more external list(s) of medications obtained from a patient or caregiver (including patient-/caregiver-provided "brown bag" information), pharmacotherapy information network (e.g., Surescripts), hospital, or other provider. ** For the purposes of medication reconciliation, "eligible professional" is defined as: physician, RN, ARNP, PA, pharmacist, or pharmacy technician.	Process/Care Coordination	KCQA	ESRD QIP
MUC17-177	Average change in leg pain following lumbar spine fusion surgery	For patients age 18 and older undergoing lumbar spine fusion surgery, the average change from pre-operative leg pain to one year (nine to fifteen months) post-operative leg pain using the Visual Analog Scale (VAS) patient reported outcome tool.	Patient Reported Outcome	MN Community Measurement	MIPS
MUC17-178	30-Day Unplanned Readmissions for Cancer Patients	30-Day Unplanned Readmissions for Cancer Patients measure is a cancer-specific measure. It provides the rate at which all adult cancer patients covered as Fee-for-Service Medicare beneficiaries have an unplanned readmission within 30 days of discharge from an acute care hospital. The unplanned readmission is defined as a subsequent inpatient admission to a short-term acute care hospital, which occurs within 30 days of the discharge date of an eligible index admission and has an admission type of "emergency" or "urgent."	Outcome	Seattle Cancer Care Alliance	PCHQR

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
MUC17-181	Optimal Diabetes Care	The percentage of patients 18-75 years of age who had a diagnosis of type 1 or type 2 diabetes and whose diabetes was optimally managed during the measurement period as defined by achieving ALL of the following: - HbA1c less than 8.0 mg/dL - Blood Pressure less than 140/90 mmHg - On a statin medication, unless allowed contraindications or exceptions are present - Non-tobacco user - Patient with ischemic vascular disease is on daily aspirin or anti-platelets, unless allowed contraindications or exceptions are present	Composite	MN Community Measurement	MIPS; MSSP
MUC17-194	Optimal Vascular Care	The percentage of patients 18-75 years of age who had a diagnosis of ischemic vascular disease (IVD) and whose IVD was optimally managed during the measurement period as defined by achieving ALL of the following: - Blood Pressure less than 140/90 mmHg - On a statin medication, unless allowed contraindications or exceptions are present - Non-tobacco user - On daily aspirin or anti-platelets, unless allowed contraindications or exceptions are present The number of patients in the denominator whose IVD was optimally managed during the measurement period as defined by achieving ALL of the following: - The most recent Blood Pressure in the measurement period has a systolic value of less than 140 mmHg AND a diastolic value of less than 90 mmHg - On a statin medication, unless allowed contraindications or exceptions are present - Patient is not a tobacco user - On daily aspirin or anti-platelets, unless	Composite	MN Community Measurement	MIPS

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
		allowed contraindications or exceptions are present			
MUC17-195	Hospital-Wide All-Cause Risk Standardized Mortality Measure	This measure estimates hospital-level, risk-standardized mortality rate (RSMR) for Medicare fee-for-service (FFS) patients who are between the ages of 65 and 94. Death is defined as death from any cause within 30 days after the index admission date. This is a claims-based version of the Hybrid Hospital-Wide All-Cause Risk Standardized Mortality Measure.	Outcome	Centers for Medicare & Medicaid Services	HIQR
MUC17-196	Hybrid Hospital-Wide All-Cause Risk Standardized Mortality Measure	This measure estimates hospital-level, risk-standardized mortality rate (RSMR) for Medicare fee-for-service (FFS) patients who are between the ages of 65 and 94. Death is defined as death from any cause within 30 days after the index admission date. The measure is referred to as a hybrid because it will use Medicare fee-for-service (FFS) administrative claims to derive the cohort and outcome, and claims and clinical electronic health record (EHR) data for risk adjustment.	Outcome	Centers for Medicare & Medicaid Services	HIQR; EHR Incentive/EH/CAH
MUC17-210	Hospital Harm Performance Measure: Opioid Related Adverse Respiratory Events	This measure will assess opioid related adverse respiratory events (ORARE) in the hospital setting. The goal for this measure is to assess the rate at which naloxone is given for opioid related adverse respiratory events that occur in the hospital setting, using a valid method that reliably allows comparison across hospitals.	Outcome	Centers for Medicare & Medicaid Services	HIQR; EHR Incentive/EH/CAH
MUC17-215	Diabetes A1c Control (< 8.0)	The percentage of patients 18-75 years of age who had a diagnosis of type 1 or type 2 diabetes and whose most recent HbA1c during the measurement period was less than 8.0 mg/dL.	Intermediate Outcome	MN Community Measurement	MIPS; MSSP
MUC17-223	Lumbar Spine Imaging for Low Back Pain	This measure calculates the percentage of CT (computed tomography) or MRI (magnetic resonance imaging) studies of the lumbar spine with a diagnosis of low back pain on the imaging claim and for which the patient did not have	Process/Overuse	Centers for Medicare & Medicaid Services	HOQR

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
		prior claims-based evidence of antecedent conservative therapy. Antecedent conservative therapy may include: 1. Claim(s) for physical therapy in the 60 days preceding the lumbar spine CT or MRI. 2. Claim(s) for chiropractic evaluation and manipulative treatment in the 60 days preceding the lumbar spine CT or MRI. 3. Claim(s) for evaluation and management in the period > 28 days and < 60 days preceding the lumbar spine CT or MRI.			
MUC17-233	Hospital Visits following General Surgery Ambulatory Surgical Center Procedures	The measure assesses ASC general surgery procedure quality using the outcome of hospital visits -- including emergency department (ED) visits, observation stays, and unplanned inpatient admissions -- within 7 days of the procedure performed at an ASC.	Outcome	Centers for Medicare & Medicaid Services	ASCQR
MUC17-234	Ischemic Vascular Disease Use of Aspirin or Anti-platelet Medication	The percentage of patients 18-75 years of age who had a diagnosis of ischemic vascular disease (IVD) and were on daily aspirin or anti-platelet medication, unless allowed contraindications or exceptions are present.	Process	MN Community Measurement	MIPS; MSSP
MUC17-235	Routine Cataract Removal with Intraocular Lens (IOL) Implantation	The Routine Cataract Removal with IOL Implantation Cost Measure applies to clinicians who perform routine cataract removal with IOL implantation procedures for Medicare beneficiaries. The cost measure is calculated by determining the risk-adjusted episode cost, averaged across all of a clinician's episodes during the measurement period. The cost of each episode is the sum of the cost to Medicare for services performed by the attributed clinician and other healthcare providers during the episode window (from 60 days prior to the trigger date to 90 days after the trigger date).	Cost/Resource Use	Centers for Medicare & Medicaid Services	MIPS

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
MUC17-239	International Prostate Symptom Score (IPSS) or American Urological Association-Symptom Index (AUA-SI) change 6-12 months after diagnosis of Benign Prostatic Hyperplasia	Percentage of patients with an office visit within the measurement period and with a new diagnosis of clinically significant Benign Prostatic Hyperplasia who have International Prostate Symptoms Score (IPSS) or American Urological Association (AUA) Symptom Index (SI) documented at time of diagnosis and again 6 to 12 months later with an improvement of 3 points.	Outcome	Large Urology Group Practice Association In collaboration with Oregon Urology Institute	MIPS
MUC17-241	Percentage of Prevalent Patients Waitlisted (PPPW)	This measure tracks the percentage of patients at each dialysis facility who were on the kidney or kidney-pancreas transplant waiting list. Results are averaged across patients prevalent on the last day of each month during the reporting year.	Process	Centers for Medicare & Medicaid Services	ESRD QIP
MUC17-245	Standardized First Kidney Transplant Waitlist Ratio for Incident Dialysis Patients (SWR)	This measure tracks the number of incident patients at the dialysis facility under the age of 75 listed on the kidney or kidney-pancreas transplant waitlist or who received living donor transplants within the first year of initiating dialysis.	Process	Centers for Medicare & Medicaid Services	ESRD QIP
MUC17-256	Screening/ Surveillance Colonoscopy	The Screening/Surveillance Colonoscopy cost measure applies to clinicians who perform screening/surveillance colonoscopy procedures for Medicare beneficiaries. The cost measure is calculated by determining the risk-adjusted episode cost, averaged across all of a clinician's episodes during the measurement period. The cost of each episode is the sum of the cost to Medicare for services performed by the attributed clinician and other healthcare providers during the episode window (from the trigger date to 14 days after the trigger date).	Cost/Resource Use	Centers for Medicare & Medicaid Services	MIPS

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
MUC17-258	CoreQ: Short Stay Discharge Measure	The measure calculates the percentage of individuals discharged in a six-month time period from a SNF, within 100 days of admission, who are satisfied. This patient reported outcome measure is based on the CoreQ: Short Stay Discharge questionnaire that utilizes four items. The following are the four items: 1. In recommending this facility to your friends and family, how would you rate it overall? (Poor, Average, Good, Very Good, or Excellent) 2. Overall, how would you rate the staff? (Poor, Average, Good, Very Good, or Excellent) 3. How would you rate the care you receive? (Poor, Average, Good, Very Good, or Excellent) 4. How would you rate how well your discharge needs were met? (Poor, Average, Good, Very Good, or Excellent)	Patient Reported Outcome	American Health Care Association	SNF QRP
MUC17-261	Knee Arthroplasty	The Knee Arthroplasty cost measure applies to clinicians who perform elective total and partial knee arthroplasties for Medicare beneficiaries. The cost measure is calculated by determining the risk-adjusted episode cost, averaged across all of a clinician's episodes during the measurement period. The cost of each episode is the sum of the cost to Medicare for services performed by the attributed clinician and other healthcare providers during the episode window (from 30 days prior to the trigger date to 90 days after the trigger date).	Cost/Resource Use	Centers for Medicare & Medicaid Services	MIPS

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
MUC17-262	ST-Elevation Myocardial Infarction (STEMI) with Percutaneous Coronary Intervention (PCI)	The STEMI with PCI cost measure applies to clinicians who manage the inpatient care of Medicare beneficiaries hospitalized for a STEMI requiring PCI. The cost measure is calculated by determining the risk-adjusted episode cost, averaged across all of a clinician's episodes during the measurement period. The cost of each episode is the sum of the cost to Medicare for services performed by the attributed clinician and other healthcare providers during the episode window (from the trigger date to 30 days after the trigger date).	Cost/Resource Use	Centers for Medicare & Medicaid Services	MIPS
MUC17-263	Revascularization for Lower Extremity Chronic Critical Limb Ischemia	The Revascularization for Lower Extremity Chronic Critical Limb Ischemia cost measure applies to clinicians who perform elective revascularization for lower extremity chronic critical limb ischemia for Medicare beneficiaries. The cost measure is calculated by determining the risk-adjusted episode cost, averaged across all of a clinician's episodes during the measurement period. The cost of each episode is the sum of the cost to Medicare for services performed by the attributed clinician and other healthcare providers during the episode window (from 30 days prior to the trigger date to 90 days after the trigger date).	Cost/Resource Use	Centers for Medicare & Medicaid Services	MIPS
MUC17-310	Zoster (Shingles) Vaccination	The percentage of patients 60 years of age and older who have a Varicella Zoster (shingles) vaccination	Process	PPRNet	MIPS
MUC17-345	Patient reported and clinical outcomes following ilio-femoral venous stenting	Composite outcome assessment documenting an improvement in the clinical evaluation of patients using the venous clinical severity score (VCSS) and on a disease-specific PRO survey instrument following ilio-femoral venous stenting	Composite Outcome	Society of Interventional Radiology;	MIPS

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
MUC17-359	Elective Outpatient Percutaneous Coronary Intervention (PCI)	The Elective Outpatient PCI cost measure applies to clinicians who perform elective outpatient PCIs for Medicare beneficiaries. The cost measure is calculated by determining the risk-adjusted episode cost, averaged across all of a clinician's episodes during the measurement period. The cost of each episode is the sum of the cost to Medicare for services performed by the attributed clinician and other healthcare providers during the episode window (from the trigger date to 30 days after the trigger date).	Cost/Resource Use	Centers for Medicare & Medicaid Services	MIPS
MUC17-363	Intracranial Hemorrhage or Cerebral Infarction	This cost measure applies to clinicians who manage the inpatient care of Medicare beneficiaries hospitalized for an intracranial hemorrhage or cerebral infarction. The cost measure is calculated by determining the risk-adjusted episode cost, averaged across all of a clinician's episodes during the measurement period. The cost of each episode is the sum of the cost to Medicare for services performed by the attributed clinician and other healthcare providers during the episode window (from the trigger date to 90 days after the trigger date).	Cost/Resource Use	Centers for Medicare & Medicaid Services	MIPS
MUC17-365	Simple Pneumonia with Hospitalization	The Simple Pneumonia with Hospitalization cost measure applies to clinicians who manage the inpatient care of Medicare beneficiaries hospitalized with simple pneumonia. The cost measure is calculated by determining the risk-adjusted episode cost, averaged across all of a clinician's episodes during the measurement period. The cost of each episode is the sum of the cost to Medicare for services performed by the attributed clinician and other healthcare providers during the episode window (from the trigger date to 30 days after the trigger date).	Cost/Resource Use	Centers for Medicare & Medicaid Services	MIPS

MUC ID	Measure Title	Description	Measure Type	Measure Steward	CMS Program(s)
MUC17-367	HIV Screening	Percentage of patients 15-65 years of age who have ever been tested for human immunodeficiency virus (HIV)	Process/Population Health	Centers for Disease Control and Prevention	MIPS

APPENDIX A: MEASURE SPECIFICATIONS

Table Legend for Measure Specifications.

MUC ID: Gives users an identifier to refer to a unique measure.

Measure Title: The title of the measure.

Numerator: The numerator reflects the subset of patients in the denominator for whom a particular service has been provided or for whom a particular outcome has been achieved.

Denominator: The lower part of a fraction used to calculate a rate, proportion, or ratio. The denominator is associated with a given patient population that may be counted as eligible to meet a measure's inclusion requirements.

Exclusions: Exclusions are patients included in an initial population for whom there are valid reasons a process or outcome of care has not occurred. These cases are removed from the denominator. When clinical judgment is allowed, these are referred to as "exceptions." Denominator exceptions fall into three general categories: medical reasons, patients' reasons, and system reasons. Exceptions must be captured in a way that they could be reported separately.

Measure Specifications

MUC ID	Measure Title	Numerator	Denominator	Exclusions
MUC17-139	Continuity of Pharmacotherapy for Opioid Use Disorder	Individuals in the denominator who have at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than seven days	Adults who had a diagnosis of OUD and at least one claim for an OUD medication	There are no numerator or denominator exclusions
MUC17-168	Average change in functional status following lumbar spine fusion surgery	The average change (preoperative to one year post-operative) in functional status for all patients in the denominator. There is not a traditional numerator for this measure; the measure is calculating the average change in functional status score from pre-operative to post-operative functional status score. The measure is NOT aiming for a numerator target value for a post-operative ODI score. The average change is calculated as follows: Change is first calculated for each patient and then changed scores are summed and then an average is determined. Measure calculation	Eligible Population: Patients with lumbar spine fusion procedures (Arthrodesis Value Set) occurring during a 12 month period for patients age 18 and older at the start of that period. Denominator: Patients within the eligible population whose functional status was measured by the Oswestry Disability Index, version 2.1a (ODI, v2.1a) within three months preoperatively AND at one year (+/- 3 months) postoperatively. * The measure of average change in function can only be calculated if both a pre-operative and post-operative PRO assessment are completed	The following exclusions must be applied to the eligible population: Patient had cancer (Spine Cancer Value Set), fracture (Spine Fracture Value Set) or infection (Spine Infection Value Set) related to the spine. Patient had idiopathic or congenital scoliosis (Congenital Scoliosis Value Set)

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		takes into account those patients that have an improvement and those patients whose function decreases post-operatively. Example below: Patient Pre-op ODI :I Post-op ODI :I Change in ODI Patient A: I 47 :I 18 :I 29 Patient B: I 45 :I 52 :I -7 Patient C: I 56 :I 12 :I 44 Patient D: I 62 :I 25 :I 37 Patient E: I 42 :I 57 :I -15 Patient F: I 51 :I 10 :I 41 Patient G: I 62 :I 25 :I 37 Patient H: I 43 :I 20 :I 23 Patient I: I 74 :I 35 :I 39 Patient J: I 59 :I 23 :I 36 Average change in ODI one year post-op 26.4 points on a 100 point scale		
MUC17-169	Average change in functional status following total knee replacement surgery	There is not a traditional numerator for this measure; the measure is calculating the average change in functional status score from pre-operative to post-operative functional status score. The measure is NOT aiming for a numerator target value for a post-operative OKS score.	Eligible Population: Patients with total knee replacement procedures (Primary TKR Value Set, Revision TKR Value Set) occurring during a 12 month period for patients age 18 and older at the start of that period. Denominator: Patients within the eligible population whose functional status was measured by the Oxford Knee Score within three	None

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		For example: The average change in knee function was an increase of 15.9 points one year post-operatively on a 48 point scale. The average change is calculated as follows: Change is first calculated for each patient and then changed scores are summed and then an average is determined. Measure calculation takes into account those patients that have an improvement and those patients whose function decreases post-operatively. Example below: Patient Pre-op OKS :I Postop OKS :I Change in OKS Patient A: I 33 :I 45 :I 12 Patient B: I 17 :I 39 :I 22 Patient C: I 16 :I 31 :I 15 Patient D: I 23 :I 40 :I 17 Patient E: I 34 :I 42 :I 8 Patient F: I 10 :I 42 :I 32 Patient G: I 14 :I 44 :I 30 Patient H: I 32 :I 44 :I 12 Patient I: I 19 :I 45 :I 26 Patient J: I 26 :I 19 :I -7	months preoperatively AND at one year (+/- 3 months) postoperatively * The measure of average change in function can only be calculated if both a pre-operative and post-operative PRO assessment are completed	

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		Patient K: I 24 :I 43 :I 19 Patient L: I 29 :I 34 :I 5 Patient M : I 23 :I 39 :I 16 Patient N: I 29 :I 45 :I 16 Patient O: I 29 :I 45 :I 16 Patient P: I 34 :I 41 :I 7 Patient Q: I 11 :I 14 :I 3 Patient R: I 13 :I 39 :I 26 Patient S: I18 :I 45 :I 27 Average change in OKS one year post-op 15.9 points on a 48 point scale		
MUC17-170	Average change in functional status following lumbar discectomy laminotomy surgery	The average change (preoperative to three months post-operative) in functional status for all patients in the denominator. There is not a traditional numerator for this measure; the measure is calculating the average change in functional status score from pre-operative to post-operative functional status score. The measure is NOT aiming for a numerator target value for a post-operative ODI score. The average change is	Eligible Population: Patients with lumbar discectomy laminotomy procedure (Single Disc-Lami Value Set) for a diagnosis of disc herniation (Disc Herniation Value Set)) occurring during a 12 month period for patients age 18 and older at the start of that period. Denominator: Patients within the eligible population whose functional status was measured by the Oswestry Disability Index, version 2.1a (ODI, v2.1a) within three months preoperatively AND at three months (6 to 20 weeks) postoperatively. * The measure of average change in function can only be	The following exclusions must be applied to the eligible population: Patient had any additional spine procedures performed on the same date as the lumbar discectomy laminotomy

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		calculated as follows: Change is first calculated for each patient and then changed scores are summed and then an average is determined. Measure calculation takes into account those patients that have an improvement and those patients whose function decreases post-operatively. Example below: Patient Pre-op ODI :I Post-op ODI :I Change in ODI Patient A: I 47 :I 18 :I 29 Patient B: I 45 :I 52 :I -7 Patient C: I 56 :I 12 :I 44 Patient D: I 62 :I 25 :I 37 Patient E: I 42 :I 57 :I -15 Patient F: I 51 :I 10 :I 41 Patient G: I 62 :I 25 :I 37 Patient H: I 43 :I 20 :I 23 Patient I: I 74 :I 35 :I 39 Patient J: I 59 :I 23 :I 36 Average change in ODI three months post-op 26.4 points on a 100 point scale	calculated if both a pre-operative and post-operative PRO assessment are completed	
MUC17-173	Appropriate Use of DXA Scans in Women Under 65 Years Who Do Not Meet the Risk Factor Profile for	Female patients who received an order for at least one DXA scan in the measurement period	Female patients ages 50 to 64 years with an encounter during the measurement period	Exclude from the denominator patients with a combination of risk factors (as determined by age) or one of the independent risk factors: - Ages: 50-54 (>=4 combo risk factors) or 1 independent risk factor

MUC ID	Measure Title	Numerator	Denominator	Exclusions
	Osteoporotic Fracture			- Ages: 55-59 (>=3 combo risk factors) or 1 independent risk factor - Ages: 60-64 (>=2 combo risk factors) or 1 independent risk factor Combination risk factors (The following risk factors are all combination risk factors; they are grouped by when they occur in relation to the measurement period): The following risk factors may occur any time in the patient's history but must be active during the measurement period: - White (race) - BMI <= 20 kg/m2 (must be the first BMI of the measurement period) - Smoker (current during the measurement period) - Alcohol consumption (> two units per day (one unit is 12 oz. of beer, 4 oz. of wine, or 1 oz. of liquor)) The following risk factor may occur any time in the patient's history and must not start during the measurement period: - Osteopenia The following risk factors may occur at any time in the patient's history or during the measurement period: - Rheumatoid arthritis - Hyperthyroidism - Malabsorption syndromes: celiac disease, inflammatory bowel disease, ulcerative colitis, Crohn's disease, cystic fibrosis, malabsorption - Chronic liver disease - Chronic malnutrition

MUC ID	Measure Title	Numerator	Denominator	Exclusions
				The following risk factors may occur any time in the patient's history and do not need to be active at the start of the measurement period: - Documentation of history of hip fracture in parent - Osteoporotic fracture - Glucocorticoids (>= 5 mg/per day) [cumulative medication duration >= 90 days] Independent risk factors (The following risk factors are all independent risk factors; they are grouped by when they occur in relation to the measurement period): The following risk factors may occur at any time in the patient's history and must not start during the measurement period: - Osteoporosis The following risk factors may occur at any time in the patient's history prior to the start of the measurement period, but do not need to be active during the measurement period: - Gastric bypass - FRAX[R] 10-year probability of all major osteoporosis related fracture >= 9.3 percent - Aromatase inhibitors The following risk factors may occur at any time in the patient's history or during the measurement period: - Type I diabetes - End stage renal disease - Osteogenesis imperfecta - Ankylosing spondylitis

MUC ID	Measure Title	Numerator	Denominator	Exclusions
				- Psoriatic arthritis - Ehlers-Danlos syndrome - Cushings syndrome - Hyperparathyroidism - Marfan's syndrome - Lupus
MUC17-176	Medication Reconciliation for Patients Receiving Care at Dialysis Facilities	Number of patient-months for which medication reconciliation was performed and documented by an eligible professional during the reporting period. The medication reconciliation MUST: - Include the name or other unique identifier of the eligible professional; AND - Include the date of the reconciliation; AND - Address ALL known home medications (prescriptions, over-the-counters, herbals, vitamin/mineral/dietary (nutritional) supplements, and medical marijuana); AND - Address for EACH home medication: Medication name(1),	Total number of patient-months for all patients permanently assigned to a dialysis facility during the reporting period. DENOMINATOR STEP 1. Identify all in-center and home hemodialysis and peritoneal dialysis patients permanently assigned to the dialysis facility in the given calculation month. DENOMINATOR STEP 2. For all patients included in the denominator in the given calculation month in "Denominator Step 1", identify and remove all in-center hemodialysis patients who received < 7 dialysis treatments in the calculation month. DENOMINATOR STEP 3. Repeat "Denominator Step 1" and "Denominator Step 2" for each month of the one-year reporting period.	In-center patients who receive < 7 hemodialysis treatments in the facility during the reporting month. As detailed in "Denominator Step 2" above, transient patients, defined as in-center patients who receive < 7 hemodialysis treatments in the facility during the reporting month, are excluded from the measure.

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		indication(2), dosage(2), frequency(2), route of administration(2), start and end date (if applicable)(2), discontinuation date (if applicable)(2), reason medication was stopped or discontinued (if applicable)(2), and identification of individual who authorized stoppage or discontinuation of medication (if applicable)(2); AND - List any allergies, intolerances, or adverse drug events experienced by the patient. 1. For patients in a clinical trial, it is acknowledged that it may be unknown as to whether the patient is receiving the therapeutic agent or a placebo. 2. “Unknown” is an acceptable response for this field. NUMERATOR STEP 1. For each patient meeting the denominator criteria in		

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		the given calculation month, identify all patients with each of the following three numerator criteria (a, b, and c) documented in the facility medical record to define the numerator for that month: A. Facility attestation that during the calculation month: 1. The patient's most recent medication list in the dialysis medical record was reconciled to one or more external list(s) of medications obtained from the patient/caregiver (including patient-/caregiver-provided "brown-bag" information), pharmacotherapy information network (e.g., Surescripts®), hospital, or other provider AND that ALL known medications (prescriptions, OTCs, herbals, vitamin/mineral/dietary [nutritional] supplements, and		

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		medical marijuana) were reconciled; AND 2. ALL of the following items were addressed for EACH identified medication: a) Medication name; b) Indication (or "unknown"); c) Dosage (or "unknown"); d)Frequency (or "unknown"); e) Route of administration (or "unknown"); f) Start date (or "unknown"); g) End date, if applicable (or "unknown"); h) Discontinuation date, if applicable (or "unknown"); i) Reason medication was stopped or discontinued, if applicable (or "unknown"); and j) Identification of individual who authorized stoppage or discontinuation of medication, if applicable (or "unknown"); AND 3. Allergies,		

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		intolerances, and adverse drug events were addressed and documented. B. Date of the medication reconciliation. C. Identity of eligible professional performing the medication reconciliation. NUMERATOR STEP 2. Repeat "Numerator Step 1" for each month of the one-year reporting period to define the final numerator (patient-months).		
MUC17-177	Average change in leg pain following lumbar spine fusion surgery	The average change (preoperative to one year post-operative) in leg pain for all patients in the denominator. There is not a traditional numerator for this measure; the measure is calculating the average change in leg pain score from pre-operative to post-operative leg pain score. The measure is NOT aiming for a numerator target value for a post-operative pain score. The average change is calculated as follows:	Eligible Population: Patients with lumbar spine fusion procedures (Arthrodesis Value Set) occurring during a 12 month period for patients age 18 and older at the start of that period. Denominator: Patients within the eligible population whose leg pain was measured by the Visual Analog Scale (VAS) within three months preoperatively AND at one year (+/- 3 months) postoperatively. * The measure of average change in function can only be calculated if both a pre-operative and post-operative PRO assessment are completed	The following exclusions must be applied to the eligible population: Patient had cancer (Spine Cancer Value Set), fracture (Spine Fracture Value Set) or infection (Spine Infection Value Set) related to the spine. Patient had idiopathic or congenital scoliosis (Congenital Scoliosis Value Set)

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		Change is first calculated for each patient and then changed scores are summed and then an average is determined. Measure calculation takes into account those patients that have an improvement and those patients whose pain increases post-operatively. Example below: Patient I: Pre-op VAS I: Post-op VAS I:(Pre-op minus Post-op) Patient A: I: 8.5 I: 3.5 I: 5.0 Patient B: I: 9.0 I: 2.5 I: 6.5 Patient C: I: 7.0 I: 0.5 I: 6.5 Patient D: I: 6.5 I: 8.0 I: -1.5 Patient E I: 8.5 I: 2.0 I: 6.5 Patient F I: 7.5 I: 1.5 I: 6.0 Patient G I: 9.0 I: 4.5 I: 4.5 Patient H I: 5.5 I: 7.5 I: -2.0 Patient I I: 9.0 I: 5.0 I: 4.0 Patient J I: 7.0 I: 2.5 I: 4.5 Average change in VAS points 4.0		

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		Average change in leg pain one year post-op 4.0 points on a 10 point scale		
MUC17-178	30-Day Unplanned Readmissions for Cancer Patients	The numerator includes readmissions of the following patients with an eligible index admission in the measure denominator: 1) Readmitted to a short-term acute care hospital (PCHs, short-term acute care PPS hospitals, and CAHs) within 30 days of the discharge date of an index admission; and, 2) Readmitted with a Claim Inpatient Admission Type Code of "Emergency" or "Urgent" ("1" or "2"). Of note, if a patient has more than one unplanned admission within 30 days of discharge from the index admission, each readmission is only counted once in the numerator.	The denominator includes index admissions at acute care hospitals (PCHs, short-term acute care PPS hospitals, and CAHs) for patients with a discharge date during the measurement period that meet the following criterion: 1) Primary Claim Diagnosis Code or Claim Diagnosis Code I-XXV of malignant cancer (ICD-9-CM range: 140.00-209.36, 209.70-209.79, 511.81, 789.51; ICD-10-CM range: C00 -- C96.9, J91.0, R18.0). Of note, a readmission that meets the denominator criteria is included as an index admission within this measure if it meets all other eligibility criteria.	Numerator The following readmissions are excluded from the measure numerator: 1) Primary Claim Diagnosis Code of metastatic disease (ICD-9-CM range: 196-198.89, 209.70â€209.79; ICD-10-CM range: C77.0 -- C79.9, C7B.0-C7B.8). Rationale: A primary (or principal) diagnosis of metastatic disease serves as a proxy for disease progression. Readmissions for conditions or symptoms associated with disease progression are not reflective of poor clinical care but, rather, advanced disease. 2) Patients with a Primary Claim Diagnosis Code of chemotherapy or radiation encounter (ICD-9-CM range: V58.00-V58.12; ICD-10-CM range: Z51.00 -- Z51.12) as these are considered planned admissions. Rationale: Readmissions are expected and planned for some patients who require additional cancer treatment in the inpatient setting. These readmissions reflect high-quality care that is focused on patient safety and are reliably distinguishable in claims data. Denominator The following index admissions are

MUC ID	Measure Title	Numerator	Denominator	Exclusions
				excluded from the measure denominator: 1) Age less than 18 years of age (based on the beneficiary's age at the end of the prior year). Rationale: Pediatric patients represent a very small and distinct Medicare population with different characteristics and outcomes.
MUC17-181	Optimal Diabetes Care	The number of patients in the denominator whose diabetes was optimally managed during the measurement period as defined by achieving ALL of the following: - The most recent HbA1c in the measurement period has a value less than 8.0 mg/dL - The most recent Blood Pressure in the measurement period has a systolic value of less than 140 mmHg AND a diastolic value of less than 90 mmHg - On a statin medication, unless allowed contraindications or exceptions are present - Patient is not a tobacco user - Patient with ischemic vascular disease (Ischemic Vascular	18 years or older at the start of the measurement period AND less than 76 years at the end of the measurement period AND Patient had a diagnosis of diabetes (Diabetes Value Set) with any contact during the current or prior measurement period OR had diabetes (Diabetes Value Set) present on an active problem list at any time during the measurement period. AND At least one established patient office visit (Established Pt Diabetes & Vasc Value Set) for any reason during the measurement period	The following exclusions are allowed to be applied to the eligible population: - Patient was a permanent nursing home resident at any time during the measurement period - Patient was in hospice or receiving palliative care at any time during the measurement period - Patient died prior to the end of the measurement period - Patient was pregnant (Diabetes with Pregnancy Value Set) at any time during measurement period - Documentation that diagnosis was coded in error - Patient had only urgent care visits during the measurement period

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		Disease Value Set) is on daily aspirin or anti-platelets, unless allowed contraindications or exceptions are present		
MUC17-194	Optimal Vascular Care	The number of patients in the denominator whose IVD was optimally managed during the measurement period as defined by achieving ALL of the following: - The most recent Blood Pressure in the measurement period has a systolic value of less than 140 mmHg AND a diastolic value of less than 90 mmHg - On a statin medication, unless allowed contraindications or exceptions are present - Patient is not a tobacco user - On daily aspirin or anti-platelets, unless allowed contraindications or exceptions are present	18 years or older at the start of the measurement period AND less than 76 years at the end of the measurement period AND Patient had a diagnosis of ischemic vascular disease (Ischemic Vascular Disease Value Set) with any contact during the current or prior measurement period OR had ischemic vascular disease (Ischemic Vascular Disease Value Set) present on an active problem list at any time during the measurement period. AND At least one established patient office visit (Established Pt Diabetes & Vasc Value Set) for any reason during the measurement period	The following exclusions are allowed to be applied to the eligible population: - Patient was a permanent nursing home resident at any time during the measurement period - Patient was in hospice or receiving palliative care at any time during the measurement period - Patient died prior to the end of the measurement period - Documentation that diagnosis was coded in error - Patient had only urgent care visits during the measurement period
MUC17-195	Hospital-Wide All-Cause Risk Standardized Mortality Measure	This outcome measure does not have a traditional numerator and denominator. We use this field to define the measure outcome. The outcome for this measure is 30-day all-	The cohort includes inpatient admissions for patients aged 65-94 years old, with a complete claims history for the 12 months prior to admission. If a patient has more than one admission in a year, one hospitalization is randomly selected for inclusion	The measure excludes admissions for patients: - With inconsistent or unknown vital status or other unreliable data - Discharged against medical advice - Admissions for crush injury (CCS 234), burn (CCS 240), intracranial injury (CCS 233) or spinal cord injury

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		cause mortality. Mortality is defined as death for any reason within 30 days after the index admission date, including in-hospital deaths.	in the measure. Cohort includes index admissions for patients: - Who have not been transferred from another inpatient facility - Admitted for acute care (does not include principle discharge diagnosis of psychiatric disease, or rehabilitation care - Not enrolled in the Medicare hospice program at any time in the 12 months prior to the index admission, including the first day of the index admission - Without a principal diagnosis of cancer and also enrolled in Medicare hospice program during their index admission - Without any diagnosis of metastatic cancer - Not enrolled in the Medicare hospice program during admission or at discharge who die within two days of admission, or whose length of stay was under two days - Without a principal discharge diagnosis of a condition which hospitals have limited ability to influence survival, including anoxic brain damage (ICD-9 3481), persistent vegetative state (ICD-9 78003), prion diseases such as Creutzfeldt-Jakob disease (ICD-9 04619), Cheyne-Stokes respiration (ICD-9 78604), brain death (ICD-9 34882), respiratory arrest (ICD-9	(CCS 227) - With a principle discharge diagnosis within a CCS with fewer than 100 admissions in that division within the measurement year.

MUC ID	Measure Title	Numerator	Denominator	Exclusions
			7991), or cardiac arrest (ICD-9 4275) without a secondary diagnosis of acute myocardial infarction.	
MUC17-196	Hybrid Hospital-Wide All-Cause Risk Standardized Mortality Measure	This outcome measure does not have a traditional numerator and denominator. We use this field to define the measure outcome. The outcome for this measure is 30-day all-cause mortality. Mortality is defined as death for any reason within 30 days after the index admission date, including in-hospital deaths.	The cohort includes inpatient admissions for patients aged 65-94 years old, with a complete claims history for the 12 months prior to admission. If a patient has more than one admission in a year, one hospitalization is randomly selected for inclusion in the measure. Cohort includes index admissions for patients: - Who have not been transferred from another inpatient facility - Admitted for acute care (does not include principle discharge diagnosis of psychiatric disease, or rehabilitation care - Not enrolled in the Medicare hospice program at any time in the 12 months prior to the index admission, including the first day of the index admission - Without a principal diagnosis of cancer and also enrolled in Medicare hospice program during their index admission - Without any diagnosis of metastatic cancer - Not enrolled in the Medicare hospice program during admission or at discharge who die within two days of admission, or whose length of stay was under two days	The measure excludes admissions for patients: - With inconsistent or unknown vital status or other unreliable data - Discharged against medical advice - Admissions for crush injury (CCS 234), burn (CCS 240), intracranial injury (CCS 233) or spinal cord injury (CCS 227) - With a principle discharge diagnosis within a CCS with fewer than 100 admissions in that division within the measurement year.

MUC ID	Measure Title	Numerator	Denominator	Exclusions
			- Without a principal discharge diagnosis of a condition which hospitals have limited ability to influence survival, including anoxic brain damage (ICD-9 3481), persistent vegetative state (ICD-9 78003), prion diseases such as Creutzfeldt-Jakob disease (ICD-9 04619), Cheyne-Stokes respiration (ICD-9 78604), brain death (ICD-9 34882), respiratory arrest (ICD-9 7991), or cardiac arrest (ICD-9 4275) without a secondary diagnosis of acute myocardial infarction.	
MUC17-210	Hospital Harm Performance Measure: Opioid Related Adverse Respiratory Events	Number of admissions with documentation of any of the following criteria for defining ORARE: administration of narcotic antagonist (i.e., IV naloxone), unless administered during or within 2 hours following a procedure, OR respiratory stimulant (i.e., doxapram) all within 24 hours of opioid administration, over a 12-month period.	The cohort will include all discharges of adult patients (age on admission 18 years or older) occurring within a 12-month measurement period.	None
MUC17-215	Diabetes A1c Control (< 8.0)	Denominator patients whose most recent HbA1c during the measurement period was less than 8.0 mg/dL.	18 years or older at the start of the measurement period AND less than 76 years at the end of the measurement period AND Patient had a diagnosis of	The following exclusions are allowed to be applied to the eligible population: - Patient was a permanent nursing home resident at any time during the measurement period

MUC ID	Measure Title	Numerator	Denominator	Exclusions
			diabetes (Diabetes Value Set) with any contact during the current or prior measurement period OR had diabetes (Diabetes Value Set) present on an active problem list at any time during the measurement period. AND At least one established patient office visit (Established Pt Diabetes & Vasc Value Set) for any reason during the measurement period	- Patient was in hospice or receiving palliative care at any time during the measurement period - Patient died prior to the end of the measurement period - Patient was pregnant (Diabetes with Pregnancy Value Set) at any time during measurement period - Documentation that diagnosis was coded in error - Patient had only urgent care visits during the measurement period
MUC17-223	Lumbar Spine Imaging for Low Back Pain	CT or MRI of the lumbar spine studies with a diagnosis of low back pain (from the denominator) without the patient having claims-based evidence of prior antecedent conservative therapy.	CT or MRI of the lumbar spine studies with a diagnosis of low back pain on the imaging claim.	Indications for measure exclusion include any patients with diagnosis codes associated with: cancer, congenital spine & spinal cord malformations, human immunodeficiency virus (HIV), infectious conditions, inflammatory and autoimmune disorders, intraspinal abscess, intravenous drug abuse, lumbar spine surgery, neoplastic abnormalities, neurologic impairment, postoperative fluid collections and soft-tissue changes, spinal abnormalities associated with scoliosis, spinal cord infarctions, spinal vascular malformations, syringohydromyelia, treatment fields for radiation therapy, trauma, and unspecified immune deficiencies.

MUC ID	Measure Title	Numerator	Denominator	Exclusions
MUC17-233	Hospital Visits following General Surgery Ambulatory Surgical Center Procedures	For each ASC, the numerator of the ratio is the number of hospital visits predicted for the ASC's patients, accounting for its observed rate, the number and complexity of general surgery procedures performed at the ASC, and the case mix.	The denominator is the number of hospital visits expected nationally for the ASC's case/procedure mix.	Procedures for patients who survived at least 7 days, but were not continuously enrolled in Medicare FFS Parts A and B in the 7 days after the surgery are excluded. These patients are excluded to ensure all patients have full data available for outcome assessment.
MUC17-234	Ischemic Vascular Disease Use of Aspirin or Anti-platelet Medication	Denominator patients with documentation that the patient was on daily aspirin or anti-platelet medication during the measurement period, unless allowed contraindications or exceptions are present.	18 years or older at the start of the measurement period AND less than 76 years at the end of the measurement period AND Patient had a diagnosis of ischemic vascular disease (Ischemic Vascular Disease Value Set) with any contact during the current or prior measurement period OR had ischemic vascular disease (Ischemic Vascular Disease Value Set) present on an active problem list at any time during the measurement period. AND At least one established patient office visit (Established Pt Diabetes & Vasc Value Set) for any reason during the measurement period	The following exclusions are allowed to be applied to the eligible population: - Patient was a permanent nursing home resident at any time during the measurement period - Patient was in hospice or receiving palliative care at any time during the measurement period - Patient died prior to the end of the measurement period - Documentation that diagnosis was coded in error - Patient had only urgent care visits during the measurement period
MUC17-235	Routine Cataract Removal with Intraocular Lens (IOL) Implantation	The numerator of the Routine Cataract Removal with IOL Implantation cost	The cost measure denominator is the total number of episodes from the Routine Cataract Removal with IOL Implantation	The following episode-level exclusions apply: (a) The beneficiary has a primary payer other than Medicare for any amount of

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		measure is the sum of the ratio of observed to expected payment-standardized cost to Medicare for all episodes attributed to a clinician. This is then multiplied by the national average observed episode cost to generate a dollar figure.	episode group attributed to a clinician.	time overlapping the episode window or in the 120 days prior to the episode trigger day. (b) No attributed clinician is found for the episode. (c) The episode is not attributed to at least one main clinician. (d) The beneficiary's date of birth is missing. (e) The beneficiary's death date occurred before the trigger date. (f) The beneficiary's death date occurred before the episode ended. (g) The beneficiary was not enrolled in Medicare Part A and B for the entirety of the 120-day lookback period plus episode window, or is enrolled in Part C for any part of the lookback period plus episode window. (h) The episode trigger claim was not performed in an office, IP, OP, or ASC setting based on its place of service. Routine Cataract Removal with IOL Implantation episodes are also removed using exclusions specific to the Routine Cataract Removal with IOL Implantation measure that were developed with input from the Ophthalmologic Disease Management Clinical Subcommittee. The "Exclusions" and "Exclusions_Details" tabs in the Routine Cataract Removal with IOL Implantation Measure Codes List file include the list of these

MUC ID	Measure Title	Numerator	Denominator	Exclusions
				exclusions as well as the codes used to define them.
MUC17-239	International Prostate Symptom Score (IPSS) or American Urological Association-Symptom Index (AUA-SI) change 6-12 months after diagnosis of Benign Prostatic Hyperplasia	IPSS or AUASI documented at or within 1 month of BPH diagnosis and again documented 6 to 12 months after treatment initiated, showing a 3 point improvement	Equals initial population, which is Male patients with a new diagnosis of benign prostatic hyperplasia and an office visit during the measurement period	Denominator Exclusion Patient refusal to complete IPSS or AUASI document
MUC17-241	Percentage of Prevalent Patients Waitlisted (PPPW)	The numerator is the adjusted count of patient-months in which the patient at the dialysis facility is on the kidney or kidney-pancreas transplant waiting list as of the last day of each month during the reporting year. The number of patient-months on the kidney or kidney-pancreas transplant waiting list as of the last day of each month at a given facility, adjusted for age effect.	All patient-months for patients who are under the age of 75 on the last day of each month and who are assigned to the dialysis facility according to each patient's treatment history as of the last day of each month during the reporting year. A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record	Exclusions that are implicit in the denominator include: - Patients 75 years of age and older on the last day of each month during the reporting year. In addition, patients who were admitted to a skilled nursing facility (SNF) or hospice during the month of evaluation were excluded from that month. The CMS Medical Evidence Form and the CMS Long Term Care Minimum Data Set (MDS) were the data sources used for determining skilled nursing facility (SNF) patients. Patients who were identified in Questions 17u and 22 on the CMS Medical Evidence Form as institutionalized and SNF/Long Term Care Facility, respectively, or who had evidence of admission to a skilled nursing facility based on the MDS in the current month were

MUC ID	Measure Title	Numerator	Denominator	Exclusions
			represents a time period associated with a specific modality and dialysis facility. CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death, and transplant is obtained from CROWNWeb (including the CMS Medical Evidence Form (Form CMS-2728) and the Death Notification Form (Form CMS-2746)) and Medicare claims, as well as the Organ Procurement and Transplant Network (OPTN) and the Social Security Death Master File.	identified as SNF patients. Hospice status is determined from a separate CMS file that contains final action claims submitted by Hospice providers. Once a beneficiary elects Hospice, all Hospice related claims will be found in this file, regardless if the beneficiary is in Medicare fee-for-service or in a Medicare managed care plan. Patients are identified as receiving hospice care if they have any final action claims submitted to Medicare by hospice providers in the current month.
MUC17-245	Standardized First Kidney Transplant Waitlist Ratio for Incident Dialysis Patients (SWR)	Number of patients at the dialysis facility listed on the kidney or kidney-pancreas transplant waitlist or who received living donor transplants within the first year following initiation of dialysis. Data are currently aggregated across 3 years due to the low number of event rates. The numerator for the SWR is the observed number of events (i.e., waitlisting or receipt of a living-donor transplant).	The denominator for the SWR is the expected number of wait listing or living donor transplant events at the facility according to each patient's treatment history for patients within the first year following initiation of dialysis, adjusted for age and incident comorbidities, among patients under 75 years of age who were not already waitlisted prior to dialysis. A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and	Exclusions that are implicit in the denominator definition include: - Patients at the facility who were 75 years of age and older at initiation of dialysis - Patients at the facility who were listed on the kidney or kidney-pancreas transplant waitlist prior to the start of dialysis In addition, patients who were admitted to a skilled nursing facility (SNF) or hospice at the time of initiation of dialysis were excluded. The CMS Medical Evidence Form and the CMS Long Term Care Minimum Data Set (MDS) were the data sources used for determining skilled nursing facility (SNF) patients.

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		To be included in the numerator for a particular facility, the patient must meet one of the two criteria: - The patient is on the kidney or kidney-pancreas transplant waitlist or - The patient has received a living donor transplant	dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death, and transplant is obtained from CROWNWeb (including the CMS Medical Evidence Form (Form CMS-2728) and the Death Notification Form (Form CMS-2746)) and Medicare claims, as well as the Organ Procurement and Transplant Network (OPTN) and the Social Security Death Master File. The denominator of the SWR for a given facility represents the number of expected events (waitlistings or living-donor transplants) at the facility. The estimation of this expected number accounts for the follow-up time and risk profile of each patient. The risk profile is	Patients who were identified in Questions 17u and 22 on the CMS Medical Evidence Form as institutionalized and SNF/Long Term Care Facility, respectively, or who had evidence of admission to a skilled nursing facility based on the MDS before their first service date and were not discharged prior to initiation of dialysis were identified as SNF patients. Hospice status is determined from a separate CMS file that contains final action claims submitted by Hospice providers. Once a beneficiary elects Hospice, all Hospice related claims will be found in this file, regardless if the beneficiary is in Medicare fee-for-service or in a Medicare managed care plan. Patients are identified as receiving hospice care if they have any final action claims submitted to Medicare by hospice providers in the current month.

MUC ID	Measure Title	Numerator	Denominator	Exclusions
			quantified through covariate effects estimated through Cox regression (Cox, 1972; SAS Institute Inc., 2004; Kalbfleisch and Prentice, 2002; Collett, 1994).	
MUC17-256	Screening/Surveillance Colonoscopy	The numerator of the Screening/Surveillance Colonoscopy cost measure is the sum of the ratio of observed to expected payment-standardized cost to Medicare for all episodes attributed to a clinician. This is then multiplied by the national average observed episode cost to generate a dollar figure.	The cost measure denominator is the total number of episodes from the Screening/Surveillance Colonoscopy episode group attributed to a clinician.	The following episode-level exclusions apply: (a) The beneficiary has a primary payer other than Medicare for any amount of time overlapping the episode window or in the 120 days prior to the episode trigger day. (b) No attributed clinician is found for the episode. (c) The episode is not attributed to at least one main clinician. (d) The beneficiary's date of birth is missing. (e) The beneficiary's death date occurred before the trigger date. (f) The beneficiary's death date occurred before the episode ended. (g) The beneficiary was not enrolled in Medicare Part A and B for the entirety of the 120-day lookback period plus episode window, or is enrolled in Part C for any part of the lookback period plus episode window. (h) The episode trigger claim was not performed in an office, IP, OP, or ASC setting based on its place of service.
MUC17-258	CoreQ: Short Stay Discharge Measure	The numerator is the sum of the individuals in the facility that have an	The denominator includes all of the patients that are admitted to the SNF, regardless of payor	Exclusions made at the time of sample selection and the following: (1) Patients who died during their

MUC ID	Measure Title	Numerator	Denominator	Exclusions
		average satisfaction score of greater than or equal to 3 for the four questions on the CoreQ: Short Stay Discharge questionnaire that utilizes four items. The following are the four items: 1. In recommending this facility to your friends and family, how would you rate it overall? (Poor, Average, Good, Very Good, or Excellent) 2. Overall, how would you rate the staff? (Poor, Average, Good, Very Good, or Excellent) 3. How would you rate the care you receive? (Poor, Average, Good, Very Good, or Excellent) 4. How would you rate how well your discharge needs were met? (Poor, Average, Good, Very Good, or Excellent)	source, for post-acute care, that are discharged within 100 days; who receive the survey (e.g. people meeting exclusions do not receive a questionnaire) and who respond to the CoreQ: Short Stay Discharge questionnaire within two months of receiving the questionnaire.	SNF stay; (2) Patients discharged to a hospital, another SNF, psychiatric facility, inpatient rehabilitation facility or long term care hospital; (3) Patients with court appointed legal guardian for all decisions; (4) Patients discharged on hospice; (5) Patients who left the nursing facility against medical advice (AMA); (6) Patients who have dementia impairing their ability to answer the questionnaire defined as having a BIMS score on the MDS 3.0 as 7 or lower. [Note: we understand that some SNCCs may not have information on cognitive function available to help with sample selection. In that case, we suggest administering the survey to all residents and assume that those with cognitive impairment will not complete the survey or have someone else complete on their behalf which in either case will exclude them from the analysis.] Additionally, once the survey is administered, the following exclusions are applied: (a) Patients who responded after the two-month response period; and (b) Patients whose responses were filled out by someone else. (Note this does not include cases where the resident solely had help such as reading the questions or writing down their responses.) Surveys returned as un-deliverable are also excluded from the denominator.

MUC ID	Measure Title	Numerator	Denominator	Exclusions
MUC17-261	Knee Arthroplasty	The numerator of the Knee Arthroplasty cost measure is the sum of the ratio of observed to expected payment-standardized cost to Medicare for all episodes attributed to a clinician. This is then multiplied by the national average observed episode cost to generate a dollar figure.	The cost measure denominator is the total number of episodes from the Knee Arthroplasty episode group attributed to a clinician.	The following episode-level exclusions apply: (a) The beneficiary has a primary payer other than Medicare for any amount of time overlapping the episode window or in the 120 days prior to the episode trigger day. (b) No attributed clinician is found for the episode. (c) The episode is not attributed to at least one main clinician. (d) The beneficiary's date of birth is missing. (e) The beneficiary's death date occurred before the trigger date. (f) The beneficiary's death date occurred before the episode ended. (g) The beneficiary was not enrolled in Medicare Part A and B for the entirety of the 120-day lookback period plus episode window, or is enrolled in Part C for any part of the lookback period plus episode window. (h) The episode trigger claim was not performed in an office, IP, OP, or ASC setting based on its place of service. Knee Arthroplasty episodes are also removed using exclusions specific to the Knee Arthroplasty measure that were developed with input from the Musculoskeletal Disease Management - Non-Spine Clinical Subcommittee. The "Exclusions" and "Exclusions_Details" tabs in the Knee

MUC ID	Measure Title	Numerator	Denominator	Exclusions
				Arthroplasty Measure Codes List file include the list of these exclusions as well as the codes used to define them.
MUC17-262	ST-Elevation Myocardial Infarction (STEMI) with Percutaneous Coronary Intervention (PCI)	The numerator of the STEMI with PCI cost measure is the sum of the ratio of observed to expected payment-standardized cost to Medicare for all episodes attributed to a clinician. This is then multiplied by the national average observed episode cost to generate a dollar figure.	The cost measure denominator is the total number of episodes from the STEMI with PCI episode group attributed to a clinician.	The following episode-level exclusions apply: (a) The beneficiary has a primary payer other than Medicare for any amount of time overlapping the episode window or in the 120 days prior to the episode trigger day. (b) No attributed clinician is found for the episode. (c) The episode is not attributed to at least one main clinician. (d) The beneficiary's date of birth is missing. (e) The beneficiary's death date occurred before the trigger date. (f) The beneficiary's death date occurred before the episode ended. (g) The beneficiary was not enrolled in Medicare Part A and B for the entirety of the 120-day lookback period plus episode window, or is enrolled in Part C for any part of the lookback period plus episode window. (h) The episode trigger claim was not performed in an office, IP, OP, or ASC setting based on its place of service. STEMI with PCI episodes are also removed using exclusions specific to the STEMI with PCI measure that were developed with input from the Cardiovascular Disease Management

MUC ID	Measure Title	Numerator	Denominator	Exclusions
				Clinical Subcommittee. The "Exclusions" and "Exclusions_Details" tabs in the STEMI with PCI Measure Codes List file include the list of these exclusions as well as the codes used to define them.
MUC17-263	Revascularization for Lower Extremity Chronic Critical Limb Ischemia	The numerator of the Revascularization for Lower Extremity Chronic Critical Limb Ischemia cost measure is the sum of the ratio of observed to expected payment-standardized cost to Medicare for all episodes attributed to a clinician. This is then multiplied by the national average observed episode cost to generate a dollar figure.	The cost measure denominator is the total number of episodes from the Revascularization for Lower Extremity Chronic Critical Limb Ischemia episode group attributed to a clinician.	The following episode-level exclusions apply: (a) The beneficiary has a primary payer other than Medicare for any amount of time overlapping the episode window or in the 120 days prior to the episode trigger day. (b) No attributed clinician is found for the episode. (c) The episode is not attributed to at least one main clinician. (d) The beneficiary's date of birth is missing. (e) The beneficiary's death date occurred before the trigger date. (f) The beneficiary's death date occurred before the episode ended. (g) The beneficiary was not enrolled in Medicare Part A and B for the entirety of the 120-day lookback period plus episode window, or is enrolled in Part C for any part of the lookback period plus episode window. (h) The episode trigger claim was not performed in an office, IP, OP, or ASC setting based on its place of service
MUC17-310	Zoster (Shingles) Vaccination	Patients with a shingles vaccine ever recorded	Patients 60 years of age and older	n/a
MUC17	Patient reported	Number of patients who	The total number of patients	Patients who did not complete a

MUC ID	Measure Title	Numerator	Denominator	Exclusions
-345	and clinical outcomes following ilio-femoral venous stenting	demonstrate improvement in a disease specific patient reported quality of life score AND who document improvement in the Venous Clinical Severity Score 3-6 months after ilio-femoral venous stenting.	undergoing ilio-femoral venous stenting	disease specific patient reported quality of life score at baseline or 3-6 months post-procedure OR Did not return to clinic 3-6 months post-procedure for assessment of the Venous Clinical Severity Score
MUC17 -359	Elective Outpatient Percutaneous Coronary Intervention (PCI)	The numerator of the Elective Outpatient PCI cost measure is the sum of the ratio of observed to expected payment-standardized cost to Medicare for all episodes attributed to a clinician. This is then multiplied by the national average observed episode cost to generate a dollar figure.	The cost measure denominator is the total number of episodes from the Elective Outpatient PCI episode group attributed to a clinician.	The following episode-level exclusions apply: (a) The beneficiary has a primary payer other than Medicare for any amount of time overlapping the episode window or in the 120 days prior to the episode trigger day. (b) No attributed clinician is found for the episode. (c) The episode is not attributed to at least one main clinician. (d) The beneficiary's date of birth is missing. (e) The beneficiary's death date occurred before the trigger date. (f) The beneficiary's death date occurred before the episode ended. (g) The beneficiary was not enrolled in Medicare Part A and B for the entirety of the 120-day lookback period plus episode window, or is enrolled in Part C for any part of the lookback period plus episode window. (h) The episode trigger claim was not performed in an office, IP, OP, or ASC

MUC ID	Measure Title	Numerator	Denominator	Exclusions
				setting based on its place of service. Elective Outpatient PCI episodes are also removed using exclusions specific to the Elective Outpatient PCI measure that were developed with input from the Cardiovascular Disease Management Clinical Subcommittee. The "Exclusions" and "Exclusions_Details" tabs in the Elective Outpatient PCI Measure Codes List file include the list of these exclusions as well as the codes used to define them.
MUC17-363	Intracranial Hemorrhage or Cerebral Infarction	The numerator of the Intracranial Hemorrhage or Cerebral Infarction cost measure is the sum of the ratio of observed to expected payment-standardized cost to Medicare for all episodes attributed to a clinician. This is then multiplied by the national average observed episode cost to generate a dollar figure.	The cost measure denominator is the total number of episodes from the Intracranial Hemorrhage or Cerebral Infarction episode group attributed to a clinician.	The following episode-level exclusions apply: (a) The beneficiary has a primary payer other than Medicare for any amount of time overlapping the episode window or in the 120 days prior to the episode trigger day. (b) No attributed clinician is found for the episode. (c) The episode is not attributed to at least one main clinician. (d) The beneficiary's date of birth is missing. (e) The beneficiary's death date occurred before the trigger date. (f) The beneficiary's death date occurred before the episode ended. (g) The beneficiary was not enrolled in Medicare Part A and B for the entirety of the 120-day lookback period plus episode window, or is enrolled in Part C

MUC ID	Measure Title	Numerator	Denominator	Exclusions
				for any part of the lookback period plus episode window. (h) The episode trigger claim was not performed in an office, IP, OP, or ASC setting based on its place of service.
MUC17-365	Simple Pneumonia with Hospitalization	The numerator of the Simple Pneumonia with Hospitalization cost measure is the sum of the ratio of observed to expected payment-standardized cost to Medicare for all episodes attributed to a clinician. This is then multiplied by the national average observed episode cost to generate a dollar figure.	The cost measure denominator is the total number of episodes from the Simple Pneumonia with Hospitalization episode group attributed to a clinician.	The following episode-level exclusions apply: (a) The beneficiary has a primary payer other than Medicare for any amount of time overlapping the episode window or in the 120 days prior to the episode trigger day. (b) No attributed clinician is found for the episode. (c) The episode is not attributed to at least one main clinician. (d) The beneficiary's date of birth is missing. (e) The beneficiary's death date occurred before the trigger date. (f) The beneficiary's death date occurred before the episode ended. (g) The beneficiary was not enrolled in Medicare Part A and B for the entirety of the 120-day lookback period plus episode window, or is enrolled in Part C for any part of the lookback period plus episode window. (h) The episode trigger claim was not performed in an office, IP, OP, or ASC setting based on its place of service. Simple Pneumonia with Hospitalization episodes are also removed using exclusions specific to the Simple

MUC ID	Measure Title	Numerator	Denominator	Exclusions
				Pneumonia with Hospitalization measure that were developed with input from the Pulmonary Disease Management Clinical Subcommittee. The "Exclusions" and "Exclusions_Details" tabs in the Simple Pneumonia with Hospitalization Measure Codes List file include the list of these exclusions as well as the codes used to define them.
MUC17-367	HIV Screening	Patients with documentation of the occurrence of an HIV test between their 15th and 66th birthdays and before the end of the measurement period	Patients 15 to 65 years of age who had an outpatient visit during the measurement period	Exclude from the denominator: patients diagnosed with HIV prior to the start of the measurement period

APPENDIX B: MEASURE RATIONALES

Legend for Measure Rationales

MUC ID: Gives users an identifier to refer to a measure.

Measure Title: Refers to the title of the measure.

Rationale: Refers to the rationale for the measure, the peer-reviewed evidence justifying the measure, and/or the impact the measure is anticipated to achieve.

Measure Rationales

MUC ID	Measure Title	Rationale
MUC17-139	Continuity of Pharmacotherapy for Opioid Use Disorder	In this section, first we summarize the evidence from the systematic reviews and meta-analyses cited by the 2015 “VA/DoD clinical practice guideline for the management of substance use disorders” that support the recommendations related to pharmacotherapy for treatment of opioid use disorder. Following that, we present evidence in support of the measure definition: using a minimum of 6 months’ duration of pharmacotherapy, and no gaps of more than seven days. EVIDENCE CITED BY 2015 VA/DOD GUIDELINE SUPPORTING PHARMACOTHERAPY FOR TREATMENT OF OUD Mattick RP, Breen C, Kimber J, Davoli M. Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence. Cochrane Database Syst Rev. 2014;2:Cd002207. The results are based on 5430 patients in 31 RCTs. Fixed-dose studies of buprenorphine vs. placebo: “There is high quality of evidence that buprenorphine was superior to placebo medication in retention of participants in treatment at all doses examined. Specifically, buprenorphine retained participants better than placebo: at low doses (2 - 6 mg), 5 studies, 1131 participants, risk ratio (RR) 1.50; 95% confidence interval (CI) 1.19 to 1.88; at medium doses (7 - 15 mg), 4 studies, 887 participants, RR 1.74; 95% CI 1.06 to 2.87; and at high doses (â‰¥ 16 mg), 5 studies, 1001 participants, RR 1.82; 95% CI 1.15 to 2.90. However, there is moderate quality of evidence that only high-dose buprenorphine (â‰¥ 16 mg) was more effective than placebo in suppressing illicit opioid use measured by urinalysis in the trials, 3 studies, 729 participants, standardised mean difference (SMD) -1.17; 95% CI -1.85 to -0.49, notably, low-dose, (2 studies, 487 participants, SMD 0.10; 95% CI -0.80 to 1.01), and medium-dose, (2 studies, 463 participants, SMD -0.08; 95% CI -0.78 to 0.62) buprenorphine did not suppress illicit opioid use measured by urinalysis better than placebo.” Bao YP, Liu ZM, Epstein DH, Du C, Shi J, Lu L. A meta-analysis of retention in methadone maintenance by dose and dosing strategy. Am J Drug Alcohol Abuse. 2009;35(1):28-33. In univariate analyses, doses of MMT greater than or equal to 60 mg/day were associated with greater retention than doses less than 60 mg/day at 3-6 months (62.5% vs. 50.6%; p=0.0005) and 6-12 months (57.0% vs. 42.5%; p<0.0001). Flexible dosing was associated with greater retention than fixed dosing strategies at 3-6 months (61.0% vs. 49.9%; p=0.0007) and 6-12 months (61.7% vs. 45.9%; p<0.0001). In multilevel analyses (follow-up duration, dose, and dosing strategy), retention was greater with methadone doses â‰¥ 60 mg/day than with doses <60 mg/day (OR: 1.74, 95% CI: 1.43-2.11). Similarly, retention was greater with flexible-dose strategies than with fixed-dose strategies (OR: 1.72, 95% CI: 1.41-2.11). Mattick RP, Breen C, Kimber J, Davoli M. Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence. Cochrane Database Syst Rev. 2009(3):Cd002209. The results are based on 1969 patients in 11 randomized clinical trials. “Methadone appeared statistically significantly more effective than non-pharmacological approaches in retaining patients in treatment and in the suppression of heroin use as measured by self report and urine/hair analysis (6 RCTs, RR = 0.66; 95% CI

MUC ID	Measure Title	Rationale
		0.56-0.78), but not statistically different in criminal activity (3 RCTs, RR=0.39; 95% CI 0.12-1.25) or mortality (4 RCTs, RR=0.48; 95% CI: 0.10-2.39)." Krupitsky E, Nunes EV, Ling W, Illeperuma A, Gastfriend DR, Silverman BL. Injectable extended-release naltrexone for opioid dependence: A double-blind, placebo-controlled, multicentre randomised trial. Lancet. Apr 30 2011;377(9776):1506-1513. The median proportion of weeks of confirmed abstinence was significantly higher in the naltrexone group than in the placebo group (90.0% for naltrexone vs. 35.0% for placebo; p=0.0002). The proportion of patients with total confirmed abstinence was higher in the naltrexone group than the placebo group (RR=1.58; 95% CI, 1.06 to 2.36; p=0.0224). Comparing clinical outcomes between the naltrexone and placebo groups yielded the following results: proportion of self-reported opioid-free days over the 24 weeks (99.2% for naltrexone vs. 60.4% for placebo; p=0.0004), mean change in opioid craving score from baseline (-10.1 for naltrexone vs. 0.7 for placebo; p<0.0001), number of days of retention (>168 days for naltrexone vs. 96 days for placebo; p=0Â·0042), and number of participants with positive naloxone challenge test (1 for naltrexone vs. 17 for placebo; p<0.0001). EVIDENCE SUPPORTING MEASURE DEFINITION We define treatment continuity as (1) receiving at least 180 days of treatment and (2) no gaps in medication use of more than 7 days. Our definition of minimum duration is based on the fact that the FDA registration trials for OUD drugs studied the effect of treatment over three to six months (US FDAa, undated; US FDAb, undated), and we have no evidence for effectiveness of shorter durations. In addition, several recommendations support a minimum six-month treatment period as the risk of relapse is the highest in the first 6-12 months after start of opioid abstinence (US FDAa, undated; US FDAb, undated; US DHHS, 2015). Longer treatment duration is associated with better outcomes compared to shorter treatments and the best outcomes have been observed among patients in long-term methadone maintenance programs ("Effective medical treatment of opiate addiction", 1998; Gruber et al., 2008; Moos et al., 1999; NIDA, 1999; Ouimette et al., 1998; Peles et al., 2013). Studies with long-term follow-up suggest that ongoing pharmacotherapy is associated with improved odds of opioid abstinence (Hser et al., 2015; Weiss et al., 2015). We did not specify a maximum duration of treatment, as no upper limit for duration of treatment has been empirically established (US DHHS, 2015). We opted for using a treatment gap of more than seven days in our definition, given that the measure includes three active ingredients with different pharmacological profiles. There is substantial evidence for an elevated mortality risk immediately after treatment cessation (Cornish et al., 2010; Cousins et al., 2016; Davoli et al, 2007; Degenhardt et al., 2009; Gibson & Degenhardt, 2007;Pierce et al., 2016). Research suggests that methadone tolerance is lost after three days and this three-day threshold has been used in other observational methadone studies and in developing a United Kingdom treatment guideline which recommends revaluating patients for intoxication and withdrawal after a three-day methadone treatment gap (Cousins et al., 2016; Cousins et al., 2011; "Drug Misuse and Dependence--Guidelines on Clinical

MUC ID	Measure Title	Rationale
		Management", 1999). Across all of the medications, the mortality risk is highest in the first four weeks out of treatment, with many studies showing an increase in mortality in days 1-14 after treatment cessation. Citations Cornish R, Macleod J, Strang J, Vickerman P, Hickman M. Risk of death during and after opiate substitution treatment in primary care: prospective observational study in UK General Practice Research Database. Bmj. 2010;341:c5475. Cousins G, Teljeur C, Motterlini N, McCowan C, Dimitrov BD, Fahey T. Risk of drug-related mortality during periods of transition in methadone maintenance treatment: a cohort study. J Subst Abuse Treat 2011; 41: 252-60. Cousins G, Boland F, Courtney B, Barry J, Lyons S, Fahey T. Risk of mortality on and off methadone substitution treatment in primary care: a national cohort study. Addiction. 2016;111(1):73-82. Davoli M, Bargagli AM, Perucci CA, et al. Risk of fatal overdose during and after specialist drug treatment: the VEdeTTE study, a national multisite prospective cohort study. Addiction. 2007;102:1954-9. Degenhardt L, Randall D, Hall W, Law M, Butler T, Burns L. Mortality among clients of a state-wide opioid pharmacotherapy program over 20 years: risk factors and lives saved. Drug and alcohol dependence. 2009;105:9-15. "Drug Misuse and Dependence--Guidelines on Clinical Management." Scottish Office Department of Health, Welsh Office, Social Services Northern Ireland. London: Stationery Office, 1999. Effective medical treatment of opiate addiction. National Consensus Development Panel on Effective Medical Treatment of Opiate Addiction. JAMA.1998;280:1936-1943. Gibson AE, Degenhardt LJ. Mortality related to pharmacotherapies for opioid dependence: a comparative analysis of coronial records. Drug Alcohol Rev. 2007; 26(4), 405-410. Gruber VA, Delucchi KL, Kielstein A, Batki SL. A randomized trial of 6-month methadone maintenance with standard or minimal counseling versus 21-day methadone detoxification. Drug and Alcohol Dependence. 2008;94(1-3):199-206. Hser YI, Evans E, Grella C, Ling W, Anglin D. Long-term course of opioid addiction. Harvard Review of Psychiatry. 2015;23(2):76-89. Moos RH, Finney JW, Ouimette PC, Suchinsky RT. A comparative evaluation of substance abuse treatment: I. Treatment orientation, amount of care, and 1-year outcomes. Alcohol Clin Exp Res. 1999;23(3):529-36. National Institute on Drug Abuse (NIDA). Principles of Drug Addiction Treatment: A Research-Based Guide. NIH Publication No. 99-4180. Rockville, MD: NIDA, 1999, reprinted 2000 Ouimette PC, Moos RH, Finney JW. Influence of outpatient treatment and 12-step group involvement on one-year substance abuse treatment outcomes. J Stud Alcohol. 1998;59:513-522 Peles E, Schreiber S, Adelson M. Opiate-dependent patients on a waiting list for methadone maintenance treatment are at high risk for mortality until treatment entry. J Addict Med. 2013;7(3):177-82. Pierce M, Bird SM, Hickman M, Marsden J, Dunn G, Jones A, et al. Impact of treatment for opioid dependence on fatal drug-related poisoning: a national cohort study in England. Addiction. 2016;111:298-

MUC ID	Measure Title	Rationale
		308. U.S. Department of Health and Human Services Assistant Secretary for Planning and Evaluation Office of Disability, Aging and Long-Term Care Policy. Review of Medication-Assisted Treatment Guidelines and Measures for Opioid and Alcohol Use. Washington, DC, 2015. Accessed November 9, 2016 at: https://aspe.hhs.gov/sites/default/files/pdf/205171/MATguidelines.pdf U.S. Food and Drug Administration (FDA) (a). REVIA Label. Accessed November 24, 2016 at: http://www.accessdata.fda.gov/drugsatfda_docs/label/2013/018932s017lbl.pdf U.S. Food and Drug Administration (FDA) (b). VIVITROL Label. Accessed November 24, 2016 at: http://www.accessdata.fda.gov/drugsatfda_docs/label/2006/021897lbl.pdf Weiss RD; Potter JS; Griffin ML, et al. Long-term outcomes from the National Drug Abuse Treatment Clinical Trials Network Prescription Opioid Addiction Treatment Study. Drug and Alcohol Dependence. 2015;150:112-119. EVIDENCE SUPPORTING USE OF 7-DAY GAP IN MEASURE DEFINITION We performed a review of studies that looked at the mortality risk during treatment cessation for OUD pharmacotherapy. All of the studies found evidence for increased mortality during treatment cessation and the results were consistent for the different MAT drugs. For Buprenorphine, we found two studies that both indicated an increased risk of mortality upon treatment cessation (Cornish et al., 2010; Degenhardt et al., 2009). For Methadone, we found four studies that all indicated an increased risk of mortality upon treatment cessation (Cornish et al., 2010; Cousins et al., 2016; Davoli et al., 2007; Degenhardt et al., 2009). For Methadone/Buprenorphine, we found two studies that both indicated an increased risk of mortality upon treatment cessation (Cornish et al., 2010; Pierce et al., 2016). For Naltrexone, we found one study that indicated an increased risk of mortality upon treatment cessation (Gibson & Degenhardt , 2007). Across all the medications, the mortality risk is highest in the first four weeks out of treatment, with many studies showing an increase in mortality in days 1-14 after treatment cessation. This evidence supports the recommendation for no gaps in care of more than 7 days. Citations Cornish R, Macleod J, Strang J, Vickerman P, Hickman M. Risk of death during and after opiate substitution treatment in primary care: prospective observational study in UK General Practice Research Database. Bmj. 2010;341:c5475. Cousins G, Boland F, Courtney B, Barry J, Lyons S, Fahey T. Risk of mortality on and off methadone substitution treatment in primary care: a national cohort study. Addiction. 2016;111(1):73-82. Davoli M, Bargagli AM, Perucci CA, et al. Risk of fatal overdose during and after specialist drug treatment: the VEdeTTE study, a national multisite prospective cohort study. Addiction. 2007;102:1954-9. Degenhardt L, Randall D, Hall W, Law M, Butler T, Burns L. Mortality among clients of a state-wide opioid pharmacotherapy program over 20 years: risk factors and lives saved. Drug and alcohol dependence. 2009;105:9-15. Gibson AE, Degenhardt LJ. Mortality related to pharmacotherapies for opioid dependence: a comparative

MUC ID	Measure Title	Rationale
		analysis of coronial records. Drug Alcohol Rev. 2007; 26(4), 405-410. Pierce M, Bird SM, Hickman M, Marsden J, Dunn G, Jones A, et al. Impact of treatment for opioid dependence on fatal drug-related poisoning: a national cohort study in England. Addiction. 2016;111:298-308.
MUC17-168	Average change in functional status following lumbar spine fusion surgery	Patient Reported Outcome Measures and Integration Into Electronic Health Records Pitzen, C. et al, Journal of Oncology Practice DOI: 10.1200/JOP.2016.014118; published online ahead of print at jop.ascopubs.org on July 26, 2016.
MUC17-169	Average change in functional status following total knee replacement surgery	Patient-reported outcomes after total and unicompartmental knee arthroplasty: a study of 14,076 matched patients from the National Joint Registry for England and Wales. Liddle, AD et al Bone Joint J. 2015 Jun;97-B(6):793-801. doi: 10.1302/0301-620X.97B6.35155.
MUC17-170	Average change in functional status following lumbar discectomy laminotomy surgery	Patient Reported Outcome Measures and Integration Into Electronic Health Records Pitzen, C. et al, Journal of Oncology Practice DOI: 10.1200/JOP.2016.014118; published online ahead of print at jop.ascopubs.org on July 26, 2016.
MUC17-173	Appropriate Use of DXA Scans in Women Under 65 Years Who Do Not Meet the Risk Factor Profile for Osteoporotic Fracture	Current osteoporosis guidelines recommend screening postmenopausal women younger than 65 for osteoporosis only if they meet a risk-factor profile. The risks for those under 65 that merit osteoporosis screening include, but are not limited to, previous osteoporotic fracture, osteoporosis, rheumatoid arthritis and other conditions associated with secondary osteoporosis, parental history of fractures, BMI less than 21 kg/m2, long-term use of glucocorticoids, current smoking, or excessive alcohol intake (USPSTF 2011). Although there is evidence to support the cost-effectiveness of DXA screening in women older than 65, there is not enough evidence to support screening women younger than 65 who do not meet a risk-factor profile (Lim et al. 2009). This measure is expected to increase recording of patient risks for fractures and decrease the number of inappropriate DXA scans. References Lim, L.S., L.J. Hoeksema, and K. Sherin. “Screening for Osteoporosis in the Adult U.S. Population: ACPM Position Statement on Preventive Practice.” American Journal of Preventive Medicine, vol. 36, no. 4, 2009, pp. 366-375. USPSTF. “Screening for Osteoporosis: U.S. Preventive Services Task Force Recommendation Statement.” Annals of Internal Medicine, vol. 154, no. 5, 2011, pp. 356-364.

MUC ID	Measure Title	Rationale
MUC17-176	Medication Reconciliation for Patients Receiving Care at Dialysis Facilities	Medication management is a critical safety issue for all patients, but especially so for patients with ESRD, who often require 10 or more medications and take an average of 17-25 doses per day, have numerous comorbid conditions, have multiple healthcare providers and prescribers, and undergo frequent medication regimen changes(1,2,3,4). Medication-related problems (MRPs) contribute significantly to the approximately $40 billion in public and private funds spent annually on ESRD care in the United States(5,6), and it is believed that medication management practices focusing on medication documentation, review, and reconciliation could systematically identify and resolve MRPs, improve ESRD patient outcomes, and reduce total costs of care. As most hemodialysis patients are seen at least thrice weekly and peritoneal dialysis patients monthly, the dialysis facility has been suggested as a reasonable locale for medication therapy management(7).
MUC17-177	Average change in leg pain following lumbar spine fusion surgery	Patient Reported Outcome Measures and Integration Into Electronic Health Records Pitzen, C. et al, Journal of Oncology Practice DOI: 10.1200/JOP.2016.014118; published online ahead of print at jop.ascopubs.org on July 26, 2016.
MUC17-178	30-Day Unplanned Readmissions for Cancer Patients	Cancer is the second leading cause of death in the United States, with nearly 600,000 cancer-related deaths expected this year.1 It is now the leading cause of death among adults aged 40 to 79 years as well and in 21 states.2 It is estimated roughly 1.7 million Americans will be diagnosed with cancer in 2016, and nearly 14.5 million Americans with a history of cancer were alive in 2014. Cancer disproportionately affects older Americans, with 86% of all cancers diagnosed in people 50 years of age and older.1 Oncology care contributes greatly to Medicare spending and accounted for an estimated $125 billion in healthcare spending in 2010. This figure is projected to rise to between $173 billion and $207 billion by 2020.3 Given the current and projected increases in cancer prevalence and costs of care, it is essential that healthcare providers look for opportunities to lower the costs of cancer care. Reducing readmissions after hospital discharge has been proposed as an effective means of lowering healthcare costs and improving the outcomes of care. Research suggests that between 9% and 48% of all hospital readmissions are preventable, owing to inadequate treatment during the patient's original (index) admission or after discharge.4 Jencks, et al. estimated that unplanned readmissions cost the Medicare program $17.4 billion in 2004.5 Unnecessary hospital readmissions negatively impact cancer patients by compromising their quality of life, by placing them at risk for health-acquired infections, and by increasing the costs of their care. Furthermore, unplanned readmissions during treatment can delay treatment completion and, potentially, worsen patient prognosis. Preventing these readmissions improves the quality of care for cancer patients. Numerous studies have examined all-cause readmissions and readmissions for specific conditions, such as orthopedic surgery. Existing studies in cancer have largely focused on post-operative readmissions, reporting readmission rates

MUC ID	Measure Title	Rationale
		between 6.5% and 25%. Patient factors, including age, comorbidities, cancer stage, and socioeconomic status, were identified as risk factors in these patients. Surgical complications, surgery duration, and hospital length of stay also increased readmission risk in these studies. Finally, hospital factors (e.g., hospital size) and practice patterns, such as inadequate discharge planning, comorbidity management, and follow-up care, were associated with preventable readmissions.6-17 Moya, et al. observed a 20% readmission rate in hematopoietic cell transplantation (HCT) recipients along with an extended length of stay during the readmission (25 Â± 21 days). Infections (some associated with the graft), graft failure, coagulation disorders, and a second neoplasm were the most frequent causes of readmission.18 Bejanyan, et al. examined readmissions in patients with myeloablative allogeneic HCT and observed a 39% readmission rate in these patients. Infections, fever, gastrointestinal complications, and graft-versus-host disease (GVHD) were the most frequent reasons for readmission.19 Less is known about other readmissions in medical cancer admissions, though Ji, et al. noted that surgical patients were most often readmitted for surgical complications while medical patients were typically readmitted for the same condition treated during the index admission.6 Together, these studies suggest that certain readmissions in cancer patients are preventable and should be routinely measured for purposes of quality improvement and accountability. All-cause and disease-specific unplanned readmissions rates have been adopted by the Centers for Medicare & Medicaid Services (CMS) as key indicators of inpatient quality care. Additionally, Medicare began reducing payments to hospitals with excess readmissions in October 2012, as mandated in the Patient Protection and Affordable Care Act of 2010. Benbassat, et al. concluded that global readmission rates are not useful indicators of healthcare quality and, instead, recommended measuring readmissions at the condition level.4 Readmission rates have been developed for pneumonia, acute myocardial infarction, and heart failure. However, cancer has lagged behind these conditions in the development of validated readmission rates. In 2012, the Comprehensive Cancer Center Consortium for Quality Improvement, or C4QI (a group of eighteen academic medical centers that collaborate to measure and improve the quality of cancer in their centers), began development of a cancer-specific unplanned readmissions measure: 30-Day Unplanned Readmissions for Cancer Patients. The Alliance of Dedicated Cancer Centers, or ADCC (an organization of eleven comprehensive cancer centers that are reimbursed differently by Medicare), identified this ongoing work as a potential accountability measure for the PCHQR. Both groups recognize the importance of measuring unplanned readmissions as an indicator of the quality of hospital-based oncology care and have designed the 30-Day Unplanned Readmissions for Cancer Patients measure accordingly.5,6 This measure is intended to reflect the unique clinical aspects of oncology patients and to yield readmission rates that more accurately reflect the quality of cancer care delivery, when compared with broader readmissions measures. Likewise, this measure addresses cancer measurement gaps in existing readmissions measures, such as the Hospital-Wide All-Cause Unplanned Readmission Measure (HWR), stewarded by CMS. The 30-Day Unplanned Readmissions for Cancer Patients measure can be used by individual hospitals to inform local quality improvement efforts. Through adoption in public reporting programs (e.g., PCHQR), it can increase transparency around the quality of care delivered to patients with

MUC ID	Measure Title	Rationale
		cancer. 1. American Cancer Society. Cancer facts and figures 2016. 2016. Available at: http://www.cancer.org/acs/groups/content/@research/documents/document/acspc-047079.pdf. 2. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2016. CA Cancer J Clin. 2016;66(1):7-30. 3. Mariotto AB, Yabroff KR, Shao Y, Feuer EJ, Brown ML. Projections of the cost of cancer care in the United States: 2010-2020. J Natl Cancer Inst. 2011;103(2):117-128. 4. Benbassat J, Taragin M. Hospital readmissions as a measure of quality of health care: advantages and limitations. Arch Intern Med. 2000;160(8):1074-1081. 5. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. N Engl J Med. 2009;360(14):1418-1428. 6. Ji H, Abushomar H, Chen XK, Qian C, Gerson D. All-cause readmission to acute care for cancer patients. Healthc Q. 2012;15(3):14-16. 7. Rochefort MM, Tomlinson JS. Unexpected readmissions after major cancer surgery: an evaluation of readmissions as a quality-of-care indicator. Surg Oncol Clin N Am. 2012;21(3):397-405, viii. 8. Manzano JG, Luo R, Elting LS, George M, Suarez-Almazor ME. Patterns and predictors of unplanned hospitalization in a population-based cohort of elderly patients with GI cancer. Journal of clinical oncology : official journal of the American Society of Clinical Oncology. 2014;32(31):3527-3533. 9. Dickinson H, Carico C, Nuno M, et al. Unplanned readmissions and survival following brain tumor surgery. J Neurosurg. 2015;122(1):61-68. 10. Fernandez FG, Khullar O, Force SD, et al. Hospital readmission is associated with poor survival after esophagectomy for esophageal cancer. Ann Thorac Surg. 2015;99(1):292-297. 11. Manzano JG, Gadiraju S, Hiremath A, Lin HY, Farroni J, Halm J. Unplanned 30-Day Readmissions in a General Internal Medicine Hospitalist Service at a Comprehensive Cancer Center. J Oncol Pract. 2015;11(5):410-415. 12. Saunders ND, Nichols SD, Antiporda MA, et al. Examination of unplanned 30-day readmissions to a comprehensive cancer hospital. J Oncol Pract. 2015;11(2):e177-181. 13. Shah SP, Xu T, Hooker CM, et al. Why are patients being readmitted after surgery for esophageal cancer? J Thorac Cardiovasc Surg. 2015;149(5):1384-1389; discussion 1389-1391. 14. Valero-Elizondo J, Kim Y, Prescott JD, et al. Incidence and Risk Factors Associated with Readmission After Surgical Treatment for Adrenocortical Carcinoma. J Gastrointest Surg. 2015;19(12):2154-2161. 15. Uppal S, Penn C, Del Carmen MG, Rauh-Hain JA, Reynolds RK, Rice LW. Readmissions after major gynecologic oncology surgery. Gynecol Oncol. 2016;141(2):287-292. 16. Wilbur MB, Mannschreck DB, Angarita AM, et al. Unplanned 30-day hospital readmission as a quality measure in gynecologic oncology. Gynecol Oncol. 2016;143(3):604-610. 17. Nakayama JM, Ou JP, Friedman C, Smolkin ME, Duska LR. The Risk Factors of Readmission in Postoperative Gynecologic Oncology Patients at a Single Institution. Int J Gynecol Cancer. 2015;25(9):1697-1703.

MUC ID	Measure Title	Rationale
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MUC17-181	Optimal Diabetes Care	Addressing Health Care Disparities Using Public Reporting Snowden, A. et al American Journal of Medical Quality August 2012 27 (4): 275-81
MUC17-194	Optimal Vascular Care	Risk Factor Optimization and Guideline-Directed Medical Therapy in US Veterans With Peripheral Arterial and Ischemic Cerebrovascular Disease Compared to Veterans With Coronary Heart Disease. Hira RS et al Am J Cardiol. 2016 Oct 15;118(8):1144-1149. doi: 10.1016/j.amjcard.2016.07.027. Epub 2016 Jul 29.
MUC17-195	Hospital-Wide All-Cause Risk Standardized Mortality Measure	Hospital-wide mortality has been the focus of several previous quality reporting initiatives in the U.S. and other countries. Prior efforts have met with some success and various challenges. Through our environmental scan and literature review, we identified multiple hospital-wide mortality measures reported at the state-level, and several at the health-system level. There is no hospital-wide mortality measure reported at the national-level in the United States.
MUC17-196	Hybrid Hospital-Wide All-Cause Risk Standardized Mortality Measure	Hospital-wide mortality has been the focus of several previous quality reporting initiatives in the U.S. and other countries. Prior efforts have met with some success and various challenges. Through our environmental scan and literature review, we identified multiple hospital-wide mortality measures reported at the state-level, and several at the health-system level. There is no hospital-wide mortality measure reported at the national-level in the United States.
MUC17-210	Hospital Harm Performance Measure: Opioid Related Adverse Respiratory Events	Opiates are critical for the management of pain in hospitalized patients. However, known side effects can lead to serious adverse effects if opiate-treated patients are not properly managed. Many types of opioid related adverse respiratory events (respiratory depression, respiratory arrest, cardiopulmonary arrest, etc.) can potentially be measured electronically. Additionally, naloxone is a strong surrogate to serious adverse events after opiate administration in hospitals, and surveillance and care in administration can reduce adverse events1. Citations: 1 Lee LA, Caplan RA, Stephens LS, et al. Postoperative opioid-induced respiratory depression: a closed claims analysis. Anesthesiology. 2015;122(3):659-665. 2 Jha A, Pronovost P. Toward a safer health care system: The critical need to improve measurement. JAMA. May 3, 2016; 315(17):1831-1832. 3 Makary MA, Daniel M. Medical Error-the third leading cause of death in the US. BMJ. 2016; 353; i2139: 1-5; Available at: http://www.bmj.com/content/bmj/353/bmj.i2139.full.pdf

MUC ID	Measure Title	Rationale
MUC17-215	Diabetes A1c Control (< 8.0)	Addressing Health Care Disparities Using Public Reporting Snowden, A. et al American Journal of Medical Quality August 2012 27 (4): 275-81
MUC17-223	Lumbar Spine Imaging for Low Back Pain	The specifications for OP-8 are based primarily on the American College of Radiology's Appropriateness Criteria® for low back pain. The 2015 publication of this Criteria® states that presentation of acute, subacute, or chronic uncomplicated low back pain or radiculopathy with no red flags and no prior management does not warrant imaging (using a CT or MRI). The Appropriateness Criteria® then details symptoms or diagnoses for which imaging may be appropriate, most of which are captured as measure exclusions for OP-8.
MUC17-233	Hospital Visits following General Surgery Ambulatory Surgical Center Procedures	Improving the quality of care provided at ASCs is a key priority in the context of growth in the number of ASCs and procedures performed in this setting. More than 60% of all medical or surgical procedures were performed at ASCs in 2006 -- a three-fold increase since the late 1990s.1 In 2013, more than 3.4 million Fee-for-Service (FFS) Medicare beneficiaries were treated at 5,364 Medicare-certified ASCs, and spending on ASC services by Medicare and its beneficiaries amounted to $3.7 billion.2 The patient population served at ASCs has increased not only in volume but also in age and complexity, which can be partially attributed to improvements in anesthetic care and innovations in minimally invasive surgical techniques.3,4 ASCs have become the preferred setting for the provision of low-risk surgical and medical procedures in the US, as many patients experience shorter wait times, prefer to avoid hospitalization, and are able to return rapidly to work.1 Therefore, in the context of growth in volume and diversity of procedures performed at ASCs, evaluating the quality of care provided at ASCs is increasingly important. In the literature, hospital visit rates following outpatient surgery vary from 0.5-9.0%, based on the type of surgery, outcome measured (admissions alone or admissions and ED visits), and timeframe for measurement after surgery.5-12 These hospital visits can occur due to a range of well-described adverse events, including major adverse events, such as bleeding, wound infection, septicemia, and venous thromboembolism. Patients also frequently report minor adverse events -- for example, uncontrolled pain, nausea, and vomiting -- that may result in unplanned acute care visits following surgery. Several factors make unanticipated hospital visits a priority quality indicator. Because ASC providers are not aware of all post-surgical hospital visits that occur among their patients, reporting this outcome will help to illuminate problems that may not be currently visible. In addition, the outcome of hospital visits is a broad, patient-centered outcome that reflects the full range of reasons leading to hospital use among patients undergoing same-day surgery. Public reporting of this outcome measure will provide ASCs with critical information and incentives to implement strategies to reduce unplanned hospital visits. Given that ASCs vary widely in their focus and the number of procedures that they perform, focusing on general surgery procedures will enable use of a quality measure to make fair comparisons of outcome rates across facilities that perform similar procedures. 1. Cullen KA, Hall MJ, Golosinskiy A, Statistics NCfH. Ambulatory surgery in the United States, 2006. US

MUC ID	Measure Title	Rationale
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MUC17-234	Ischemic Vascular Disease Use of Aspirin or Anti-platelet Medication	Risk Factor Optimization and Guideline-Directed Medical Therapy in US Veterans With Peripheral Arterial and Ischemic Cerebrovascular Disease Compared to Veterans With Coronary Heart Disease. Hira RS et al Am J Cardiol. 2016 Oct 15;118(8):1144-1149. doi: 10.1016/j.amjcard.2016.07.027. Epub 2016 Jul 29. Age-specific risks, severity, time course and outcome of bleeding on long-term anti-platelet treatment after vascular events: a population based cohort study. Linix, L et al Published online June 13, 2017 http://dx.doi.org/10.1016/S0140-6736(17)30770-5

MUC ID	Measure Title	Rationale
MUC17-235	Routine Cataract Removal with Intraocular Lens (IOL) Implantation	Among adults in the United States, cataracts constitute the leading cause of visual impairment, and cataract surgery is the only treatment option for removing cataracts, thereby reversing the visual impairment caused by cataracts (Tseng et al., 2016). Routine cataract surgery is the most frequent surgical procedure in the United States, including among Medicare beneficiaries (Pershing et al., 2016). A study found that there were about 2.3 million procedures for Medicare beneficiaries in 2014, and Medicare covers more than 80 percent of cataract surgeries in the United States (French et al., 2017). In addition, it was estimated that Medicare spends more than $3.4 billion annually on the treatment of cataracts, and cataract extraction with IOL implantation was the most common procedure (Brown et al., 2013). References: Martin, Anne B., Micah Hartman, Benjamin Washington, Aaron Catlin, and the National Health Expenditure Accounts Team. "National Health Spending: Faster Growth in 2015 as Coverage Expands and Utilization Increases." Health Affairs (December 2, 2016 2016). Kaiser Family Foundation. “A Primer on Medicare: Key Facts About the Medicare Program and the People it Covers.” (March 2015) Brown, G. C., M. M. Brown, A. Menezes, B. G. Busbee, H. B. Lieske, and P. A. Lieke. “Cataract Surgery Cost Utility Revisited in 2012: A New Economic Paradigm.” [In eng]. Ophthalmology 120, no. 12 (Dec 2013): 2367-76. French, D. D., C. E. Margo, J.J. Behrens, and P. B. Greenberg. “Rates of Routine Cataract Surgery among Medicare Beneficiaries.” [In eng]. JAMA Ophthalmol (Jan 05 2017). Pershing, S., D. E. Morrison, and T. Hernandez-Boussard. “Cataract Surgery Complications and Revisit Rates among Three States.” [In eng]. Am J Ophthalmol 171 (Nov 2016): 130-38. Tseng, V. L., F. Yu, F. Lum, and A. L. Coleman. “Cataract Surgery and Mortality in the United States Medicare Population.” [In eng]. Ophthalmology 123, no. 5 (May 2016): 1019-26.
MUC17-239	International Prostate Symptom Score (IPSS) or American Urological Association-Symptom Index (AUA-SI) change 6-12 months after diagnosis of Benign Prostatic Hyperplasia	The symptoms of BPH are LUTS symptoms. There are other disorders with similar symptoms and need to be excluded. History, physical examination and testing are required prior to a diagnosis of BPH. IPSS by itself is not a reliable diagnostic tool for LUTS suggestive of BPH, but serves as a quantitative measure of LUTS after the diagnosis is established (DSilva,2014) Medical and surgical interventions for BPH recommend a follow up IPSS evaluation to determine effectiveness of treatment. IPSS should be evaluated at the time of diagnosis and after definitive treatment.

MUC ID	Measure Title	Rationale
MUC17-241	Percentage of Prevalent Patients Waitlisted (PPPW)	A measure focusing on the waitlisting process is appropriate for improving access to kidney transplantation for several reasons. First, waitlisting is a necessary step prior to potential receipt of a deceased donor kidney. Second, dialysis facilities exert substantial control over the process of waitlisting. This includes proper education of dialysis patients on the option for transplant, referral of appropriate patients to a transplant center for evaluation, assisting patients with completion of the transplant evaluation process, and optimizing the health and functional status of patients in order to increase their candidacy for transplant waitlisting. These types of activities are included as part of the conditions for coverage for Medicare certification of ESRD dialysis facilities. In addition, dialysis facilities can also help maintain patients on the wait list through assistance with ongoing evaluation activities and by optimizing health and functional status. Finally, wide regional variations in waitlisting rates highlight substantial room for improvement for this process measure [1,2,3]. This measure focuses specifically on the prevalent dialysis population, examining waitlisting status monthly for each patient. This allows evaluation and encouragement of ongoing waitlisting of patients beyond the first year of dialysis initiation who have not yet been listed. Patients may not be ready, either psychologically or due to their health status, to consider transplantation early after initiation of dialysis and many choose to undergo evaluation for transplantation only after years on dialysis. In addition, as this measure assesses monthly waitlisting status of patients, it also evaluates and encourages maintenance of patients on the waitlist. This is an important area to which dialysis facilities can contribute through ensuring patients remain healthy, and complete any ongoing testing activities required to remain on the waitlist. 1. Ashby VB, Kalbfleisch JD, Wolfe RA, et al. Geographic variability in access to primary kidney transplantation in the United States, 1996-2005. American Journal of Transplantation 2007; 7 (5 Part 2):1412-1423. Abstract: This article focuses on geographic variability in patient access to kidney transplantation in the United States. It examines geographic differences and trends in access rates to kidney transplantation, in the component rates of wait-listing, and of living and deceased donor transplantation. Using data from Centers for Medicare and Medicaid Services and the Organ Procurement and Transplantation Network/Scientific Registry of Transplant Recipients, we studied 700,000+ patients under 75, who began chronic dialysis treatment, received their first living donor kidney transplant, or were placed on the waiting list pre-emptively. Relative rates of wait-listing and transplantation by State were calculated using Cox regression models, adjusted for patient demographics. There were geographic differences in access to the kidney waiting list and to a kidney transplant. Adjusted wait-list rates ranged from 37% lower to 64% higher than the national average. The living donor rate ranged from 57% lower to 166% higher, while the deceased donor transplant rate ranged from 60% lower to 150% higher than the national average. In general, States with higher wait-listing rates tended to have lower transplantation rates and States with lower wait-listing rates had higher transplant rates. Six States demonstrated both high wait-listing and deceased donor transplantation rates while six

MUC ID	Measure Title	Rationale
		others, plus D.C. and Puerto Rico, were below the national average for both parameters. 2. Satayathum S, Pisoni RL, McCullough KP, et al. Kidney transplantation and wait-listing rates from the international Dialysis Outcomes and Practice Patterns Study (DOPPS). Kidney Intl 2005 Jul; 68 (1):330-337. Abstract: BACKGROUND: The international Dialysis Outcomes and Practice Patterns Study (DOPPS I and II) allows description of variations in kidney transplantation and wait-listing from nationally representative samples of 18- to 65-year-old hemodialysis patients. The present study examines the health status and socioeconomic characteristics of United States patients, the role of for-profit versus not-for-profit status of dialysis facilities, and the likelihood of transplant wait-listing and transplantation rates. METHODS: Analyses of transplantation rates were based on 5267 randomly selected DOPPS I patients in dialysis units in the United States, Europe, and Japan who received chronic hemodialysis therapy for at least 90 days in 2000. Left-truncated Cox regression was used to assess time to kidney transplantation. Logistic regression determined the odds of being transplant wait-listed for a cross-section of 1323 hemodialysis patients in the United States in 2000. Furthermore, kidney transplant wait-listing was determined in 12 countries from cross-sectional samples of DOPPS II hemodialysis patients in 2002 to 2003 (N= 4274). RESULTS: Transplantation rates varied widely, from very low in Japan to 25-fold higher in the United States and 75-fold higher in Spain (both P values <0.0001). Factors associated with higher rates of transplantation included younger age, nonblack race, less comorbidity, fewer years on dialysis, higher income, and higher education levels. The likelihood of being wait-listed showed wide variation internationally and by United States region but not by for-profit dialysis unit status within the United States. CONCLUSION: DOPPS I and II confirmed large variations in kidney transplantation rates by country, even after adjusting for differences in case mix. Facility size and, in the United States, profit status, were not associated with varying transplantation rates. International results consistently showed higher transplantation rates for younger, healthier, better-educated, and higher income patients. 3. Patzer RE, Plantinga L, Krisher J, Pastan SO. Dialysis facility and network factors associated with low kidney transplantation rates among United States dialysis facilities. Am J Transplant. 2014 Jul; 14(7):1562-72. Abstract: Variability in transplant rates between different dialysis units has been noted, yet little is known about facility-level factors associated with low standardized transplant ratios (STRs) across the United States End-stage Renal Disease (ESRD) Network regions. We analyzed Centers for Medicare & Medicaid Services Dialysis Facility Report data from 2007 to 2010 to examine facility-level factors associated with low STRs using multivariable mixed models. Among 4098 dialysis facilities treating 305 698 patients, there was wide variability in facility-level STRs across the 18 ESRD Networks. Four-year average STRs ranged from 0.69 (95% confidence interval [CI]: 0.64-0.73) in Network 6 (Southeastern Kidney Council) to 1.61 (95% CI: 1.47-1.76) in Network 1 (New England). Factors significantly associated with a lower Standardized Transplantation Ratio(STR) ($p < 0.0001$) included for-profit status, facilities with higher percentage black patients, patients with no health insurance and patients with diabetes. A greater number of facility staff, more transplant

MUC ID	Measure Title	Rationale
		centers per 10 000 ESRD patients and a higher percentage of patients who were employed or utilized peritoneal dialysis were associated with higher STRs. The lowest performing dialysis facilities were in the Southeastern United States. Understanding the modifiable facility-level factors associated with low transplant rates may inform interventions to improve access to transplantation.
MUC17-245	Standardized First Kidney Transplant Waitlist Ratio for Incident Dialysis Patients (SWR)	A measure focusing on the waitlisting process is appropriate for improving access to kidney transplantation for several reasons. First, waitlisting is a necessary step prior to potential receipt of a deceased donor kidney (receipt of a living donor kidney is also accounted for in the measure). Second, dialysis facilities exert substantial control over the process of waitlisting. This includes proper education of dialysis patients on the option for transplant, referral of appropriate patients to a transplant center for evaluation, assisting patients with completion of the transplant evaluation process, and optimizing the health and functional status of patients in order to increase their candidacy for transplant waitlisting. These types of activities are included as part of the conditions for coverage for Medicare certification of ESRD dialysis facilities. Finally, wide regional variations in waitlisting rates highlight substantial room for improvement for this process measure [1,2,3]. This measure additionally focuses specifically on the population of patients incident to dialysis, examining for waitlist or living donor transplant events occurring within a year of dialysis initiation. This will evaluate and encourage rapid attention from dialysis facilities to waitlisting of patients to ensure early access to transplantation. 1. Ashby VB, Kalbfleisch JD, Wolfe RA, et al. Geographic variability in access to primary kidney transplantation in the United States, 1996-2005. American Journal of Transplantation 2007; 7 (5 Part 2):1412-1423. Abstract: This article focuses on geographic variability in patient access to kidney transplantation in the United States. It examines geographic differences and trends in access rates to kidney transplantation, in the component rates of wait-listing, and of living and deceased donor transplantation. Using data from Centers for Medicare and Medicaid Services and the Organ Procurement and Transplantation Network/Scientific Registry of Transplant Recipients, we studied 700,000+ patients under 75, who began chronic dialysis treatment, received their first living donor kidney transplant, or were placed on the waiting list pre-emptively. Relative rates of wait-listing and transplantation by State were calculated using Cox regression models, adjusted for patient demographics. There were geographic differences in access to the kidney waiting list and to a kidney transplant. Adjusted wait-list rates ranged from 37% lower to 64% higher than the national average. The living donor rate ranged from 57% lower to 166% higher, while the deceased donor transplant rate ranged from 60% lower to 150% higher than the national average. In general, States with higher wait-listing rates tended to have lower transplantation rates and States with lower wait-listing rates had higher transplant rates. Six States demonstrated both high wait-listing and deceased donor transplantation rates while six others, plus D.C. and Puerto Rico, were below the national average for both parameters. 2. Satayathum S, Pisoni RL, McCullough KP, et al. Kidney transplantation and wait-listing rates from the

MUC ID	Measure Title	Rationale
		international Dialysis Outcomes and Practice Patterns Study (DOPPS). Kidney Intl 2005 Jul; 68 (1):330-337. Abstract: BACKGROUND: The international Dialysis Outcomes and Practice Patterns Study (DOPPS I and II) allows description of variations in kidney transplantation and wait-listing from nationally representative samples of 18- to 65-year-old hemodialysis patients. The present study examines the health status and socioeconomic characteristics of United States patients, the role of for-profit versus not-for-profit status of dialysis facilities, and the likelihood of transplant wait-listing and transplantation rates. METHODS: Analyses of transplantation rates were based on 5267 randomly selected DOPPS I patients in dialysis units in the United States, Europe, and Japan who received chronic hemodialysis therapy for at least 90 days in 2000. Left-truncated Cox regression was used to assess time to kidney transplantation. Logistic regression determined the odds of being transplant wait-listed for a cross-section of 1323 hemodialysis patients in the United States in 2000. Furthermore, kidney transplant wait-listing was determined in 12 countries from cross-sectional samples of DOPPS II hemodialysis patients in 2002 to 2003 (N= 4274). RESULTS: Transplantation rates varied widely, from very low in Japan to 25-fold higher in the United States and 75-fold higher in Spain (both P values <0.0001). Factors associated with higher rates of transplantation included younger age, nonblack race, less comorbidity, fewer years on dialysis, higher income, and higher education levels. The likelihood of being wait-listed showed wide variation internationally and by United States region but not by for-profit dialysis unit status within the United States. CONCLUSION: DOPPS I and II confirmed large variations in kidney transplantation rates by country, even after adjusting for differences in case mix. Facility size and, in the United States, profit status, were not associated with varying transplantation rates. International results consistently showed higher transplantation rates for younger, healthier, better-educated, and higher income patients. 3. Patzer RE, Plantinga L, Krisher J, Pastan SO. Dialysis facility and network factors associated with low kidney transplantation rates among United States dialysis facilities. Am J Transplant. 2014 Jul; 14(7):1562-72. Abstract: Variability in transplant rates between different dialysis units has been noted, yet little is known about facility-level factors associated with low standardized transplant ratios (STRs) across the United States End-stage Renal Disease (ESRD) Network regions. We analyzed Centers for Medicare & Medicaid Services Dialysis Facility Report data from 2007 to 2010 to examine facility-level factors associated with low STRs using multivariable mixed models. Among 4098 dialysis facilities treating 305 698 patients, there was wide variability in facility-level STRs across the 18 ESRD Networks. Four-year average STRs ranged from 0.69 (95% confidence interval [CI]: 0.64-0.73) in Network 6 (Southeastern Kidney Council) to 1.61 (95% CI: 1.47-1.76) in Network 1 (New England). Factors significantly associated with a lower STR ($p < 0.0001$) included for-profit status, facilities with higher percentage black patients, patients with no health insurance and patients with diabetes. A greater number of facility staff, more transplant centers per 10 000 ESRD patients and a higher percentage of patients who were employed or utilized peritoneal dialysis were associated with higher STRs. The lowest performing dialysis facilities were in the Southeastern United States. Understanding the

MUC ID	Measure Title	Rationale
		modifiable facility-level factors associated with low transplant rates may inform interventions to improve access to transplantation.
MUC17-256	Screening/Surveillance Colonoscopy	According to the American Cancer Society, colorectal cancer (CRC) is the third most diagnosed cancer among adults in the United States, with an estimated 135,430 new cases of CRC to be diagnosed in 2017, and with about 58 percent of the cases occurring in adults ages 65 and older (Siegel et al., 2017). The CRC screening guidelines released by the United States Preventive Services Task Force (USPSTF) recommend either a screening colonoscopy every 10 years or other screening methods, for adults ages 50 through 75 who are at average risk for developing CRC (Bibbins-Domingo et al., 2016). Although there are a number of CRC screening methods available, screening colonoscopy has become the most common CRC screening test in the United States (Sharaf and Ladabaum, 2013). In the past 10 years, the proportion of Medicare beneficiaries ages 65 and older who have received a colonoscopy since qualifying for Medicare at age 65 have increased from 25 percent in 2000 to 63 percent in 2013 (National Center for Health Statistics, 2016). A study found that in 2012, an estimated $239 million worth of professional fees were paid by Medicare to physicians for performing about 1.1 million screening and diagnostic colonoscopies (Mehta and Manaker, 2014). References: Siegel, R. L., K. D. Miller, S. A. Fedewa, D. J. Ahnen, R. G. Meester, A. Barzi, and A. Jemal. “Colorectal Cancer Statistics, 2017.” [In eng]. CA Cancer J Clin (Mar 1 2017). Bibbins-Domingo, K., D. C. Grossman, S.J. Curry, K. W. Davidson, J. W. Epling, Jr., F. A. Garcia, M. W. Gillman, et al. “Screening for Colorectal Cancer: Us Preventive Services Task Force Recommendation Statement.” [In eng]. JAMA 315, no. 23 (Jun 21, 2016): 2564-75. Sharaf, Ravi N., and Uri Ladabaum. “Comparative Effectiveness and Cost-Effectiveness of Screening Colonoscopy Vs. Sigmoidoscopy and Alternative Strategies.” The American Journal of Gastroenterology 108, no. 1 (2013): 120-32. In Health, United States, 2015: With Special Feature on Racial and Ethnic Health Disparities. Health, United States. Hyattsville, MD, 2016. Mehta, Shivan J., and Scott Manaker. “Should We Pay Doctors Less for Colonoscopy?”. American Journal of Managed Care 20, no. 9 (2014): e365-e68.
MUC17-258	CoreQ: Short Stay Discharge Measure	Collecting satisfaction information from skilled nursing facility (SNF) patients is more important now than ever. We have seen a philosophical change in healthcare that now includes the patient and their preferences as an integral part of the system of care. The Institute of Medicine (IOM) endorses this change by putting the patient as central to the care system (IOM, 2001). For this philosophical change to person-centered care to succeed, we have to be able to measure patient satisfaction for these three reasons: (1) Measuring satisfaction is necessary to understand patient preferences. (2) Measuring and reporting satisfaction with care helps patients and their families choose and trust a health care facility.

MUC ID	Measure Title	Rationale
		(3) Satisfaction information can help facilities improve the quality of care they provide. The implementation of person-centered care in SNFs has already begun, but there is still room for improvement. The Centers for Medicare and Medicaid Services (CMS) demonstrated interest in consumers' perspective on quality of care by supporting the development of the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey for patients in nursing facilities (Sangl et al., 2007). Further supporting person-centered care and resident satisfaction are ongoing organizational change initiatives. These include: the Advancing Excellence in America's Nursing Homes campaign (2006), which lists person-centered care as one of its goals; Action Pact, Inc., which provides workshops and consultations with nursing facilities on how to be more person-centered through their physical environment and organizational structure; and Eden Alternative, which uses education, consultation, and outreach to further person-centered care in nursing facilities. All of these initiatives have identified the measurement of resident satisfaction as an essential part in making, evaluating, and sustaining effective clinical and organizational changes that ultimately result in a person-centered philosophy of care. The importance of measuring resident satisfaction as part of quality improvement cannot be stressed enough. Quality improvement initiatives, such as total quality management (TQM) and continuous quality improvement (CQI), emphasize meeting or exceeding "customer" expectations. William Deming, one of the first proponents of quality improvement, noted that "one of the five hallmarks of a quality organization is knowing your customer's needs and expectations and working to meet or exceed them" (Deming, 1986). Measuring resident satisfaction can help organizations identify deficiencies that other quality metrics may struggle to identify, such as communication between a patient and the provider. As part of the U.S. Department of Commerce renowned Baldrige Criteria for organizational excellence, applicants are assessed on their ability to describe the links between their mission, key customers, and strategic position. Applicants are also required to show evidence of successful improvements resulting from their performance improvement system. An essential component of this process is the measurement of customer, or resident, satisfaction (Shook & Chenoweth, 2012). The CoreQ: Short Stay Discharge questionnaire can strategically help nursing facilities achieve organizational excellence and provide high quality care by being a tool that targets a unique and growing patient population. Over the past several decades, care in nursing facilities has changed substantially. Statistics show that more than half of all elders cared for in nursing homes are now discharged home (approximately 1.6 million residents; CMS, 2009). Moreover, when satisfaction information from current residents (i.e., long stay residents) is compared with those of elders discharged home, substantial differences exist (Castle, 2007). This indicates that long stay and short stay residents are different populations with different needs in the nursing facilities. Moreover, residents are more likely to follow medical advice when they rate their care as satisfactory (Hall, Milburn, Roter, & Daltroy, 1998). Thus, the CoreQ: Short Stay Discharge questionnaire measure is needed to improve the care for short stay SNF patients. Furthermore, improving the care for short stay nursing home patients is tenable. A review of the literature on satisfaction surveys in nursing facilities (Castle, 2007) concluded that substantial improvements in

MUC ID	Measure Title	Rationale
		resident satisfaction could be made in many nursing facilities by improving care (i.e., changing either structural or process aspects of care). This was based on satisfaction scores ranging from 60 to 80% on average. It is worth noting, few other generalizations could be made because existing instruments used to collect satisfaction information are not standardized. Thus, bench-marking scores and comparison scores (i.e., best in class) were difficult to establish. The CoreQ: Short Stay Discharge measure has considerable relevance in establishing benchmarking scores and comparison scores. This measure's relevance is furthered by recent federal legislative actions. The Affordable Care Act of 2010 requires the Secretary of Health and Human Services (HHS) to implement a Quality Assurance & Performance Improvement Program (QAPI) within nursing facilities. This means all nursing facilities have increased accountability for continuous quality improvement efforts. In CMS's "QAPI at a Glance" document there are references to customer-satisfaction surveys and organizations utilizing them to identify opportunities for improvement. Lastly, the new "Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities" proposed rule includes language purporting the importance of satisfaction and measuring satisfaction. CMS states "CMS is committed to strengthening and modernizing the nation's health care system to provide access to high quality care and improved health at lower cost. This includes improving the patient experience of care, both quality and satisfaction, improving the health of populations, and reducing the per capita cost of health care." There are also other references in proposed rules speaking to improving resident satisfaction and increasing person-centered care (Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities, 2015). The CoreQ: Short Stay Discharge measure has considerable applicability to both of these initiatives. References: Castle, N.G. (2007). A literature review of satisfaction instruments used in long-term care settings. Journal of Aging and Social Policy, 19(2), 9-42. CMS (2009). Skilled Nursing Facilities Non Swing Bed - Medicare National Summary. http://www.cms.hhs.gov/MedicareFeeforSvcPartsAB/Downloads/NationalSum2007.pdf CMS, University of Minnesota, and Stratis Health. QAPI at a Glance: A step by step guide to implementing quality assurance and performance improvement (QAPI) in your nursing home. https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/Downloads/QAPIAtaGlance.pdf. Deming, W.E. (1986). Out of the crisis. Cambridge, MA. Massachusetts Institute of Technology, Center for Advanced Engineering Study. Hall J, Milburn M, Roter D, Daltroy L. Why are sicker patients less satisfied with their medical care? Tests of two explanatory models. Health Psychol. 1998;17(1):70-75. Institute of Medicine (2001). Improving the Quality of Long Term Care, National Academy Press, Washington, D.C., 2001. Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities; Department of

MUC ID	Measure Title	Rationale
		Health and Human Services. 80 Fed. Reg. 136 (July 16, 2015) (to be codified at 42 CFR Parts 405, 431, 447, et al.). MedPAC. (2015). Report to the Congress: Medicare Payment Policy. http://www.medpac.gov/docs/default-source/reports/mar2015_entirereport_revised.pdf. Sangl, J., Bernard, S., Buchanan, J., Keller, S., Mitchell, N., Castle, N.G., Cosenza, C., Brown, J., Sekscenski, E., and Larwood, D. (2007). The development of a CAHPS instrument for nursing home residents. Journal of Aging and Social Policy, 19(2), 63-82. Shook, J., & Chenoweth, J. (2012, October). 100 Top Hospitals CEO Insights: Adoption Rates of Select Baldrige Award Practices and Processes. Truven Health Analytics. http://www.nist.gov/baldrige/upload/100-Top-Hosp-CEO-Insights-RB-final.pdf.
MUC17-261	Knee Arthroplasty	An estimated 45 percent of adults in the United States are at risk for developing knee osteoarthritis during their lifetimes, and as a result, the rate of Medicare enrollees receiving knee arthroplasties, or knee replacements, has been increasing. Between 1991 and 2010, the number of knee arthroplasties increased from 93,230 to 243,802, an increase of more than 160 percent (Cram et al., 2012). A 2012 study observed that 615,050 knee arthroplasties were performed in 2008, a 134 percent increase from 1999, and predicted continued increases at a rate greater than predicted by population growth and prevalence of obesity (Losina et al., 2012). References: Cram, Peter, Xin Lu, Stephen L. Kates, Jasvinder A. Singh, Yue Li, and Brian R. Wolf. "Total knee arthroplasty volume, utilization, and outcomes among Medicare beneficiaries, 1991-2010." Jama 308, no. 12 (2012): 1227-1236. Losina, E., T. S. Thornhill, B. N. Rome, J. Wright, and J. N. Katz. "The Dramatic Increase in Total Knee Replacement Utilization Rates in the United States Cannot Be Fully Explained by Growth in Population Size and the Obesity Epidemic." [In eng]. J Bone Joint Surg Am 94, no. 3 (Feb 01 2012): 201-7.
MUC17-262	ST-Elevation Myocardial Infarction (STEMI) with Percutaneous Coronary Intervention (PCI)	The ST-Elevation Myocardial Infarction (STEMI) with Percutaneous Coronary Intervention (PCI) Cost Measure represents one of the most common types of hospitalization among Medicare beneficiaries and is associated with high mortality. It was estimated that acute myocardial infarction (AMI) accounted for $11.5 billion in total hospital costs in 2011. There are approximately 580,000 new incidences of AMI each year in the US and 210,000 recurrent incidences (AHA, 2017). The average age at the first AMI is 65.3 years for males and 71.8 years for females, so it is a condition that affects the Medicare-aged population. The high prevalence and considerable morbidity and mortality affect beneficiaries and their family members and caregivers. It also exacts a significant economic burden on the healthcare system that has been increasing over time. A 2013 study found that Medicare spending per patient with an AMI has increased: Medicare spending increased by 16.5 percent when comparing a sample of beneficiaries with AMI from 1998 to 1999 to a sample of beneficiaries with AMI in 2008. Most of the observed expenditure growth resulted from the increased use of home health agencies, hospices, durable medical equipment, skilled nursing facilities, and

MUC ID	Measure Title	Rationale
		inpatient services that occurred after the 30 day mark following an AMI and out of the control of Medicare's bundle payment system (Likosky et al., 2013). References: Benjamin, Emelia J., Michael J. Blaha, Stephanie E. Chiuve, Mary Cushman, Sandeep R. Das, Rajat Deo, Sarah D. de Ferranti et al. "Heart disease and stroke statistics--2017 update: a report from the American Heart Association." Circulation 135, no. 10 (2017): e146-e603. Likosky, Donald S., Weiping Zhou, David J. Malenka, William B. Borden, Brahmajee K. Nallamothu, and Jonathan S. Skinner. "Growth in Medicare expenditures for patients with acute myocardial infarction: a comparison of 1998 through 1999 and 2008." JAMA internal medicine 173, no. 22 (2013): 2055-2061.
MUC17-263	Revascularization for Lower Extremity Chronic Critical Limb Ischemia	Roughly 8.5 million people in the United States are affected by Peripheral Vascular Disease (PVD), and according to the CDC this includes between 12 and 20 percent of individuals over age 60 (CDC, 2017). Additionally, five percent of Americans over the age of 50 have PVD (NIH, 2017). A host of factors increase the risk of PVD. For example, the condition affects one in three diabetics and one in three people with heart disease, and the risk of PVD increases with high blood pressure and high cholesterol (NIH, 2017). PVD is treated by a variety of methods including lifestyle change, such as exercise, cessation of smoking, and weight reduction, or for cases unresponsive to these changes alone, medication to lower blood pressure and cholesterol or dissolve clots, or surgical procedures such as revascularization (NIH, 2017).The total costs of PVD in the United States are over $21 billion annually, and PVD is associated with reduced quality of life and increased risk of amputation and death (Ogilvie et al., 2017). A subset of PVD patients has critical limb ischemia (CLI) (in which blood flow to the extremities is greatly reduced, causing pain, ulcers, or sores), and this is considered the end stage of PVD, in which revascularization is necessary to prevent the dysfunction and loss of a limb (Farber and Eberhardt, 2016). The costs of CLI in the United States are over $4 billion, and CLI patients have an annual cardiovascular event rate of 5 percent to 7 percent, as well as a 2-year mortality rate of 40 percent (Ibid). References: CDC. "Peripheral Arterial Disease (PAD) Fact Sheet." https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_pad.htm [Accessed July 29, 2017]. NIH. "Facts About Peripheral Arterial Disease (P.A.D.)." NIH Publication No. 06-5837. (Aug 2006). https://www.nhlbi.nih.gov/health/educational/pad/docs/pad_extfctsht_general_508.pdf [Accessed July 29, 2017]. Ogilvie, R.P., P.L. Lutsey, G. Heiss, A.R. Folsom, and L.M. Steffen. "Dietary intake and peripheral arterial disease incidence in middle-aged adults: the Atherosclerosis Risk in Communities (ARIC) Study." [In eng]. The American Journal of Clinical Nutrition. 105, no. 3 (Mar 2017): 651-659. Farber, A., R.T. Eberhardt. "The Current State of Critical Limb Ischemia: A Systematic Review." [In eng]. JAMA Surgery. 151, no. 11 (Nov 2016): 1070-1077.

MUC ID	Measure Title	Rationale
MUC17-310	Zoster (Shingles) Vaccination	The CDC ACIP first recommended the zoster vaccine in 2008. Harpaz R, Ortega-Sanchez IR, Seward JF. Prevention of herpes zoster: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2008;57(No. RR-5) states that "Zoster is a localized, generally painful cutaneous eruption that occurs most frequently among older adults and immunocompromised persons. ...Approximately one in three persons will develop zoster during their lifetime, resulting in an estimated 1 million episodes in the United States annually. A common complication of zoster is postherpetic neuralgia (PHN), a chronic, often debilitating pain condition that can last months or even years. The risk for PHN in patients with zoster is 10%-18%. Another complication of zoster is eye involvement, which occurs in 10%-25% of zoster episodes and can result in prolonged or permanent pain, facial scarring, and loss of vision. Approximately 3% of patients with zoster are hospitalized; many of these episodes involved persons with one or more immunocompromising condition." The 2014 update on the recommendation published in MMWR, August 22, 2014, Vol 63, 33:729-731 cited two studies that have evaluated the short-term efficacy of the zoster vaccine in adults aged â‰¥60 years. The shingles prevention study, a randomized controlled trial, followed 38,546 subjects for up to 4.9 years after vaccination and found a vaccine efficacy of 51.3% (CI = 44.2%-57.6%) for prevention of herpes zoster and 66.5% (CI = 47.5%-79.2%) for prevention of PHN. The short-term persistence substudy followed a subset of 14,270 subjects primarily 4 to 7 years after vaccination and found a vaccine efficacy of 39.6% (CI = 18.2%-55.5%) for prevention of herpes zoster and 60.1% (CI = -9.8%-86.7%) for prevention of PHN. The NQF deems zoster vaccine as a priority in its report, Priority Setting for Healthcare Performance Measurement: Addressing Performance Measure Gaps for Adult Immunizations FINAL REPORT AUGUST 15, 2014. http://www.qualityforum.org/Publications/2014/08/Adult_Immunizations_Final_Report.aspx
MUC17-345	Patient reported and clinical outcomes following ilio-femoral venous stenting	The financial burden of chronic venous disease on the health-care system is enormous, with recent estimates placing the cost of CVD treatment at $3 billion per year in the United States, or up to 2% of the total health-care budget of all Western countries. The post-thrombotic syndrome (PTS) is a frequent and important complication of deep venous thrombosis (DVT) with as many as two-thirds of patients developing symptoms of pain, edema, hyperpigmentation, or ulceration. Ilio-femoral vein stenting has become a safe and effective alternative to traditional open surgery to correct iliac vein obstruction as a cause of post thrombotic syndrome. A RAND evidence review in 2013 reported relief of pain (86-94%), relief from swelling (66%-89%) and healing of venous ulcers (55-89%) in published studies, thereby improving quality of life. The RAND summary concluded the benefits outweigh the risks (1B). The Venous Clinical Severity Score (VCSS) replaced the older CEAP (clinical grade, etiology, anatomy, pathophysiology) grading system to assess the severity of chronic venous disease. Unlike the CEAP system, the venous clinical severity score is more useful in the assessment of changes in venous disease and thus is

MUC ID	Measure Title	Rationale
		most appropriate to apply to patients undergoing treatment to assess outcomes from therapy, such as ilio-femoral venous stenting. By encouraging the routine use of the venous clinical severity score, centers will be able to objectively assess the intermediate outcome of venous stenting on the symptoms and signs of chronic venous disease. The VCSS score focuses more on the clinical signs, rather than patient symptoms, which was demonstrated to be a more useful marker for subtle changes in the severity of venous disease. o Analysis of patients from the American Venous Forum (AVF), National Venous Screening Program (NVSP) data registry from 2007 to 2009 concluded that VCSS has more global application in determining overall severity of venous disease than other venous assessment tools. (J Vasc Surg 2011;54:2S-9S.) o The Chronic Venous Insufficiency Questionnaire, the Venous Insufficiency Epidemiological and Economic Study, the Aberdeen Varicose Vein Questionnaire, and the Charing Cross Venous ulceration questionnaire, among others, are validated disease-specific instruments to assess patient symptoms before and after iliofemoral venous stenting in patient with deep venous system abnormalities. These surveys are complimentary to commonly used clinical scoring systems including the venous clinical severity score or the villalta score. Indeed one study suggests that combination of the Villalta score with a venous disease-specific quality-of-life questionnaire, to be considered the "reference standard" for the diagnosis and classification of post-thrombotic syndrome (Soosainathan A, Moore HM, Gohel MS, Davies AH. Scoring systems for the post-thrombotic syndrome. J Vasc Surg. 2013 Jan;57(1):254-61.) o In addition, this measure is supported by the following quality improvement guideline and position statement: 1. Vendantham et al. Society of Interventional Radiology Position Statement: Treatment of Acute Iliofemoral Deep Vein Thrombosis with Use of Adjunctive Catheter-Directed Intrathrombus Thyombolysis. JVIR 2006; 17: 417-434. 2. Vendantham et al. Quality improvement guidelines for the treatment of lower-extremity deep venous thrombosis with use of endovascular thrombus removal. JVIR 2014; 25: 1317-1325.
MUC17-359	Elective Outpatient Percutaneous Coronary Intervention (PCI)	Percutaneous coronary intervention (PCI) is one of the most common major medical procedures performed in the United States. PCI procedures are performed in 600,000 patients each year and have the highest aggregate costs of all cardiovascular procedures, totaling about $10 billion annually (Amin et al., 2017). Between 2005 and 2010, PCI prices increased by 19.1 percent nationally, significantly more than the rate of inflation during the same period (Dor et al., 2015). Approximately 25 percent of patients treated with PCI are 75 years or older and 12 percent are 80 years or older. This growing trend of the use of PCI in the elderly does not appear to be slowing (Vandermolen et al., 2015). With increased age, there are also greater risks for procedural complications, including bleeding (Wang et al., 2011). Other notable complications include vascular compromise (Anderson et al., 2002), stroke, recurrent infarction (Lee 2015), and death (Aggawal et al., 2013). To focus on one type of complication affecting the Medicare population, the risk of bleeding remains highest in older adults (Dodson & Maurer, 2011). This is associated with increased morbidity, mortality, lengthened hospitalization, transfusions, and other significant costs following PCI. (Dauerman et

MUC ID	Measure Title	Rationale
		al., 2011). References: Amin, Amit P., Mark Patterson, John A. House, Helmut Giersiefen, John A. Spertus, Dmitri V. Baklanov, Adnan K. Chhatriwalla et al. "Costs associated with access site and same-day discharge among Medicare beneficiaries undergoing percutaneous coronary intervention: an evaluation of the current percutaneous coronary intervention care pathways in the United States." JACC: Cardiovascular Interventions 10, no. 4 (2017): 342-351. Dor, Avi, William E. Encinosa, and Kathleen Carey. "Medicare's hospital compare quality reports appear to have slowed price increases for two major procedures." Health affairs 34, no. 1 (2015): 71-77. Vandermolen, Sebastian, Jane Abbott, and Kalpa De Silva. "What's age got to do with it? A review of contemporary revascularization in the elderly." Current cardiology reviews 11, no. 3 (2015): 199-208. Wang, Tracy Y., Antonio Gutierrez, and Eric D. Peterson. "Percutaneous coronary intervention in the elderly." Nature Reviews Cardiology 8, no. 2 (2011): 79-90. Anderson, H. Vernon, Richard E. Shaw, Ralph G. Brindis, Kathleen Hewitt, Ronald J. Krone, Peter C. Block, Charles R. McKay, and William S. Weintraub. "A contemporary overview of percutaneous coronary interventions: the American College of Cardiology--National Cardiovascular Data Registry (ACC--NCDR)." Journal of the American College of Cardiology39, no. 7 (2002): 1096-1103. Lee, Joo Myung, Doyeon Hwang, Jonghanne Park, Kyung-Jin Kim, Chul Ahn, and Bon-Kwon Koo. "Percutaneous coronary intervention at centers with and without on-site surgical backup: an updated meta-analysis of 23 studies." Circulation (2015): CIRCULATIONAHA-115. Aggarwal, Bhuvnesh, Stephen G. Ellis, A. Michael Lincoff, Samir R. Kapadia, Joseph Cacchione, Russell E. Raymond, Leslie Cho et al. "Cause of death within 30 days of percutaneous coronary intervention in an era of mandatory outcome reporting." Journal of the American College of Cardiology 62, no. 5 (2013): 409-415. Dodson, John A., and Mathew S. Maurer. "Changing nature of cardiac interventions in older adults." Aging health 7, no. 2 (2011): 283-295. Dauerman, Harold L., Sunil V. Rao, Frederic S. Resnic, and Robert J. Applegate. "Bleeding avoidance strategies." Journal of the American College of Cardiology 58, no. 1 (2011): 1-10.
MUC17-363	Intracranial Hemorrhage or Cerebral Infarction	Intracranial hemorrhage and ischemic stroke are common conditions that can have serious consequences for patients and their families, such as death or permanent disability. Approximately 780,000 Americans suffer a new or recurring stroke every year (Guilhaume et al., 2010). Strokes are the leading cause of permanent disability in adults and the third leading cause of death in the US, with a 30 day mortality rate of around 8 percent for patients who have suffered an ischemic stroke and 20 percent in the case of a hemorrhagic stroke (Birenbaum 2010, Collins et al., 2003). Elderly patients are particularly at risk after suffering from either an ischemic or hemorrhagic stroke with studies showing increased mortality risk in patients age 65 years or older with an ischemic stroke and in patients age 75 years or older with a hemorrhagic stroke. The 30-day mortality rate for hemorrhagic stroke is twice that of the rate for ischemic

MUC ID	Measure Title	Rationale
		stroke (Collins et al., 2003). Finally, a 2010 study estimated that ischemic strokes alone, which represent a majority of overall strokes, were responsible for close to $65.5 billion of healthcare spending in the US given the need for long-term care after the events (Guilhaume et al., 2010). References: Guilhaume, Chantal, Delphine Saragoussi, John Cochran, Clément François, and Mondher Toumi. "Modeling Stroke Management: A Qualitative Review of Cost-Effectiveness Analyses." The European Journal of Health Economics : HEPAC 11, no. 4 (August 2010): 419-26. Birenbaum, Dale. "Emergency Neurological Care of Strokes and Bleeds." Journal of Emergencies, Trauma and Shock 3, no. 1 (January 2010): 52-61. Collins, Tracie C., Nancy J. Petersen, Terri J. Menke, Julianne Souchek, Wednesday Foster, and Carol M. Ashton. "Short-Term, Intermediate-Term, and Long-Term Mortality in Patients Hospitalized for Stroke." Journal of Clinical Epidemiology 56, no. 1 (January 2003): 81-7.
MUC17-365	Simple Pneumonia with Hospitalization	Among adults in the United States, pneumonia is a leading infectious cause of hospitalization and death (Healthcare Cost and Utilization Project, 2013). Although pneumonia encompasses a broad range of diagnoses depending on -- among other things -- where the infection was acquired and certain comorbidities of the patient, simple pneumonia is mostly focused on community-acquired pneumonia (CAP), which is a major driver of Medicare morbidity and mortality. A patient's pneumonia is considered CAP when the patient has not been hospitalized or been a resident of a long-term care facility for more than 72 hours in the past 90 days before the onset of symptoms (Fung and Monteagudo-Chu, 2010). The annual incidence of CAP requiring hospitalization was 24.8 cases per 10,000 adults, with estimated incidence increasing with age. The estimated incidences of hospitalization among adults in the United States 50 to 64 years of age, 65 to 79 years of age, and 80 years of age or older were approximately 4, 9, and 25 times as high, respectively, compared to the incidence among adults 18 to 49 years of age (Jain et al., 2015). In addition, a 2012 study found that among the Medicare fee-for-service population, there was an estimated 1.3 million CAP cases and 74,000 CAP-related deaths, accounting for an annual cost of $13 billion (Yu et al., 2012). References: Healthcare Cost and Utilization Project. "Statistical Brief #168: Costs for Hospital Stays in the United States, 2011." (December 2013). Fung, H. B., and M. O. Monteagudo-Chu. "Community-Acquired Pneumonia in the Elderly." [In eng]. Am J Geriatr Pharmacother 8, no. 1 (Feb 2010): 47-62. Jain, S., W. H. Self, R. G. Wunderink, S. Fakhran, R. Balk, A. M. Bramley, C. Reed, et al. "Community-Acquired Pneumonia Requiring Hospitalization among U.S. Adults." [In eng]. N Engl J Med 373, no. 5 (Jul 30 2015): 415-27. Yu, H., J. Rubin, S. Dunning, S. Li, and R. Sato. "Clinical and Economic Burden of Community-Acquired Pneumonia in the Medicare Fee-for-Service Population." [In eng]. J Am Geriatr Soc 60, no. 11 (Nov 2012):

MUC ID	Measure Title	Rationale
		2137-43.
MUC17-367	HIV Screening	HIV is a communicable infection that leads to a progressive disease with a long asymptomatic period. In 2014, approximately 37,600 persons in the United States were newly infected with HIV (CDC 2017). Without treatment, most people develop acquired immunodeficiency syndrome (AIDS) within 10 years of HIV infection. Antiretroviral therapy (ART) delays this progression and increases the length of survival, but it is most effective when initiated during the asymptomatic phase. It is estimated that, on average, an HIV-infected person who is age 25 and receives high quality health care will live an additional 38 years (Farnham 2013). According to guidelines from the U.S. Department of Health and Human Services (HHS), antiretroviral therapy should be used for all HIV-infected people to reduce the risk of disease progression (regardless of CD4 cell count at diagnosis) (Panel on Antiretroviral Guidelines for Adults and Adolescents 2016). In the United States, an estimated 1.2 million people are living with human immunodeficiency virus (HIV), a serious, communicable infection that, if untreated, leads to illness and premature death (CDC 2016). At the end of 2013, 13 percent, or about 161,200, of those infected with HIV were undiagnosed, and almost 23 percent of the people who were diagnosed had a Stage 3 (AIDS) classification at the time of diagnosis (CDC 2016). One study showed that the median CD4 count at diagnosis is less than 350 cells/mm3, which is the threshold commonly used to determine when patients should initiate ART (Althoff et al. 2010). HIV screening identifies infected people who were previously unaware of their infection, which enables them to seek medical and social services that can improve their health and the quality and length of their lives. The use of ART with high levels of medication adherence has been shown to substantially reduce risk for HIV transmission (Panel on Antiretroviral Guidelines for Adults and Adolescents 2016). Based on the National Health Interview Survey, fewer than half of people 18 and older reported ever having been tested for HIV as of 2016 (Clarke 2017). References Althoff, K.N., S.J. Gange, M.B. Klein, J.T. Brooks, R.S. Hogg, R.J. Bosch, M.A. Horber, M.S. Saag, M.M. Kitahata, A.C. Justice, K.A. Gebo, J.J. Eron, S.B. Rourke, M.J. Gill, B. Rodriguez, T.R. Sterling, L.M. Calzavara, S.G. Deeks, J.N. Martin, A.R. Rachlis, S. Napravnik, L.P. Jacobson, G.D. Kirk, A.C. Collier, C.A. Benson, M.J. Silverberg, M. Kushel, J.J. Goedert, R.G. McKaig, S.E. Van Rompaey, J. Zhang, and R.D. Moore. “Late Presentation for Human Immunodeficiency Virus Care in the United States and Canada.” Clinical Infectious Diseases, vol. 50, 2010, pp. 1512-1520. CDC. “Monitoring Selected National HIV Prevention and Care Objectives by Using HIV Surveillance Data--United States and 6 U.S. Dependent Areas--2014.” HIV Surveillance Supplemental Report, vol. 21, no. 4, 2016. CDC. “HIV Incidence: Estimated Annual Infections in the U.S., 2008-2014 Overall and by Transmission Route.” Washington, DC: U.S. Department of Health and Human Services, 2017. Available at https://www.cdc.gov/nchhstp/newsroom/docs/factsheets/HIV-Incidence-Fact-Sheet_508.pdf. Accessed 6/7/2017.

MUC ID	Measure Title	Rationale
		Clarke, T.C., Norris, T., Schiller, J.S. "Early Release of Selected Estimates Based on Data from 2016 National Health Interview Survey." Washington, DC: National Center for Health Statistics, 2017. Available at https://www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201705.pdf. Farnham, P.G., Gopalappa, C., Sansom, S.L., Hutchinson, A.B., Brooks, J.T., Weidle, P.J., Marconi, V.C., Rimland, D. "Updates of Lifetime Costs of Care and Quality-of-Life Estimates for HIV-Infected Persons in the United States: Late Versus Early Diagnosis and Entry Into Care." Journal of Acquired Immune Deficiency Syndromes, vol. 64, no. 2, 2013, pp. 183-189. Panel on Antiretroviral Guidelines for Adults and Adolescents. "Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents." 2016. Available at http://aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf. Accessed June 13, 2017.

APPENDIX C: MEASURES LISTED BY PROGRAM

December 1, 2017

Appendix C Table of Contents

Chronic and Post-Acute Care Measures Programs

Home Health Quality Reporting Program

MUC ID	CMS Program	Measure Title	Priority
No new candidate measures were approved for consideration under this program in the current year.			

Hospice Quality Reporting Program

MUC ID	CMS Program	Measure Title	Priority
No new candidate measures were approved for consideration under this program in the current year.			

Inpatient Rehabilitation Facility Quality Reporting Program

MUC ID	CMS Program	Measure Title	Priority
No new candidate measures were approved for consideration under this program in the current year.			

Note:
A single unique measure can be associated with more than one CMS Program, and can have more than one Priority. Submitters could select as many Priorities (Domains) as apply. No attempt was made to rank order or identify primary or secondary priorities.

Long-Term Care Hospital Quality Reporting Program

MUC ID	CMS Program	Measure Title	Priority
No new candidate measures were approved for consideration under this program in the current year.			

Skilled Nursing Facility Quality Reporting Program

MUC ID	CMS Program	Measure Title	Priority
MUC17-258	SNF QRP	CoreQ: Short Stay Discharge Measure	Patient and Family Engagement; Communication and Care Coordination

Skilled Nursing Facility Value-Based Purchasing Program

MUC ID	CMS Program	Measure Title	Priority
No new candidate measures were approved for consideration under this program in the current year.			

Ambulatory Care and Meaningful Use Measures Programs

Medicare Shared Savings Program

MUC ID	CMS Program	Measure Title	Priority
MUC17-181	MSSP	Optimal Diabetes Care	Effective Prevention and Treatment
MUC17-215	MSSP	Diabetes A1c Control (< 8.0)	Effective Prevention and Treatment
MUC17-234	MSSP	Ischemic Vascular Disease Use of Aspirin or Anti-platelet Medication	Effective Prevention and Treatment

Merit-Based Incentive Payment System (MIPS)

MUC ID	CMS Program	Measure Title	Priority
MUC17-139	MIPS	Continuity of Pharmacotherapy for Opioid Use Disorder	Effective Prevention and Treatment
MUC17-168	MIPS	Average change in functional status following lumbar spine fusion surgery	Patient and Family Engagement
MUC17-169	MIPS	Average change in functional status following total knee replacement surgery	Patient and Family Engagement
MUC17-170	MIPS	Average change in functional status following lumbar discectomy laminotomy surgery	Patient and Family Engagement
MUC17-173	MIPS	Appropriate Use of DXA Scans in Women Under 65 Years Who Do Not Meet the Risk Factor Profile for Osteoporotic Fracture	Making Care Affordable
MUC17-177	MIPS	Average change in leg pain following lumbar spine fusion surgery	Patient and Family Engagement
MUC17-181	MIPS	Optimal Diabetes Care	Effective Prevention and Treatment
MUC17-194	MIPS	Optimal Vascular Care	Effective Prevention and Treatment
MUC17-215	MIPS	Diabetes A1c Control (< 8.0)	Effective Prevention and Treatment
MUC17-234	MIPS	Ischemic Vascular Disease Use of Aspirin or Anti-platelet Medication	Effective Prevention and Treatment
MUC17-235	MIPS	Routine Cataract Removal with Intraocular Lens (IOL) Implantation	Making Care Affordable
MUC17-239	MIPS	International Prostate Symptom Score (IPSS) or American Urological Association-Symptom Index (AUA-SI) change 6-12 months after diagnosis of Benign Prostatic Hyperplasia	Patient and Family Engagement
MUC17-256	MIPS	Screening/Surveillance Colonoscopy	Making Care Affordable
MUC17-261	MIPS	Knee Arthroplasty	Making Care Affordable

MUC ID	CMS Program	Measure Title	Priority
MUC17-262	MIPS	ST-Elevation Myocardial Infarction (STEMI) with Percutaneous Coronary Intervention (PCI)	Making Care Affordable
MUC17-263	MIPS	Revascularization for Lower Extremity Chronic Critical Limb Ischemia	Making Care Affordable
MUC17-310	MIPS	Zoster (Shingles) Vaccination	Effective Prevention and Treatment
MUC17-345	MIPS	Patient reported and clinical outcomes following ilio-femoral venous stenting	Patient and Family Engagement
MUC17-359	MIPS	Elective Outpatient Percutaneous Coronary Intervention (PCI)	Making Care Affordable
MUC17-363	MIPS	Intracranial Hemorrhage or Cerebral Infarction	Making Care Affordable
MUC17-365	MIPS	Simple Pneumonia with Hospitalization	Making Care Affordable
MUC17-367	MIPS	HIV Screening	Effective Prevention and Treatment

Hospital Measures Programs

Ambulatory Surgical Center Quality Reporting

MUC ID	CMS Program	Measure Title	Priority
MUC17-233	ASCQR	Hospital Visits following General Surgery Ambulatory Surgical Center Procedures	Making Care Safer; Communication and Care Coordination

End-Stage Renal Disease Quality Incentive Program

MUC ID	CMS Program	Measure Title	Priority
MUC17-176	ESRD QIP	Medication Reconciliation for Patients Receiving Care at Dialysis Facilities	Making Care Safer; Communication and Care Coordination
MUC17-241	ESRD QIP	Percentage of Prevalent Patients Waitlisted (PPPW)	Effective Prevention and Treatment
MUC17-245	ESRD QIP	Standardized First Kidney Transplant Waitlist Ratio for Incident Dialysis Patients (SWR)	Effective Prevention and Treatment

Hospital-Acquired Condition Reduction Program

MUC ID	CMS Program	Measure Title	Priority
No new candidate measures were approved for consideration under this program in the current year.			

Hospital Inpatient Quality Reporting

MUC ID	CMS Program	Measure Title	Priority
MUC17-195	HIQR	Hospital-Wide All-Cause Risk Standardized Mortality Measure	Patient and Family Engagement; Making Care Safer; Communication and Care Coordination; Effective Prevention and Treatment
MUC17-196	HIQR	Hybrid Hospital-Wide All-Cause Risk Standardized Mortality Measure	Patient and Family Engagement; Making Care Safer; Communication and Care Coordination; Effective Prevention and Treatment
MUC17-210	HIQR	Hospital Harm Performance Measure: Opioid Related Adverse Respiratory Events	Making Care Safer

Hospital Outpatient Quality Reporting

MUC ID	CMS Program	Measure Title	Priority
MUC17-223	HOQR	Lumbar Spine Imaging for Low Back Pain	Effective Prevention and Treatment

Hospital Readmissions Reduction Program

MUC ID	CMS Program	Measure Title	Priority
No new candidate measures were approved for consideration under this program in the current year.			

Hospital Value-Based Purchasing

MUC ID	CMS Program	Measure Title	Priority
No new candidate measures were approved for consideration under this program in the current year.			

Inpatient Psychiatric Facility Quality Reporting

MUC ID	CMS Program	Measure Title	Priority
No new candidate measures were approved for consideration under this program in the current year.			

Medicare and Medicaid EHR Incentive Program for Eligible Hospitals and Critical Access Hospitals

MUC ID	CMS Program	Measure Title	Priority
MUC17-196	EHR Incentive/EH/CAH	Hybrid Hospital-Wide All-Cause Risk Standardized Mortality Measure	Patient and Family Engagement; Making Care Safer; Communication and Care Coordination; Effective Prevention and Treatment
MUC17-210	EHR Incentive/EH/CAH	Hospital Harm Performance Measure: Opioid Related Adverse Respiratory Events	Making Care Safer

PPS-Exempt Cancer Hospital Quality Reporting

MUC ID	CMS Program	Measure Title	Priority
MUC17-178	PCHQR	30-Day Unplanned Readmissions for Cancer Patients	Patient and Family Engagement; Making Care Safer; Communication and Care Coordination